

Faculty of Media, Society and Culture

**An Historical Geography of the Pastoral Occupation of Six Major
River Basins in the North West of Western Australia**

Colleen Margaid O'Grady

**This thesis is presented as part of the requirements for
the award of the Degree of Doctor of Philosophy
of the Curtin University of Technology**

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**AN HISTORICAL GEOGRAPHY OF THE PASTORAL OCCUPATION
OF SIX MAJOR RIVER BASINS IN THE NORTH WEST OF WESTERN
AUSTRALIA**

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ABSTRACT

The thesis is based upon research into the historical geography of the pastoral industry in the six major drainage basins in the North West of Western Australia, in an attempt to outline its early development, and to explain how the rangeland degeneration associated with the Big Drought of 1936-1946 was exacerbated by unrealistic official expectations and poor management, particularly of stations in the hands of absentee corporate owners. It discusses the failure of government agencies to appreciate the effects of overstocking in an environment characterised by climatic variability and fragile rangeland resources. It draws attention to the official reluctance to take action against the destructive activities of profit-seeking corporate owners in the period leading up to and including the Big Drought, and of speculative leaseholders in more recent times. The thesis attempts to differentiate between the grassmen as leaseholders bent upon generating a sustainable income from the rangeland through conservative management, and the exploitative owners and their (often) incompetent managers. It identifies the specific characteristics of each of the basins in terms of the physical environment, the process of pastoral occupation and the resulting changing patterns of land use. It examines the changing nature of the habitat, economy and society of the Aboriginal people, from the days prior to European penetration up to the late 20th century. It also considers the future prospects of the pastoral industry in each basin, with references to such issues as environmental impact, Aboriginal land rights and occupation, and the mining industry. As well as a comprehensive overview of the historical geography of each river basin, the thesis also includes a study of infrastructural elements and of the activities of all groups of people involved in the development of the river basins.

CONTENTS

Chapter One: Introduction	
1.1 Overview of the Thesis	1
1.2 The Significance of Aridity and Rainfall Variability	3
1.3 The Significance of the Environment	5
1.4 The Significance of the Pastoral Industry in Relation to Other Groups and Their Activities	6
1.5 Conclusion	6
Chapter Two: Literature Review	
2.1 The Perceived and Phenomenal Environment	8
2.2 Human use of the Rangelands of the World and the Pristine Myth	9
2.3 Definition of Squatters and Grassmen	10
2.4 European Perception and Response to the Rangelands of the North West	11
2.5 Environmental Degradation of the Rangelands in Australia	14
2.6 Research Material Pertaining to Rangelands of the Eastern Colonies	15
2.7 Methodology and Research Process to the North West River Basins	18
2.7a Research material relating to aridity and climate	18
2.7b Exploration: its importance to the North West	19
2.7c Rangeland management	20
2.7d Land Regulations and Land Acts	22
2.7e Research into pre-European Australians	24
2.8 Availability of National, State and Local Research Relating to the Rangelands in the River Basins	24
2.9 Conclusion	29
Chapter Three: The Pre-European Landscape and its Occupants	
3.1 Introduction	30
3.2 Vegetation of the Murchison, Gascoyne, Ashburton, Fortescue DeGrey/Oakover and Fitzroy River Basins	32
3.3 Climate	47
3.4 The First Settlers of the North West	51
3.5 Technology of the First Settlers	54
3.6 Utilising the Rangelands and Coastal Regions	55
3.7 Aboriginal People and the Environment	57
3.8 Aboriginal Language Groups	58
3.9 European Settlement of Western Australia	59
3.10 Conclusion	60
Chapter Four: Pastoral Expansion into the River Basins 1855-1885	
4.1 Introduction	61
4.2 The First Move North: The Champion Bay/Northampton Shepherds,	

Geraldine Mine and the Murchison Region. Exploration and the First Pastoral Settlements	61
4.3 Exploration of the Pilbara: the Fortescue and DeGrey Basins	66
4.4 The Creation of the North District and its Relevant Land Regulations	68
4.5 The Second Push into the Northern Regions, Settlers, Explorers and Drovers: First Pastoral Enterprises in the North West River Basins	69
4.6 Exploration and Pastoral Enterprises in the Ashburton Basin	71
4.7 Pastoral Enterprises in the Fortescue Basin	74
4.8 Settlement at Shark Bay	75
4.9 Changes in the DeGrey Basin	76
4.10 Further Exploration: An Impetus to Settling the Headwaters of the Basins	77
4.11 Pastoral Expansion in the Murchison and Gascoyne Basins	78
4.12 The Fourth Wave: The Fitzroy Basin and Land Jobbery	82
4.13 Patterns of Settlement	85
4.14 Conclusion	85
Chapter Five: Cultural Landscapes of the 1880s	
5.1 Introduction	88
5.2 Surveys, Services, Settlement and Stock Routes	89
5.3 The Development of the Pastoral Industry: from Shepherds to Stockmen	97
5.4 Lease Improvement	100
5.5 Pastoralists and Pearlring	102
5.6 The Indigenous Population	104
5.7 Police Outposts and the Indigenous Population	107
5.8 Droughts, Floods and Cyclones	108
5.9 Conclusion	110
Chapter Six: Pastoral Occupation and Agricultural Experiments 1885-1920	
6.1 Introduction	111
6.2 The Established Grassmen	111
6.3 The 1890-1892 Drought	112
6.4 Goldrushes, Mortgages, Loans and the Spread of Leases	114
6.5 Opening up of the Kimberley Plateau	117
6.6 Tropical Agriculture and Pastoral Leases	120
6.7 Land Regulations and Land Legislation	128
6.8 Conclusion	132
Chapter Seven: Mineral Fields, Infrastructure and Services to the Mid 1930s	
7.1 Introduction	133
7.2 Gold Rushes and Law and Order in the Outback	133
7.3 The Development and Usage of Stock Routes	141
7.4 Drovers and Their Teams	143

7.5 The Development of Roads and Bridges	145
7.6 Teamsters, Mechanisation and Mail Runs	148
7.7 Ports, Shipping, Railways and Air Services	151
7.8 Telecommunications	157
7.9 Other Services	157
7.10 Conclusion	159
Chapter Eight: Pastoral Expansion to 1935	
8.1 Introduction	160
8.2 Stock Husbandry	160
8.3 Fencing and Watering Points	163
8.4 Station Work and Employees	165
8.5 Amalgamation of Leases	170
8.6 Stock Diseases, Cattle Duffing and the Vermin Problem	172
8.7 A Seemingly Stable Environment	175
8.8 The Indigenous Population	180
8.9 Climatic Hazards	186
8.10 Conclusion	190
Chapter Nine: The Big Drought and Landscape Changes to 1949	
9.1 Introduction	191
9.2 Climate of the River Basins 1936-1950	192
9.3 Effect of the Big Drought on Foraging Plants and Stock Numbers	195
9.4 Drought-affected Stations and Their Climatic Conditions: Some Examples	198
9.4a Murchison Basin	198
9.4b Gascoyne Basin	202
9.4c Ashburton Basin	206
9.4d Fortescue Basin	209
9.4e DeGrey Basin	213
9.4f Fitzroy basin	217
9.5 The 1940 Royal Commission Concerning the Big Drought	218
9.6 Some Attempts at Land Rehabilitation	220
9.7 The Vermin Problem	221
9.8 World War II and the Rangelands	223
9.9 The Indigenous Population	225
9.10 Conclusion	228
Chapter Ten: Infrastructure, Services and Mineral Booms to the 1990s	
10.1 Introduction	229
10.2 Roads and Stock Routes, Railways and Mailruns	230
10.3 Important Minerals of the River Basins	237

10.4 Goldmining and Services in the Murchison Basin	238
10.5 Mining and Services in the Gascoyne Basin	246
10.6 Mining and Services in the Fortescue and Ashburton Basins	250
10.7 Mining and Services in the DeGrey Basin	256
10.8 Mining and Services in the Fitzroy Basin	258
10.9 Population Growth in the North West	263
10.10 Communication Lifelines of the North West: The RFDS and Telecommunications	264
10.11 Law and Order in the Outback	266
10.12 Conclusion	268
Chapter Eleven: Pastoral Landscape to the 1990s	
11.1 Introduction	269
11.2 The Wool Boom, Beef Marketing, Station Infrastructure and Stock Numbers	270
11.3 Rangeland Degradation and Rehabilitation	274
11.4 Case Studies in Rangeland Management	275
11.4a Murchison Basin	275
11.4b Gascoyne Basin	279
11.4c Ashburton Basin	285
11.4d Fortescue Basin	290
11.4e DeGrey Basin	294
11.5 Intensification Attempts in the Fitzroy Basin	298
11.6 Agricultural Experiments in the Other Basins	309
11.7 Conclusion	311
Chapter Twelve: Aboriginal Landscapes to the 1990s	
12.1 Introduction	314
12.2 Aboriginal People Pre-1970s: Some Examples	315
12.3 The Post-1970 Situation	317
12.4 The Autonomous Nomads of the DeGrey Basin	319
12.5 The Station Aborigines of the Fitzroy Basin	321
12.6 Aboriginal Communities of the Murchison Basin	324
12.7 Aboriginal Communities of the Gascoyne Basin	328
12.8 Town-Based Communities	330
12.9 Aboriginal Tourist Operations in the Gascoyne, Ashburton, Fortescue and Fitzroy Basins	332
12.10 Conclusion	336
Chapter Thirteen: Conclusion	338
References	345

LIST OF FIGURES

Chapter One	
1.1 Arid Australia and the Vegetation Areas Under Study	4
Chapter Two	
2.1 Rangeland Perception at European Settlement and the Response After the Major 1930s Drought	13
Chapter Three	
3.1 Vegetation of the North West of Western Australia	31
3.2 Vegetation of the Murchison Basin	33
3.2 Climate Basin 702 Murchison River	33
3.3 Vegetation of the Gascoyne Basin	35
3.3 Climate Basin 704 Gascoyne River	35
3.4 Vegetation of the Ashburton Basin	38
3.4 Climate Basin 706 Ashburton River	38
3.5 Vegetation of the Fortescue Basin	40
3.5 Climate Basin 708 Fortescue River	40
3.6 Vegetation of the DeGrey Basin	42
3.6 Climate Basin 710 DeGrey River	42
3.7 Vegetation of the Fitzroy Basin	44
3.7 Climate Basin 802 Fitzroy River	44
3.8 Mean Annual Rainfall of the River Basins	50
3.9 Mean Annual Rainfall of the River Headwaters	50
3.10 The Continental Shelf of Australia, Papua New Guinea and the Phillipines	52
3.11 Trade Routes of the Aboriginal People Across Australia	53
Chapter Four	
4.1 The First Move Towards the Murchison River Basin in 1847	63
4.2 Exploration of the River Basins	64
4.3 First Leases in the Murchison Basin 1858 to 1860	65
4.4 First Leases in the Pilbara and the DeGrey Basin 1864 to 1872	69
4.5 Explorations of Sholl and the Victorians	72
4.6 The First Leases in the Ashburton Basin 1866 to 1874	73
4.7 The Earliest Leases in the Fortescue Basin 1866 to 1886	74
4.8 Brown Brothers' Leases Shark Bay Region 1864 to 1865	75
4.9 The Grant, Anderson and Harper Leases in the DeGrey Basin 1878	77
4.10 The Spreading of Leases in the Murchison Basin 1873 to 1882	79
4.11 The Spreading of Leases in the Gascoyne Basin 1876 to 1885	80
4.12 Some of the Ribbon Leases in the Fitzroy Basin 1879 to 1881	82
4.13 Process and Patterns of Settlement in the North West 1859 to 1865	86
Chapter Five	
5.1 First Towns and Landings North West	91
5.2 Town Plan of Condon	93
5.3 Fencing on DeGrey Station in the DeGrey Basin	101
5.4 DeGrey, Mulyie, Muccanoo and Pardoo Leases DeGrey Basin	102

Chapter Six	
6.1 Leases of Charles Smith in the Fortescue Basin	115
6.2 Leases of Charles Smith in the Ashburton Basin	115
6.3 The Spread of Pastoral Leases to 1900	118
6.4 Excised Land from Brick House Pastoral Lease	123
6.5 Udialla Agricultural Area Fitzroy Basin	125
6.6 Knowsley Agricultural Area Yeeda and Derby	127
6.7 The Spread of Pastoral Leases 1901 to 1930	131
Chapter Seven	
7.1 Goldfields Towns and Mine Sites Murchison Basin	135
7.2 Police Depots and Mine Sites Gascoyne Basin	136
7.3 Mining Settlements in the DeGrey Basin	137
7.4 The Ashburton Goldfield	138
7.5 Police Depots of the Fitzroy Basin	140
7.6 Stock Routes, Roads, Towns and Settlements to 1935	142
7.7 Ports, Landings and Railways in the North West	153
Chapter Eight	
8.1 Sketches of the Blocks Held by Drage Brothers and Mitchell in the Murchison Basin 1894	170
8.2 The Rabbit Proof Fences	174
8.3 Rainfall Figures for the DeGrey Basin 1925	189
Chapter Nine	
9.1 Rainfall Coastal Basins 1934 to 1946	193
9.2 Rainfall Central Basins 1934 to 1936	193
9.3 Rainfall Basins Headwaters 1934 to 1936	194
9.4 Declining Sheep Numbers of Selected Stations	197
9.5 Selected Drought-Affected Stations in the Murchison Basin	199
9.6 Rainfall Murchison Basin 1934 to 1946	202
9.7 Selected Drought-Affected Stations in the Gascoyne Basin	203
9.8 Rainfall Gascoyne Basin 1934 to 1946	205
9.9 Selected Drought-Affected Stations in the Ashburton Basin	207
9.10 Rainfall Ashburton Basin 1934 to 1946	208
9.11 Selected Drought-Affected Stations in the Fortescue Basin	209
9.12 Rainfall Fortescue Basin 1934 to 1946	212
9.13 Selected Drought-Affected Stations in the DeGrey Basin	213
9.14 Rainfall DeGrey Basin 1934 to 1946	216
9.15 Selected Stations in the Fitzroy Basin	217
9.16 Rainfall Fitzroy Basin 1934 to 1946	218
Chapter Ten	
10.1 Road Development in the North West and Fitzroy Basin 1950 to 1960	231
10.2 Road Development in the Fitzroy Basin	232
10.3 Re-Alignment of North West Coastal Highway	233
10.4 Mineral Fields, Towns and Popular Tourist Venues, Murchison Basin	238

10.5 Sketch Plan of Murchison Settlement	244
10.6 Localities of Plutonic Mine, Towns and Tourist Venues, Gascoyne Basin	246
10.7 Plutonic Operations Limited, Three Rivers Lease	247
10.8 The Proposed Babbage Island Northwater Estate, Carnarvon	248
10.9 Sketch Plan of Gascoyne Junction, Gascoyne Basin	249
10.10 Mining Locations and Towns Fortescue and Ashburton basins	250
10.11 Map of Mining Railways in the Pilbara	251
10.12 Map of Pipeline for the Port Hedland Region	253
10.13 Localities of Mine Sites, Towns and a Borefield DeGrey Basin	256
10.14 Localities of Mines Sites and Towns Fitzroy Basin	259
10.15 Plan of Tidal Power Plant for Derby	261
10.16 Population Growth of the North West	263
Chapter Eleven	
11.1 Rainfall Murchison Basin 1950-1960	276
11.2 Selected Stations in the Murchison Basin	277
11.3 Rainfall Gascoyne Basin 1950-1960	280
11.4 Selected Stations in the Gascoyne Basin	281
11.5 Rainfall Ashburton Basin 1950-1960	285
11.6 Selected Stations in the Ashburton Basin	286
11.7 Rainfall Fortescue Basin 1950-1960	290
11.8 Selected Stations in the Fortescue Basin	291
11.9 Death of Trees on Ethel Creek and Roy Hill Stations	293
11.10 Rainfall DeGrey Basin 1950-1960	295
11.11 Selected Stations in the DeGrey Basin	295
11.12 Rainfall Fitzroy Basin 1950-1960	298
11.13 Selected Stations in the Fitzroy Basin	300
11.14 The Liveringa Lease and Camballin Location	301
11.15 American-Held Leases in the West Kimberley	303
Chapter Twelve	
12.1 Stations Connected to the Nomads. DeGrey Basin	319
12.2 Stations and Aboriginal Communities Fitzroy Basin	322
12.3 Location of Aboriginal Communities in the Murchison Basin	325
12.4 Location of Two Aboriginal Communities in the Gascoyne Basin	328
12.5 Location of Makathunni Community in the Ashburton Basin	333
12.4 Aboriginal Tourist Ventures in the Fortescue Basin	335

LIST OF PLATES

Title Page Prolific Cotton Bush on Three Rivers Station.

Chapter Three	
3.1 Mulga Lands of the Central Murchison Basin	32
3.2 Coastal Limestone Hills Near the Murchison River Mouth	34
3.3 Undulating Stony Uplands Central Gascoyne Basin	36

3.4 Mount Bruce Hamersley Range	37
3.5 Millstream Springs Fortescue Basin	41
3.6 Basalt Plain DeGrey Basin	43
3.7 Grasses on the Kimberley Plateau Fitzroy Basin	45
3.8 Treeless Cracking Clay Plains Fitzroy Basin	46
3.9 Pindan Country Fitzroy Basin	47
3.10 Approaching Cloud Band Gascoyne Basin	48
3.11 Aboriginal Mia Mia Millstream Fortescue Basin	54
3.12 Prehistoric Petroglyphs Mount Augustus Gascoyne Basin	55
3.13 Greenstone Grinding Stone Central Murchison Basin	56
Chapter Five	89
5.1 Maitland Brown and Charles Harper	96
5.2 The <i>Arabella</i> at Condon	97
5.3 Shepherd's Hut in the Central Murchison	98
5.4 Camel Carting Grass for Hay in the Murchison	99
5.5 The DeGrey Station Homestead in the DeGrey Basin	101
5.6 Drying Wool DeGrey Station in the DeGrey Basin	103
5.7 Pearling Luggers Mangrove Harbour	105
5.8 Aborigines DeGrey Station in the DeGrey Basin	108
5.9 Aboriginal Prisoners in the Central Gascoyne Basin	
Chapter Six	112
6.1 Grassmen Relaxing on Board Ship	120
6.2 The Blythes of the Fitzroy Basin	124
6.3 Rocky Pool in the Lower Gascoyne River	
Chapter Seven	141
7.1 Drover Nat Buchanan	145
7.2 Drover and Horsebreaker Harry Farber	147
7.3 The Ballinu Bridge in the Murchison River Basin	149
7.4 A Camel Team at Warrawagine Station	149
7.5 Cobb and Co's Motorised Coach at Peak Hill	150
7.6 Frank Maloney's Royal Mail Lorry at Peak Hill	150
7.7 Bill Price's Taxi Crossing the Fitzroy River	152
7.8 Wool Awaiting Shipment at Derby	155
7.9 Ox Team Leaving Byro Station in the Central Murchison Basin	155
7.10 Wool-laden 'Spinifex Express', Front End	155
7.11 Rear End of the 'Spinifex Express'	156
7.12 Aviators Norman Brearley, Charles Kingsford Smith and Others	157
7.13 Graves of Robert Fawcett and Edward Broad Murchison House Station	158
7.14 Bilyun Hotel on the Murchison River	
Chapter Eight	163
8.1 The Free-Flowing Boolathana Bore Boolathana Station in the Gascoyne	164
8.2 The Free-Flowing No. 4 Bore Brick House Station in the Gascoyne	165
8.3 A Musterer's Camp Woolgorong Station in the Central Murchison 1918	

8.4 Billabalong Station Shearing Shed in the Central Murchison 1907	166
8.5 A Shearing Team Crossing Flooded River in the Pilbara	167
8.6 Ben Sharpe's New Homestead Wooleen Station in the Central Murchison Basin	176
8.7 Sprawling Homestead Complex Woolgorong Station in the Central Murchison Basin	176
8.8 Lee-Steere's Vegetable Patch Woolgorong Station in the Central Murchison Basin	178
8.9 Aboriginal Blade Shearers Muccan Station in the DeGrey Basin	182
8.10 Aboriginal House Girls of DeGrey Station in the DeGrey Basin	183
8.11 Cyclone Wreckage of Cossack Wharf 1898	187
8.12 Cyclone Damage Muccan Station in the DeGrey Basin 1925	189
Chapter Ten	
10.1 A Three-Trailer Road Train Crossing Nanaturra Bridge, Ashburton River	235
10.2 The Number 25 Well Travellers Rest, Meekatharra	236
10.3 The Old Assayer's Workshop, Day Dawn	241
10.4 The Ruins of the Peak Hill Hotel	241
10.5 Guy Bell's Former Nannine Home in Meekatharra	242
10.6 The Murchison Shire Offices in Murchison Settlement	244
10.7 Wildflowers on the Gascoyne-Mullewa Road	245
10.8 Mount Augustus in the Gascoyne basin	249
10.9 BHP's Loading Facilities at Nelson's Point, Port Hedland	252
10.10 Once was Mount Tom Price in the Fortescue Basin	254
10.11 Once the Town of Shay Gap in the DeGrey Basin	257
10.12 Francis Street, Marble Bar in the DeGrey Basin	258
10.13 Clarendon Street, Derby	260
10.14 The Tarunda Shopping Village in Fitzroy Crossing, Fitzroy Basin	262
10.15 Linda Henney on the Derby School of the Air	266
Chapter Eleven	
11.1 Myroodah Station Shearing Shed	274
11.2 Floodwaters of the Fitzroy River	299
11.3 The Fitzroy River Barrage	302
11.4 Woody Weeds in Camballin Paddock	307
11.5 Experimental Irrigation, Landor Station	311
11.6 Westoby Plantation, Carnarvon	312
Chapter Twelve	
12.1 ALPA-Clothed Children of the Nomads' Strelley School	320
12.2 Looma Community's School Buildings, Fitzroy Basin	324
12.3 ATSIC-Funded Water Tanker, Barrell Well Nanda Community	326
12.4 Pia Springs in the Murchison	327
12.5 Home in Burrungurrah Community	329
12.6 Home in Meekatharra - Meniarra Community	330
12.7 Makathunni Community Ashburton Basin	334
12.8 Karijini Aboriginal Corporation Tourist Headquarters, Hamersley Ranges	335

LIST OF TABLES

Chapter Eight	
8.1 Growth of Sheep Numbers 1903 to 1935	162
Chapter Nine	
9.1 The Dramatic Fall of Sheep Numbers 1934 to 1946	196
Chapter Eleven	
11.1 Cattle Numbers of the North West 1950-1960	271
11.2 Sheep Numbers of the North West 1950-1960	272

ABBREVIATIONS

AAMS	Australian Aerial Medical Service
ACC	Australian Cattle Company
AEDO	Aboriginal Economic Development Office
AGWA	Agriculture Western Australia
AIL	Australian Industries Limited
AIM	Australian Inland Mission
ALCCO	Australian Land and Cattle Company
ALPA	Arnhem Land Progress Association
AMP	Australian Mutual Providence Society
AN	Accession Number (files of DL&S in SROWA)
ANZECC	Australia & New Zealand Environmental Conservation Council
ARMCANZ	Agriculture & Resource Management Council of Australia & New Zealand
ATSIC	Aboriginal and Torres Strait Islander Commission
AWU	Australian Workers Union
BHP	Broken Hill Proprietary (Co. Ltd.)
CALM	Conservation and Land Management
CDEP	Community Development and Employment Programme
CSIRO	Commonwealth Scientific Industrial Research Organisation
DL&S	Department of Lands & Surveys - Western Australia
DOLA	Department of Land Administration - Western Australia
ECC	Estimated Carrying Capacity
EPA	Environmental Protection Agency
GDC	Gascoyne Development Commission
HI	Hammersley Iron
ILC	Indigenous Land Corporation
KDC	Kimberley Development Commission
KPC	Kimberley Pastoral Company
MMA	McRobertson Miller Airways
MSC	Murray Squatting Company
PA	Pastoralists Association
PAB	Pastoral Appraisal Board
PB	Pastoral Board
PGA	Pastoralists and Graziers Association
PLB	Pastoral Land Board
PLAP	Pastoral Lease Appraisal Plan
PWD	Public Works Department
RAAF	Royal Australian Air Force
RFDS	Royal Flying Doctor Service
SROWA	State Records Office Western Australia
SUC	Shep Unit Capacity (Department of Agriculture)
VDC	Volunteer Defence Corp
VCL	Vacant Crown Land
WAA	Western Australian Airways
WANPARA	Western Australian National Parks and Reserves Association
WARMS	Western Australian Monitoring System

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Chapter One

Introduction

1.1 Overview of the Theses

The North West of Australia, hereinafter referred to as the North West, is a vast semi-arid to arid region that encompasses at least one-half of the State of Western Australia. This thesis involves the study of six major river basins in the North West: the Murchison, Gascoyne, Ashburton, Fortescue, DeGrey and Fitzroy. Its major concern is the historical geography of settlement and use of the rangelands, and the perceptions of the environment held by the rangeland users, in the basins. There were four distinct waves of pastoral occupation in the North West, with the Murchison basin first occupied in 1858, the Pilbara littoral and DeGrey basin in 1862, the intervening basins in the 1870s, and the Fitzroy basin after 1879. There are three distinct precipitation and vegetation regions among the basins: the winter rains and the localised summer thunderstorms of the semi-arid shrublands of the Murchison, Gascoyne and Ashburton basins, where the yearly average is 200mm to 250mm; the mainly summer cyclonic rains of the semi-desert/sub-humid Fortescue and DeGrey basins with their 250mm to 300mm yearly average, and the cyclonic and tropical disturbances of the semi-arid grasslands of the Fitzroy basin with rainfall averaging from 600mm to 900mm. Under each of these regimes, the rangelands of the basins underwent extreme pressure, particularly during drought, following pastoral occupation. The crucial characteristics of the environment of the rangelands of the basins are climatic variability and the relatively fragile rangeland resources. The significant perceptions and misperceptions of the climate held by European rangeland users and officials are important in understanding how the pastoral resources were exploited. Rangeland problems were exacerbated by the demands of company speculators for rewarding dividends, the unrealistic expectations of the government and its agencies requiring intensification of leases, their ignorance of the effects on the rangelands of prolonged drought and the severe but mostly beneficial cyclones, and their failure to heed the complaints and pleas of the experienced grassmen.

In studying, researching and pondering information related to the pastoral industry, including the initial settlement patterns, it became apparent that those who initially settled the river basins in the North West did so with the understanding that the climate was variable and the rangeland resources fragile. The diaries and letters quoted in Nairn (1928) and Taylor (1987) for example, demonstrate that pioneers such as Walter Padbury and John Withnell had no intention of developing a cropping enterprise and that

they perceived also the need for large areas of land in order to sustain a viable pastoral enterprise. Agricultural development following pastoral enterprise was not in the thinking of the settlers in all basins and only cautiously considered by officialdom. Most settlers stayed and developed worthwhile commercial businesses on the first leases selected, or moved to select more suitable leases elsewhere in the basins. In this instance as well, the land regulations of late 1862 supported this view. In the case of the Fitzroy basin, however, land regulations were devised with extensive pastoralism in mind but the geometry of the initial leasehold blocks, each with its river frontage, signalled intentions to engage in crop farming on the river floodplains. The first European settlers, however, had no desire for a repeat performance of the South West which, after the prodigality of the initial land grants, resulted in land-allocation stringencies and overgrazing. With this in mind and the skills available, I have attempted to portray, in the study of settlement and expansion of the pastoral industry in the river basins, that the desire of the first settlers, and those who later followed, speculators excluded, was the aspiration to establish a profitable industry and a particular way of life. Settlers like Nairn, Withnell, Anderson, McRae and Grant I have called grassmen to differentiate from others who used and abused the land or failed in their attempt to establish a pastoral enterprise. The process of landscape change is reflected in their attempts of living in, and with, the environment, whilst developing their leases. Despite the fact that the first settlers had selected their leases based upon the explorers' reports and had not appraised the land prior to sailing north, pursuing such a way of life initially is seen by some as picking the eyes out of the country as the first arrivals. Of importance concerning selection was the availability of surface water for the stock. This too, was at first based upon the explorers' reports.

The early failure to understand the environment of the South West of Western Australia however, was evident in the loss of grasses through overgrazing on the early Swan River Colony ribbon grants and in and around the Avon Valley. Foraging and watering resources for growing numbers of flocks and herds were soon depleted owing to the incomplete knowledge of the limited recuperative powers of the native flora and the size of the grazing pasture. This same misconception could not be applied to the majority of European settlers in the North West when transforming an Aboriginal-modified landscape into one of commercial pastoralism. Learning from the South West experience the settlers well understood the limitations of the rangelands. Of importance, however, were the fallacies held by the government agencies and speculative leaseholders of the recuperative powers of the resources of the rangelands, and their misunderstanding of the

capricious climate, for their inflated estimates of carrying capacity lasted well into the 20th century. The intensification process of paddock development followed by lease amalgamation in the early 20th century, in an attempt to achieve the carrying capacity demanded by officialdom, was challenged by the ravages of an unforeseen, prolonged and devastating drought in the 1930s. Furthermore, rangeland problems were exacerbated when the drought was followed by maintenance difficulties due to war and staffing shortages. The effects of years of pastoral expansion and contraction and the resultant environmental degradation from severe droughts and overstocked leases, are still apparent in the modern landscape.

Important issues such as rangeland management, Aboriginal involvement, stocking capacity, progress of services and modern technology in its various stages, and mineral exploration and exploitation will be discussed as agents of landscape change. Included will be the failed attempts at pastoral intensification and agricultural settlement in the Fitzroy basin, together with the misconceptions underlying such schemes. In this context the development of plantations in Carnarvon at the mouth of the Gascoyne River is an important exception. In particular the thesis will explore the assertion that the soils in all basins, and variability of climate, insect pests and the tyranny of distance with reference to the Fitzroy basin, are major contributors to their unsuitability for agricultural exploits in the North West.

The North West settlement differed significantly from the early spread of squatting in the eastern colonies, as the appropriate land regulations and lease size were already in place prior to the Europeans moving north. The Fitzroy basin was the exception, where land jobbery by those who had political connections was based on Alexander Forrest's glowing report, resulting in serious overstocking on the floodplains for over 80 years. This was followed by attempts of agriculture production within a limited area and pastoral intensification that exacerbated the situation of the degraded river frontage.

1.2. The Significance of Aridity and Rainfall Variability

Australia's arid zone is a vast area covering 5.7 million square kilometres, or 74% of the continent (Figure 1.1). This single zone is the largest arid area in the world and holds only three percent of the nation's population. A feature of the aridity is an

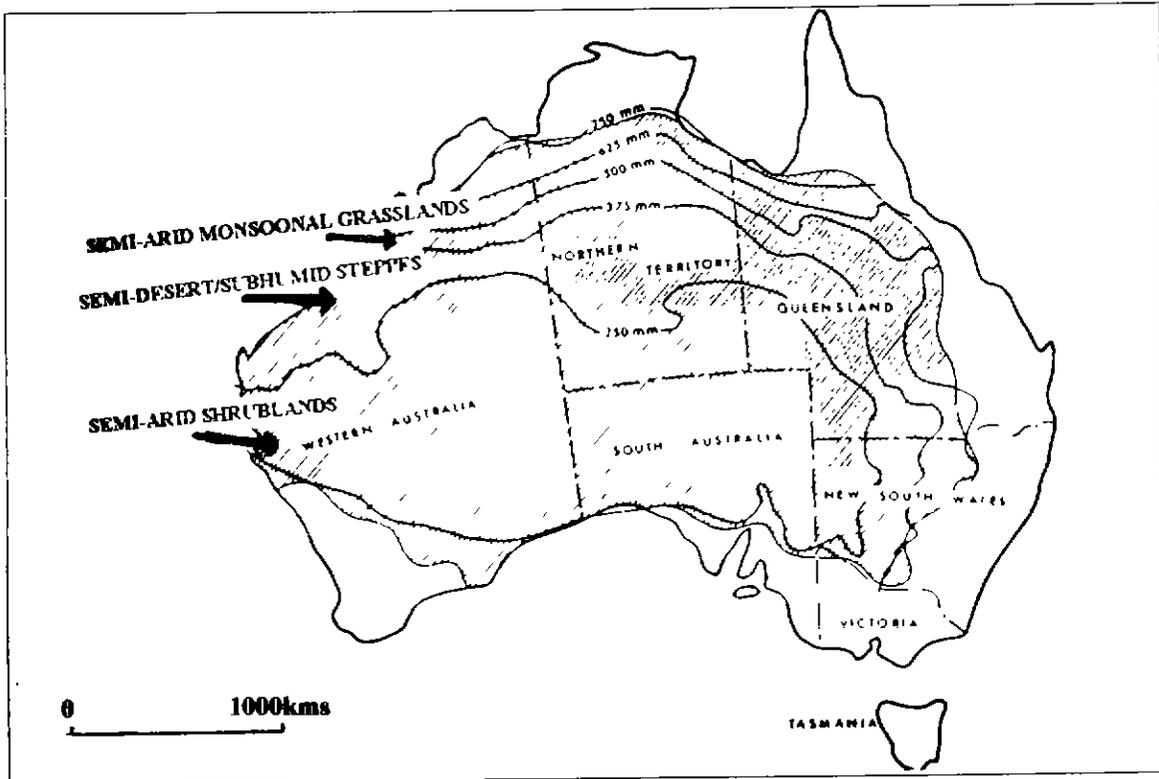


Figure 1.1: Arid Australia and the vegetation areas under study. After Perry 1970.

average annual rainfall of less than 300mm. A further limiting characteristic of the arid climate is the variability of that rainfall. Prolonged unseasonable dry spells with little or no rainfall are defined as drought and can extend over several years. High rates of evaporation are also characteristic of arid Australia (Perry 1970). The Murchison, Gascoyne and most of the Ashburton basins are arid with average annual rainfalls of 250mm or less except near the mouth of the Murchison. The Fortescue and DeGrey basins, though in a semi-desert to semi-tropical environment (Beard 1975), are within Perry's category. The Fitzroy basin has an arid to semi-arid monsoonal climate (Speck et al 1964), the annual average being 400mm in the east to 600mm around Derby, and even higher over the King Leopold Range (Waters and Rivers 1996). Despite the deceptively high averages in the two latter regions, variability is as much a feature as in the drier areas further south and evaporation rates tend to be higher. Perry (1970:307) states that:

...the Australian arid zone is flat and low. There are no mountain ranges high enough to effect climate, more than marginally, and very locally. (Thus) the vegetation of Australia is unique

Drought is a regular occurrence, especially in the less humid portions of Australia. In the North West the grassmen who understood the climatic variability and rangeland resources were conservative in their stocking methods. Others seemed totally unaware of the fact that, even at best, carrying capacity was limited. Consequently during drought their rangeland resources were placed under extreme pressure, and thousands of stock died. An added problem before the era of all-weather roads and road trains was the inability to move stock to more congenial climes for the duration of the droughts. A more recent issue has been the difficulty in selling such stock because of a glutted market.

In the modern era, at least the grassmen's improved perception of the environment results in a clearer understanding of the rangelands, and increased skills in their management. Rangeland management in the arid zones of the United States is seen by Haseltine (1997) as:

... a discipline and an art that skillfully applies an organized body of knowledge accumulated by range science and practical experience for two purposes (1) protection, improvement, and continued welfare of the basic resources, which in many situations include soils, vegetation, endangered plants and animals, wilderness, water, and historical sites; and (2) optimum production of goods and services in combinations needed by society.

A recent official definition of rangeland management in Western Australia defines it as a planned response by the land manager to seasonal conditions of rainfall and to the health of the rangeland (Mitchell & Wilcox 1994). The Western Australian definition also places emphasis on the variability of climate.

1.3. The Significance of the Environment

By studying and recording the changes to the landscape, one can try to make sense of what those changes may mean for the future and why and how they occurred in the first place. The environment, which is imperfectly understood by those who use it, produces a response which is conditioned, not only by motivation and by a person's learning, but also by the level of accuracy of the perception of it. Johnston (1983: 68, 69) describes Kirk's (1963) distinction between the Phenomenal Environment, which is the totality of elements and processes which constitute an environment, and the Behavioural Environment:

The latter comprises those 'facts of the Phenomenal Environment' perceived by human beings with motives, preferences, modes of thinking, and tradition drawn from their social, cultural context'; only facts in the Behavioural Environment are relevant to the body of decision-making

In turn, human use of the landscape creates profound continuous changes that in turn can affect the way in which the landscape may be perceived. As humans move into a new physical environment, as in the case of the first European settlers of the North West, a dynamic interaction occurs. The full reality of the phenomenal environment may remain elusive for a considerable time while settlers' perceptions of it are progressively refined. Thus in the early stages at least, the settlers, except for the experienced grassmen, perceived the environment in which they necessarily made their decisions, in a manner that tended to be so misleading as to be productive of extreme hardship, if not outright failure. On the world scale, rangeland usage has not only reflected this process but has also been responsible for profound changes to the environment since the very beginning of pastoralism in Neolithic times in the Middle East.

1.4. The Significance of the Pastoral Industry in Relation to Other Groups and Their Activities

This thesis will examine the direct and indirect influences of mineral booms upon the pastoral industry and the rangelands of the North West with special reference to capital, technology, infrastructure and settlement. It will also consider the development of essential services, the changing landscape and practices of the European occupants, and the dynamic interrelationships between Aboriginal culture and society.

1.5. Conclusion

This thesis will demonstrate the different approaches to rangeland management by grassmen and other leaseholders, land speculators, and government agencies; it will describe and account for the differing interactions between the environment and pastoralism in the six river basins, and identify the similarities and differences in outcome; it will identify the problems associated with isolation, and consequential geographical change to the landscape as technologies of transportation and communication developed, and mining operations commenced. A commonality is that the grassmen have the problem of trying to exercise cautionary measures in using the

resources of fragile rangelands that are subjected to the vagaries of a capricious climate, for cautionary measures are in direct opposition to the achievement of the impracticable carrying capacity required by officialdom.

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Chapter Two

Cultural Landscape, Methodology and Literature Review

2.1 The Perceived and Phenomenal Environments

With knowledge drawn from archival research and associated field trips this thesis examines the Aboriginal and European impact on the rangelands in the six drainage basins of the North West. It also considers how the current occupants perceived their environment compared to their predecessors. The perceived, or behavioural, environment, is a human structure shaped by the historical environment of the rangeland users and their accumulated culture. Also important are the characteristics of the phenomenal environment, whose nature has been established, however incompletely, by rangeland scientists. For example Griffiths and Robin (1997:3) state that

.. Ecology and empire.. were not only factors shaping environmental realities on the [Australian] frontier, they were also closely entwined in the settler psyche.

The settler psyche of the Europeans moving to the North West was influenced by the need for cheap labour and the requirement to control the indigenous people. The newcomers were steeped in a patriarchal approach towards the Aborigines. Land they required for pastoral enterprise and assistance to establish it. Understanding the tyranny of distance can also help explain the psyche of the settlers in the North West river basins; their decision to settle the vast region, and the planning and organisation they conducted to get there. Distance helped shape a unique perception of their environment, with isolation a major factor in that shaping. The importance of being self-sufficient was a part of it, with the productivity and marketing, albeit marginal, of their stock determining their needs and their sense also of non-recognition of their isolation by government based up to 2000 kilometres away in the South West. These factors culminated into a new cultural, landscape. As Holmes (1981:73) noted, marginal productivity created a cultural environment of low accessibility, and Blainey's (1966) tyranny of distance reigned supreme from settlement into the modern era

To appraise the impact of settlers on the landscape of the North West rangelands, and to understand the settler psyche of British imperialism, a discussion and comparison of the perceived and phenomenal environments is of paramount importance

particularly with regard to assessing the present condition and future prospects of the North West pastoral industry and the rangelands.

The North West landscape encountered by the explorers and pastoralists was not a natural landscape, but a cultural one deriving from thousands of years of Aboriginal occupation. The clash of two vastly different cultures in a mostly arid region also had an input, with adaptation and change occurring to both the perceived and phenomenal environments. The Aborigines had clear mental maps of their perceived environment, whilst their culture required Dreaming Tracks and nomadism (Jones 1979). In comparison, the behavioural environment of British imperialism required maps on paper, agricultural skills and domesticated stock, with the perception of having the ability to radically transform the given landscape into neatly developed areas (Johnston 1983b). However, the perception of British superiority, order and planning underwent a forced adaptation to the harsh and arid environment of the North West, as the thought behind the action of intentionally transforming the rangelands was influenced by the empirical rationale of the late nineteenth century thinking (Johnson 1983a).

Thus the phenomenon of the external world of British imperialism was partially responsible for the initial approach to pastoral settlement of the rangelands in the North West. Over time, however, the perception of the environment underwent change when the harshness of the country and the variability of rainfall failed the expectations of the bureaucrats, corporates and investors, that good grasslands would be continuously available to fatten stock. Adaptation was eventually forced upon them, though willingly practised by the more experienced grassmen. Adaptation to the phenomenal environment, however, is as old as the grazing of domesticated stock, the planting of crops and the consequent modification of the landscape.

2.2 Human Use of the Rangelands of the World and the Pristine Myth

The domestication of grazing stock took place sometime in antiquity. The earliest possible grazing practices of domesticated stock commenced in the high country of Mesopotamia in the Near East around 10 000 BP at the same time as agriculture was practised in the valleys of the same area (Broek and Webb 1978). Sometime after 7000 BP domesticated grazing animals appeared in North Africa, suspected to have been brought in from the Near East. In Kenya the grazing of stock was practised around 8000

BP, though data pertaining to this period is scanty. However, it is certain that a pastoral industry involving domesticated cattle was flourishing in Kenya from 2500 to 3000 BP. Indeed a productive pastoral industry may possibly have occurred at a much earlier date in that region and in the Near East (Smith 1992). Stock grazing, along with crop farming, no doubt commenced in other areas of the world around the same time. Thus, for thousands of years until the 1990s countless numbers of domesticated stock have grazed their way through the world's rangeland vegetation, always in competition with the native fauna

Landscape changes have been an ongoing process, with, in the contemporary situation at least, a widespread movement towards regeneration and conservation of the rangelands in an endeavour to restore them to their pristine condition as perceived by rangeland scientists. Nevertheless, in my opinion, it is doubtful whether the rangelands could ever be returned to their so-called pristine condition, because it is impossible to determine the characteristics of the original condition. Agriculture Western Australia (AGWA) defines as pristine those small pockets of rangeland that exist where no water is available and where there are no grazing stock, feral animals, or native fauna to deplete the range. This working definition provides a guideline to determine the extent of change in the rangelands after pastoral use (Mitchell 1996). Nevertheless, the concept of the pristine landscape is a myth (Butzer 1992, Dovers 1994, Denevan 1992, Powell 1996 and Williams 1994). Everywhere on this planet there has been a continuous shaping and changing of a landscape previously changed by predecessors, no matter what their way of life. It is important to remember that the Aboriginal population used the land of the North West for thousands of years, changing it in their search for daily sustenance and spiritual rejuvenation. The Dreamtime could be seen as the creation of their perceived environment of which, whilst following the nomadic practice of daily survival, they considered themselves as caretakers (Berndt 1980). No doubt in good seasons, the waterless tracts were exploited also.

2.3 Definition of Squatters and Grassmen

It is important at this point to critically analyse the difference between squatters and pastoralists, or grassmen as they are labelled in this thesis. Squatters, in relation to rangeland usage, were never settlers of the North West river basins. A squatter, as the term suggests, squatted on public lands in the Eastern Colonies during the nineteenth century without paying the necessary rentals. This term cannot be applied to

the first settlers in the North West, despite some of them arriving from Victoria as, prior to settling the land and afterwards, all occupied land was leased from the State (Government Gazette 23 December 1862) The popularity of the word squatter was due to the romantic image it conveyed of tough men in a tough environment independently running a lucrative business without payment of rent (Dutton 1985). Squatting as such, however, never occurred in the North West, as payment of rent was standard procedure for pastoralists desiring to establish pastoral runs in the North West prior to actual settlement.

For millennia the pastoralist has been a herdsman, spreading livestock over rangelands for fattening on the native vegetation and continuing to do so in the modern era (Smith 1992). Skilful pastoralists were and are knowledgeable grassmen, a term devised by this writer to differentiate between them and those others who also use the rangelands to depasture stock. The grassmen have a unique feeling for the rangelands, and a knowledge of the perennial and annual grasses, which embraces their own perception of the carrying capacity of their leases, including the length of time stock may be depastured in any given area. Understanding the nature of the grasses and the climatic regime enables the grassmen to manage their leases effectively and generate a sustainable income without overstocking. They are well aware that a grassless lease and starving stock would put them out of business very quickly (Barndon 1996b). This theory is developed further in the thesis with reference to government control of stocking rates.

2.4 European Perception and Response to the Rangelands of the North West.

There was at the time of settlement and still is, as this thesis will portray, friction between government agencies and the grassmen, and the grassmen and the corporate leaseholders, over stocking rates, management, and development of pastoral leases in an arid environment, with all three affecting Aboriginal lifestyle. At settlement, government agencies planned an organised approach based upon British empirical thinking of the period, corporates saw the chance of lucrative returns for their investments, whilst the grassmen required the natural resources to make a day-to-day living, with hoped-for comfortable retirement in more congenial climes. The Aborigines held the land as the core of their cultural and aesthetic way of life. However, with the development of a spreading pastoral industry and rangeland management, Aborigines were forced to adapt to a new

way of life also, the phenomenal environment requiring a new cultural lifestyle as they participated in the development of pastoral leases. A major drought, however, was to affect all four groups involved in rangeland usage (Figure 2.1).

The grassmen, during the period of settlement and expansion from the late 1850s to the mid 1930s practised conservative rangeland methods, reluctantly at times within the guidelines of government requirements. Corporates seeking quick returns, however, mostly overstocked to the detriment of the rangelands. Most of the indigenous population during this period had been incorporated into station life, with others practising a quasi-traditional lifestyle in the unsettled areas of the basins. At the onset of the 1936-1946 Big Drought, both grassmen and Aborigines faced severe hardship as the rangeland resources deteriorated under its debilitating effect. Grassmen, watching their stock die, complained against the required stocking rates and the threat of lease-forfeiture, still in effect despite the drought and the resultant dwindling native grasses. The lifestyle of the Aborigines was also affected through the depleted flora and fauna.

The result after the ten-year drought and a Royal Commission (Fyfe 1940) was to see the government agencies and the corporates forced to adapt to the needs of the rangeland and accept the reality of climatic variability, which finally resulted in rangeland regeneration with Department of Agriculture Western Australia, later Agriculture Western Australia (AGWA), involvement. The following decades after the drought period were fraught with struggles, unfortunately at first mostly to provide services and increase population, thence to rangeland management to achieve adequate stocking rates on depleted rangeland resources, particularly in major areas such as the stock routes and river frontages, and within the government's guidelines. Corporates at the time were still buying, selling and overstocking depleted leases, seeking returns for their investments despite the depleted resources, whilst the unsympathetic government grumbled at the grassmen's complaints as they demanded an economic carrying capacity (ECC) sustainable to the rangelands. As rangeland management developed into an important issue, corporatism and government were forced to acknowledge that major changes were necessary for the pastoral industry to survive. For the Aborigines during this period, the patriarchal attitude of the government, and the subsequent dislocation and relocation in the river basins as wages and independence eventually became major issues, exacerbated the deterioration of their aesthetic, economic and cultural wellbeing.

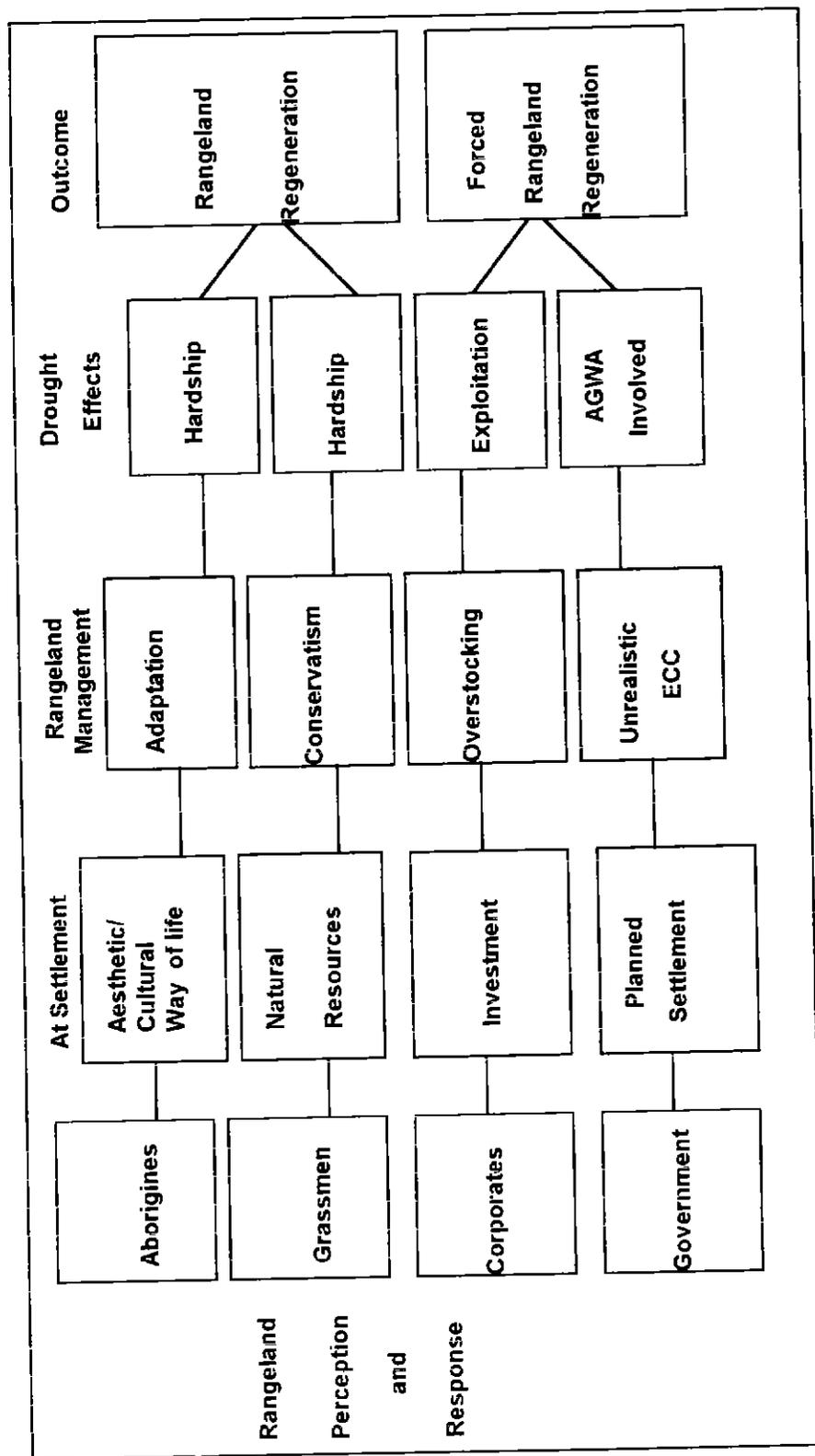


Figure 2.1 Rangeland perception at European settlement and the response after the major 1930s drought.

To investigate these developments and the perceptions held by the rangeland users, a variety of sources were researched and studied. The most important were found amongst the State Records Office of Western Australia (SROWA) files. These are Accession Number (AN) 541 files concerning the Big Drought that extended from the West Kimberley to Esperance. This thesis uses the information within these files to demonstrate that the rangelands were under extreme duress at this time, that the Pastoral Board's (PB), an auxiliary of the Department of Land & Surveys (DL&S), perception of rangeland usage was steeped in the 19th-century notion of intensification and that Minister for Lands Frank Wise was unsympathetic to the complaints of the grassmen, despite the abysmal state of the drought-affected rangelands. At that time it was a case of continuing the required stocking rates or facing lease-forfeiture!

2.5 Environmental Degradation of the Rangelands in Australia

It is only in the last few decades, however, that rangeland usage by pastoral activities has been challenged, not only in the North West river basins, but throughout Australia. As discussed above, due to debilitating droughts, devastating but beneficial floods, deliberate overstocking by speculative leaseholders and the unrealistic carrying capacity required by government agencies, areas of the North West rangelands have suffered, despite cautionary warnings of the experienced grassmen, and in latter years, rangeland scientists of AGWA. Consequently the rangelands have come under intensive scrutiny by concerned environmentalists, government agencies and grassmen. This same process applies across Australia, where European misuse and abuse of rangelands has become the target of those who question the very practice of stock grazing (Carter 1977, Heathcote 1983). Environmental degradation occurs either through circumstances beyond human control, as in the case of severe droughts or flooding, or through human manipulation. While manipulative humans certainly changed the environment of the Australian rangelands due to their aridity they were, however, frequently unable to modify them to their particular desire (Heathcote 1965).

Research has shown that, in the case of the pastoral industry of the North West, the exception being pastoral leases on the marginal lands after World War I, the manipulators included government agencies whose expectations were unrealistic, and large corporations seeking quick returns. The struggle by government agencies and corporatism to transform the land to the British ideal has not been forgotten in the modern

environment, particularly with regard to agricultural development in the semi-monsoonal regions of the Fitzroy basin. In the more modern era the attempts at agricultural and pastoral intensification along the Fitzroy River's frontage from the 1960s to the 1980s exemplify this influence. The leaseholders entered into the landscape changes with high hopes and State Government assistance. Their plans were failures, and the rangelands suffered the consequences, before undergoing rehabilitation at the hands of more recent occupiers with more realistic ideas of rangeland management (SROWA 1964, Cons 1764, Item3793/1964, Vols 1&2, Box 44, Bauer 1986).

2.6 Research Material Pertaining to Rangelands of the Eastern Colonies

Historical geographers whose work pertains to the Australian rangelands and their settlement include Roberts (1968), Heathcote (1965, 1983), Perry (1961, 1970), Powell (1970, 1988, 1996), Holmes (1981), and Meinig (1962). Further work of Heathcote's (1975) was revised and updated in 1994. These works, though of immense value, were concerned with the Eastern States and Territories, with no discussion on the North West rangelands, the river basins in particular, which differed in their process of settlement patterns and landscape change, though initial settlement patterns are somewhat similar. Climatic variability and aridity, however, are as much a feature of the above regions of study, and are of primary importance, as in the North West. Furthermore, the studies previously discussed were mostly written before rangeland management became a major issue, which my own work analyses and discusses concerning the six river basins of the North West. For the benefit of a comparison between settlement of the eastern colonies and the North West, the works of Meinig (South Australia), Heathcote (New South Wales), and Powell (Victoria) have been used

Meinig (1962) selected the South Australian wheat frontier of 1869 to 1884 as his base of study, stating that the agricultural frontier movement replacing pastoral enterprises of that colony was part of a world-wide trend of that period, when the developing technologies were often thought to be more powerful than the constraints of physical locale. Meinig used the Parliamentary Papers and Debates of South Australia, and country newspapers and farm journals to develop and explain his theory. He also discussed how this movement involved the replacement of nature's vegetation with new resources; how a new plan of organisation occurred on the land by the creation of new resources from that of nature, and how the accomplishment of this replacement required a new

network of routeways and established settlements, a process that was similar to the North West. Encouraged by the uncharacteristically good rains of the 1870s and the prevailing myth that rainfall follows the plough, the would-be wheat farmers pushed their frontier almost as far as Lake Torrens. By 1880, however, the realities of the phenomenal environment began to bite home, and the retreat of arable agriculture from the sub-marginal lands began. As Marshall (1977:237) points out:

With a hundred years of records and a lot more scientific expertise, we may regard this marginal expansion as unwise, but it is well to remember that in the nineteenth century the facts of Australian climate had to be learnt the hard way.

Heathcote (1965) examined the conflict between pastoralists and the environment, and the processes of land appraisal and settlement of the Warrego Plains in north-western New South Wales. His aim was to describe, and hopefully account for, the sequence of attitudes held by settlers and government regarding the plains, the knowledge and appraisal of rangeland condition in relation to land allocation, and the usage of the pastoral resources. Heathcote's sources were the ideas and opinions gleaned from personal interviews and memoirs of rangeland users and bureaucrats; newspapers of the period under study; government records; private papers; and field observation. His decision to study the plains was based upon his concern that, prior to his own work, too much emphasis had been placed upon the conflict between the pastoralist and the farmer, and the farmer and his environment, with no consideration given to the pastoralist and the conflict he experienced with the environment, mainly associated with the bureaucrats and the inadequacies of land appraisal. His aim was to describe, and hopefully account for, attitudes to, and knowledge, appraisal and use of, the pastoral resources of the Warrego Plains. His approach was to proceed from the general concepts of the semi-arid Warrego Plains to a more specific and detailed study of a portion of them.

The Warrego Plains land appraisal and settlement pattern were established upon the 19th century philosophy of agricultural settlement following pastoral pursuits on the frontier of pastoral lands. For this region large leaseholds as well as small grazing areas were allotted to leaseholders, with the idea that the smaller areas might later be developed as farms. Analogous with the pastoral settlement in the North West, pastoralists

had the problem of aridity affecting the fragile natural resources of the river frontages in both the large and small leases and, similar to the settlement of the North West river basins, the pastoral enterprises had spread along the river frontages, where rangeland deterioration soon became significant. It would be almost 40 years before technological advancement and artesian basin discoveries in the late 1870s enabled the spread of Warrego Plains pastoralism into the hinterland of the river valleys.

Furthermore, as in the North West, droughts took their toll on the fragile natural resources and exacerbated the conflict between the pastoralists and the environment. In addition an unsympathetic government and its land regulation requirements, and leases mostly held by absentee corporates, contributed to a situation similar to that which existed for many years in the North West. A major difference between the settlement of the Warrego Plains and that of the North West river basins, was that land regulations for the latter were devised prior to the settlers moving north. Pastoralists were already in the area of the Warrego Plains before land regulations were contrived. Heathcote's conclusion was that the Warrego Plains environment was not fully understood by the pastoralists, who noticed the variability of the rainfall, but failed to recognise the significance of that variability on the natural vegetation. Neither did officialdom appreciate this relationship.

Powell (1970) had a similar theoretical and methodological approach as Heathcote in his perception of the way in which the economic and physical environment of Western Victoria was affected by the discordant perceptions of official appraisal and popular judgment. The differing approaches resulted in a new cultural landscape in Western Victoria that was modified between 1834 and 1891 by individual and group action, individual bureaucrats, policy and theory. According to Powell, the philosophy of 19th-century thinking in Australia was steeped in the bureaucracy of controlled land alienation, with hoped-for yeoman farming, which affected the pastoralists' individualism, forcing them to adapt to and even subvert the land regulations, as well as cope with the environment. Also, in contrast to both the North West and Warrego Plains, much of Western Victoria, with a more temperate climate and superior soils, had real agricultural potential, and the days of extensive pastoralism there were numbered.

2.7 Methodology and Research Process to the North West River Basins

The six river basins of this thesis were selected, based upon my own perception and experience of having lived within the pastoral industry and participating in pastoral activities during the 1960s, albeit amongst what was then considered a specifically male environment, because of the differing perceptions of the rangelands held by the grassmen, government agencies, corporates and Aborigines. Furthermore, after completion of my Honours program and the study of other historical geographers concerning settlement of the rangelands, I felt that an analytical approach was needed to ascertain how such perceptions affected the rangeland resources and their users in the basins. Further enticements for research included the nature of the settlement process in the North West which differed from that in the eastern colonies, and the lack of published academic work pertaining to the rangeland usage in the North West river basins.

To give a clear and hopefully unbiased picture of the rangelands of the basins, six stations were selected in each basin, traversing from the mouths of the rivers and through to their headwaters. Other leases were visited in a cross-section when traversing south to north and vice-versa on the field trips. Aboriginal communities were selected in a similar manner. Settlements and mining communities in the basins were also subjected to study. To interpret the perception held by government agencies, pastoralists, corporations, the Aborigines, and later mining companies, towards the rangelands of North West, a variety of sources were researched. Interpretation can be incorrect due to a personal misperception of the material studied, but the condition of the rangelands and the history of the management of the pastoral leases provide a telling story in the historical geography of the settlement and rangeland usage in the North West river basins. For information regarding the perceived environment of the modern era in the river basins, taped interviews conducted with pastoralists and Aboriginal people were the most important.

2.7a) Research Material Related to Aridity and Climate

At the time of the first settlement in 1858, the colonial government and the experienced grassmen had some understanding of the new environment to be settled. The grassmen, however, had to experience and consequently adapt their stocking rates to the aridity of the North West climates and the fragility of the natural grasses, whilst the government and its agencies, in an endeavour to intensify pastoral operations, tended to

ignore the aridity and grass problems for many years, until droughts and rangeland abuse by the corporates and lackadaisical investors forced changes. The major problem associated with rangeland usage in the North West involves climate and vegetation, with droughts and floods playing a leading role, which is a dominant point of discussion and analysis in this thesis. To understand the variability of climate of the selected basins in the North West, detailed studies were available, and publications were selected, and interviews held with officials, from Western Australia's Water and Rivers Commission (1997) and The Bureau of Meteorology of Western Australia (1996, 1998, 1999), which provided the necessary climatic data, station rainfall observation and river flows for stations and settlements in the basins. The SROWA with its important AN files related to the DL&S and the pastoral industry were used to interpret how those involved dealt with aridity and climatic problems associated with droughts and floods.

2.7b). Exploration: Its Importance to the North West

The method by which the basins were explored prior to European settlement, and the reason why, are also important in the attempt to ascertain the perceptions of the rangelands held by the colonial government, explorers and the grassmen. Access to the basins via the coast or overland was fraught with difficulties (Grey 1841, Austin 1854, Gregory 1846-1858, 1862). From the explorers' reports, some idea of the nature of the rangelands prior to pastoral settlement can be ascertained as well as the thinking of the time and the motives for exploration. The earliest explorations in the North West were maritime, conducted along the coast by the Dutch, English, Portuguese, and French seafaring explorers. Their perception of the environment was of an inhospitable and arid country. The Dutch, English and Portuguese showed little desire to implement settlement plans, whilst it was not until the early nineteenth century that the French showed an interest in the south coast (Marchant 1982). It was only after the European settlement of the Swan River Colony that land explorations were conducted to the north. The reasons for the explorations and the manner in which they were conducted are indicative of the environment at that time. For example, Gregory's North West expedition in 1861, was conducted in the hope of finding suitable arable land to grow crops for Britain's cotton manufacturing industry which had been deprived of raw materials through the American Civil War (McLaren 1996). Gregory (1863:178) was to report that:

...a very considerable portion of the arable lands of the DeGrey and Sherlock (rivers) are precisely the soils adapted for the production of this valuable commodity

As it turned out, his perception of the land's potential was incorrect. Apart from the DeGrey Station's lucerne patch and vegetable garden plot on the bank of the DeGrey River, neither of these rivers was to support agriculture. From the outset, the grassmen chose to settle where there was a reliable water source and a relatively abundant supply of natural grasses to fatten stock.

2.7c) Rangeland Management

It is the climate, vegetation and water resources which determine the size of leases necessary to sustain a profitable industry within the basins. To ascertain the effects the above had on the rangelands in the six river basins, a variety of sources were drawn upon. Research was conducted into the SROWA records, Pastoral Lease Appraisal Plans (PLAPS) from Department of Land Administration (DOLA), station diaries from individual stations and AGWA reports. The SROWA files before and after the Big Drought were used to portray the growth, decline, and adjustment of lease development, amalgamation toward intensification, and management of pastoral leases in the river basins. All are most important to this thesis.

AGWA officers in the modern era traversed the Murchison, Gascoyne, Ashburton and Fortescue rangelands, noting the land systems, determining areas of degradation and issuing their recommendations for a more realistic ECC than that held by the PB. The reports of Beard (1975, 1976, 1979) also provided very important detailed land system mapping and explanatory notes on the rangelands of the Pilbara region which included the Fortescue and DeGrey basin, and Ajana region of the coastal Murchison basin. It was the AGWA officers, however, whose findings have been the most significant, detailing the types of vegetation in the Murchison, Gascoyne, Ashburton and Fortescue basins and their conditions, the degraded areas, plus the spread of the indicative plants, such as some *Chenopodiaceae* spp. and *Acacia* spp. which, through drought and overstocking, were replacing the more palatable plants and signifying poor range condition (Payne et al 1987, 1988, Curry et al 1994, Mitchell and Wilcox 1994, and Wilcox & McKinnon 1972). Guppy and others (1958) and Speck et al (1964) provide similar data regarding the Fitzroy River basin.

Of equal importance for the modern environment and rangeland condition AGWA published vast amounts of material concerning rangeland management (Burnside et al 1995, Barrett-Lennard and Malcolm 1995, Payne et al 1972, Payne et al 1988, Wilcox and McKinnon 1972) even though some grassmen did not agree with their recommendations (Barndon 1996b, Officer 1996b). Their material included lease development and covered stock management issues (Burnside 1988, Addison 1990, Fletcher 1995). It was quite a number of years, however, before their findings were to have an effect upon government policy, and even then such material tended to be ignored, as was the case with the failed agricultural development plans for the Fitzroy basin (Addison 1997).

Unfortunately for the dedicated rangeland historical geographer, many of the most valuable and early DL&S files were destroyed during a massive departmental overhaul in 1981, thus data had to be sought elsewhere to provide an historical background to the pastoral industry in the river basins. Further changes occurred when the PB underwent a major restructuring in 1998, with an official name change to the Pastoral Lands Board (PLB). At that time, the PLB was responsible for 558 leases involving 512 stations, of which 49 were held by Aborigines. The leases comprised 95 million hectares of the rangelands of Western Australia, with a vast amount of land being mistakenly classed as degenerated (Crow 1999).

To further facilitate an understanding of rangeland usage the PLAPS, and the AN files were studied to determine how the rangelands were used by the grassmen and corporate leaseholders during pastoral expansion and amalgamation of leases, as recommended by PB. The vast amount of information gives an insight into official perception of the environment. Records were also kept pertaining to the climatic conditions of drought and flood, and the effect these conditions had on the rangeland. The former DL&S, however, viewed the development of the rangelands, regardless of the variable climate, vegetation differences and topographical features, as occurring in a methodical and progressive manner, with the submission of five-year plans by the pastoralists, growing stock numbers, the construction of fencing and watering points for paddock development, rental appraisalment, rangeland inspection reports, and other improvements within the neat rectangles, with the subsequent introduction of specially-bred stock, all within the PB's unrealistic ECC for progressive stocking rates,

and to the disgust of the grassmen. Sales of leases were also recorded. Corporates on the other hand, required leases to fatten stock and provide a lucrative investment for their capital. Consequently their leases at times were overstocked beyond even the required ECC to meet the needs of investment, to the detriment of the rangelands, particularly when drought occurred. All shareholders of the small family companies and the big corporates were listed, which were of value in interpreting financial rewards expected for those holding shares in leases.

2.7d). Land Regulations and Land Acts

For a work such as this thesis, where the relationships between the perceived and behavioural environments are significant, the various Acts pertaining to land tenure and the leasing of Crown Land in the North West revealed some initial wisdom by the colonial government in the allocation of lease size for the North West basins (Government Gazette 23 December 1862). Nineteenth-century land laws, however, reflected a belief in white superiority over nature and the consequent expectation of the progressive intensification of the pastoral industry. The Land Acts and Regulations devised by the various governments of the Swan River Colony and later the State of Western Australia reflect the environmental thinking of the time. Most of them were formulated by men whose roots were established in Western Australia, including the pastoral industry, and who had strong familial connections with Britain, as well as amongst themselves in the colony. At least these men understood the need for large holdings to run a successful pastoral enterprise, though it was only after actual occupation that they understood just how large a holding they needed, compared to the more productive South West.

Nineteenth-century land regulations were usually a step or so behind the moving pastoralists in the eastern colonies (Heathcoate 1965). By contrast, the expansion of the pastoral industry in Western Australia had been fairly efficiently controlled since the administration of Governor John Hutt (1839-1846) who first introduced depasturing licences in 1842. In the South West after 1880, rough grazing was progressively replaced by crop-farming under the influence of a colonial government determined to feed its own population and hopefully export the surplus. Previously since 1849, pastoralists secured Crown grants on parcels of superior ground, and leased land adjacent to their farming enterprises, for which a depasturing fee was charged (various Land Statutes). Beginning in

1887 these lands were surveyed, appraised, and sold for crop farming or intensive pastoralism (Tyman 1976). This thesis will demonstrate how this process did not apply to the harsh and arid environment of the North West. On the other hand, in the modern era at least, Special Permits were granted to North West pastoralists seeking grazing lands outside their existing leases (Mills 1997b).

After Gregory's 1861 expedition, however, new land regulations for the North West were proclaimed in 1862 solely for the settling of the North District, as the area beyond the Murchison River was then titled. Pastoral leases, as determined by the colonial government, were mostly rectangular blocks ranging from 8094 hectares (20 000 acres) to 40 470 hectares (100 000 acres). Before the first regulations for the newly-created North West were fully completed grassmen such as Walter Padbury's nephew Nairn, the Withnells and Walcott were preparing to move north with their stock. Their eventual location in the North West was based upon Gregory's report, but although their knowledge of the country and its climate was negligible, their perception, experience and understanding of what was needed to conduct a successful pastoral enterprise in an arid environment was substantial. Leases grew, not through the grassmen's desire for larger holdings, but because they understood that the carrying capacity of the rectangular blocks devised by the fledgling PB were limited due to the fragility of the rangeland resources in the basins and variability of rainfall. Hence after settlement, the grassmen were lobbying for more lenient regulations and further land to run a viable industry while attempting to practise conservative stocking rates.

In 1917, in anticipation of closer settlement of the rangelands through pastoral lease intensification, and requiring land allocation for returned soldiers, legislative measures were devised to prevent monopolisation of the large leases by any one man or group. The Act caused a flurry of activity by the grassmen and corporates (Land Act Amendment Act 1917). The re-arranging of family companies quickly occurred, particularly in the Gascoyne and Fitzroy basins.

The AN files at SROWA are replete with details of improvements of individual stations and complaints from their operators. Leases expanded through the amalgamation of the developed rectangular blocks, mostly labelled paddocks, creating the modern, and at times peculiarly-shaped, station boundaries. Fencing and watering points

were constructed on the blocks, and not always in harmony with the PB's requirements of lease intensification and the ECC. Influenced by the natural landscape and the distribution of rangeland resources, boundary fencing at times defied not only topographical features but also the legal dimensions of the lease. Natural grasses could also differ from one area, or paddock, of the lease to another. Such rectangles at the onset of settlement, however, were drawn first on paper and later surveyed by officers of the early DL&S. The ribbon-shaped leases of the Fitzroy basin were devised with the intention of irrigated agriculture on the river frontage. Mining and settlement locations within the basins were later added.

2.7e) Research into the Pre-European Australians

No thesis of this type would be complete without a study of the Aborigines, their cultural and aesthetic lifestyle and the effect these had in the river basins, from pre-settlement years to the important role which Aborigines played with the developing leases. European intrusion resulted in the loss of their previous lifestyle as it affected the native flora and fauna, their ephemeral boundaries, their traditional practices, and their subsequent adaptation to station life. For a perception of the impact which the indigenous population had on the landscape, research material was sought through the Aboriginal Affairs Department, anthropological and archaeological works from the Western Australian Museum. Field trips and taped interviews were conducted, oral histories, biographies and autobiographies were sought. Information on the landscape before pastoral occupation was scanty, with reliance placed upon archaeological evidence, Aboriginal Dreamtime stories, and explorers' reports. Available information was limited, however, with the most extensive material relating to the Pilbara (Palmer & McKenna 1978, McCleod 1984, Wilson 1989, McPhee & Konigsberg 1995) and the West Kimberley regions (Marshall 1988, Kolig 1987, Hawke & Gallagher 1989). Jacobs (1990) provided valuable insights into the official attitudes toward and treatment of Aboriginal people during vicissitudes of the pastoral industry in the 1920s and 1930s.

2.8 Availability of National, State and Local Research Relating to the Rangelands in the River Basins

The development of technology and services is also significant to the thesis, as these areas provided the necessary infrastructure for the developing leases, and a means for marketing stock and the receiving of goods. There is little academic work on

these themes and their importance to rangeland usage since European settlement in the six river basins in the North West. Thus LePage's (1986) history of the Public Works Department was of paramount importance to the background of the development of important services in the North West.

Some Western Australian academic and historical works are available and are of importance for historical background to the settlement of the river basins and rangeland usage, including Bolton (1958), Durack (1967), Kerr et al (1962) and Kerr (1975). Unfortunately they mostly deal with the Kimberley region, with Clement (1991) providing a more recent academic study, though confined to the West Kimberley. Forrest's (1996) historical work on the early settlement of the North West was useful. Of significance to settlement of the river basins, Bain's account (1975) of the settlement of the Victoria District is important, as the region was a stepping-stone for movement of settlers into the Murchison basin. The Webbs with their historical reference work of the Ashburton region (1983) provided important background material to that basin, whilst Keeffe (1994) also provided valuable material on the goldrushes of the Murchison and the resulting industries including pastoralism. More intensive studies of the North West of the state however, have still to be researched, particularly in relation to all the river basins and the rangelands, and an historical geography of the rangelands of the Eastern and North-Eastern Goldfields has yet to be written.

In a discussion of rangeland management and related issues with reference to Australia as a whole, studies were, unfortunately, mostly regional and pertaining to the eastern and central parts of the Australian continent, thus contained little information relevant to the rangelands of Western Australia, and the six river basins in particular. These important studies include the Australian and New Zealand Environment & Conservation Council and the Agriculture & Resource Management Council of Australia & New Zealand (ANZECC & ARMCANZ, 1996), the Commonwealth Department of Environment, Sport and Territories (Smith & Milligan, 1994) and the Lands Departments of the other states and territories that provide data mostly pertaining to rangeland regeneration in their regions. In addition, the Environmental Protection Agency (1998) has recently conducted research into rivers, national parks, and the biological diversity of arid and semi-arid Australia, with little information regarding the rivers which are the subject of this thesis

With reference to the condition of the six rivers in the basins, apart from AGWA's reports, Seddon's (1998) submission to the Snowy Water Inquiry on the ecological state of the Snowy River in the Monaro region, which was first settled by pastoralists, is of significance as a comparison with the state of the North West rivers, particularly to the effects of mining on the Fortescue river's headwaters. Powell (1998) is significant also, though mostly confined to the water resources of the South West region of the large state of Western Australia, with a small portion relating to droughts across the State. Water and Rivers Commission (December 1997) compiled an anthology on the state of the northern rivers, using material already documented by AGWA and Beard discussed above, so was of little importance except, perhaps, to the community at large. The state of the nation's rivers is a worthwhile study which was endorsed by the Federal Government. This included Hill's (1997) important work which resulted in allocation of funding under the National Rivercare Program in the Commonwealth Budget 1998-1999. Unfortunately most of the funding was appropriated for the river health and water quality of the Murray-Darling Basin. The North West rivers have to take care of themselves!

Local histories, however, with some relating to regions within the river basins, are plentiful (McDonald 1991, Hardie 1988, Heydon 1990, 1991, Edwards 1991, 1993, 1994). These accounts, mostly compiled by local people, provide interesting and important background information to events and rangeland work on the small scale. Interpretation can be difficult, due mostly to the writers' emphasis upon the hardships and diligence of the pioneers rather than their neglect of the rangeland's resources, though the development of individual leases is well documented. Rangeland change is mostly perceived as the transformation of a harsh area into a civilised cultural landscape. As Hardie (1988:xi) writes:

. Those stout hearted men and their faithful wives.....
(T)hey set for the succeeding generations high standards of courage
strength of character and sheer determination in their efforts to
tame and wrest a living from a demanding land

Despite their tendency to portray a romantic image, these works are valuable, and their historical accuracy can be verified from other sources such as the above-mentioned ANs, and where available, primary sources from individual stations.

Biographies are of importance, although they also tend to portray a romantic and glamorised version of life in the outback. Some, however, are more comprehensive and accurate than others. Lee-Steere (1996) for example, gives credit to the Aboriginal people for their contribution to the development of the Lee-Steere leases, particularly Belele in the Murchison. Of equal importance, he discusses the problem of rangeland degeneration and the subsequent regeneration activities, based upon his experiences with the ten-year Big Drought and visits to the dustbowl of the American Mid West during the same decade. He was later appointed Chairman of the State Committee on Soil Conservation, whose activities unfortunately were largely related to the South West.

Bain (1990) records the struggle and hardship of developing the Woodlands lease in the Gascoyne after World War I, with minimal help. All Aborigines were by then settled on the surrounding leases. It was impossible to employ them. Bain (1990:87) writes:

...When I went to the country first I had no chance of obtaining a blackfellow. It was a sort of unwritten law that you must not employ another man's natives,..... Many a time in the early days a man and his woman would arrive at my camp. Actually they were out on 'Pink eye' and would run short of tucker and turn up looking for some. I would grab the opportunity of getting a few days' work out of them. As soon as the owner heard about it he would hot-foot it down to collect HIS natives

Bain's statement is important, for it depicts the difficulty of establishing a pastoral enterprise without access to cheap Aboriginal labour. It also reflects the patriarchal attitude towards the Aboriginal people that was prevalent on the developed leases in the river basins.

Diaries describe the daily activities carried out in exploration and the taking up of new leases. Nairn (1928) though very brief, provides a telling description of travelling through new country with a flock of sheep to the DeGrey River, the subsequent start at developing a lease, the displacement of the Aborigines and the modification of the landscape. Roberts (SROWA 1868, ACC 3303A, MN 1068) recorded his adventurous

trek north from the South West to the DeGrey, following Hooley's (Sharp 1985) epic droving tracks as far as Roebourne, thence Nairn's to DeGrey, to retrieve Padbury's stock after the death of Nairn. Roberts discussed his meetings with the new settlers who were establishing leases in areas he passed through. Unfortunately such records are far from plentiful.

The SROWA also holds early government letter books, Colonial Secretary's records, Public Works Department (PWD), and an abundance of other material including a limited amount of station primary sources that are worthy of study, and portray among their pages lease and coastal development processes and governmental concerns. Battye Library holds the explorers' reports, newspaper archives, and much of the early government records on microfiche, which also depict the processes of British imperialism in a developing colony and state.

Other worthwhile material available, albeit somewhat limited, was found in the station primary sources, particularly the diaries with, at times, regular entries regarding station work, and the work books, which recorded the changes occurring on the landscape as the leases were developed. Also recorded at times were the names of individual Aborigines and Europeans who worked on the leases. In some cases, wage books list income and expenditure of Aborigines and their scaled wages, as well as those of the non-indigenous staff. Notable primary sources included those from the Rubin group of stations in the Pilbara and Murchison, from Woolgorong and Wooleen in the Murchison, and Brick House in the Gascoyne. Various other early primary sources were discovered on individual stations during the field trips. Although the majority of the leaseholders had records from the 1960s on, much earlier material was lost during the 1960s and 1970s when the stations changed hands. At least one collection was destroyed in a homestead fire in the 1970s (Barndon 1996a). These records, in conjunction with the AN files, provide the basis of the discussions of pastoral development, expansion and contraction, and rangeland usage, in the river basins throughout the thesis.

Popular journals, newspaper articles, magazines, shire directories, tourism and station-stay brochures all have something to contribute to the thesis, if only providing brief information on local historical places of interest. The best journal in this category is the *Journal of the Royal Western Australian Historical Society*.

Unless otherwise acknowledged, all photographs depicted in this thesis were taken by myself whilst on various trips to the North West.

2.7 Conclusion

A large quantity of material has been drawn upon to determine patterns and processes of settling the North West, and to further interpret the perceptions held by the grassmen, speculating corporates, government agencies, miners and others concerning landscape change, and the state of the phenomenal environment as a result of landscape change. Correct interpretation may be uncertain due to a personal perception of the material studied, but the condition of the modern rangelands traversed, and the history of pastoral leases, provide a telling story of past and present usage. The research covers a new area, differing in some respect to the historical geographies of the eastern colonies, such as Heathcote, Powell and Meinig, which were mostly concerned with land appraisal. This thesis is an historical geography of the rangelands of six river basins, their climate and resources, and the effects of the settlement of a pastoral industry on the rangelands, and the results of a severe drought, rather than land appraisal, though the latter is to some extent of importance. For this thesis though, covering a new idea, even the maps had to be hand-drawn as no suitable land system maps had, at the time of writing, been devised for the individual river basins. This thesis is indebted to, and hopefully, in its own small way, a continuation of the seminal works of Heathcote, Powell and Meinig.

Chapter Three

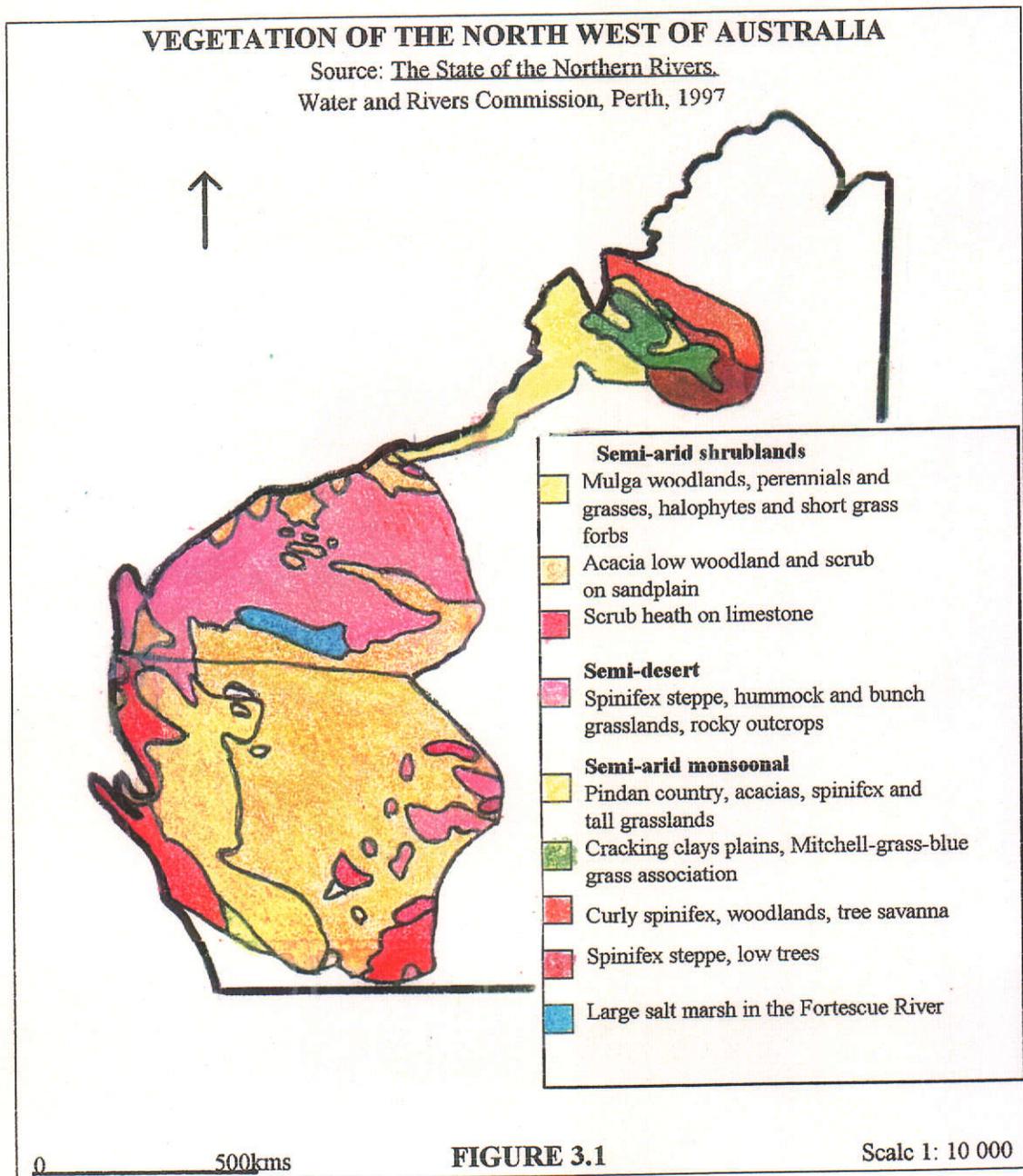
The Pre-European Landscape and its Occupants

3.1 Introduction

Central to this thesis are the rangeland resources and climates of the semi-arid shrublands, the semi-desert/sub-humid steppes and the semi-arid monsoonal grasslands of the North West, which occupy one-third of Western Australia. They cover some 600 000 square kilometres that stretch north from the subhumid temperate zone of the agricultural region in the south to the humid tropical region of the North Kimberley (Mitchell and Wilcox 1988). Use of the rangelands and adaptation to the arid climate by the Aboriginal inhabitants and the later European settlers demonstrates vast differences in perception and technological ideas of both groups of users.

The North West pastoral region comprises three distinct subregions all with, for the greater part, inferior soils, the characteristics of which are an important contributor to the lack of agriculture in the basins under study (Figure 3.1) (Addison 1997). Within each subregion is a mosaic of differing vegetation components (Water and Rivers Commission 1997). The semi-arid shrublands, situated in an area characterised by dry summers and unreliable winter rains are bounded on their southeastern border by the Great Victoria and Gibson Deserts. The northeastern boundary lies along the Fortescue basin. In the southern section, which includes the Murchison, Gascoyne and Upper Ashburton basins, are mulga woodlands on outwash plains, sandy banks and groves which cover some 39% of the semi-arid shrublands. Important forage plants include the halophytes saltbush and bluebush, short-grass forbs and other salt-resistant plants that grow on the loam and clay soils, and the sandy banks and sandplains which are favoured by the wanderer species. The predominant mulga landscape stretches north from the Murchison basin to the DeGrey basin (Mitchell and Wilcox 1994). Also important are the rangelands further north, from the semi-desert/sub-humid steppes of the Fortescue, DeGrey and Lower Ashburton basins with their differing, but equally arid climatic regime. The Great Sandy Desert is on their eastern border. Vegetation includes the triodia (spinifex) associations of the shrub steppes, with hummock and bunch grasslands interrupted by the rocky outcrops and rugged ranges within the Pilbara region. Other grasses include eragrostis and neverfail. The spinifex-covered rangelands reach from the DeGrey basin southwards to the easternmost portion of both the Gascoyne and Murchison basins (Water and Rivers Commission 1997). Further north again the semi-arid monsoonal

climate of the Fitzroy basin supports spinifex-covered savannas and acacia-strewn pindan on deep red sands. The fragile vegetation on cracking clays of the Fitzroy floodplains include the important Mitchell grass, ribbon-grass association. The



southern border of the basin is bounded by pindan country and the Great Sandy Desert. To the north above the forbidding King Leopold Ranges is the Kimberley Plateau, and to the east the Durack Ranges, base of the Fitzroy River's headwaters. Similar to the other basins, the Fitzroy basin also experiences a variable climate (Petheram and Kok 1991, Speck et al 1964).

3.2 Vegetation of the Murchison, Gascoyne, Ashburton, Fortescue, Degrey/Oakover and Fitzroy River Basins

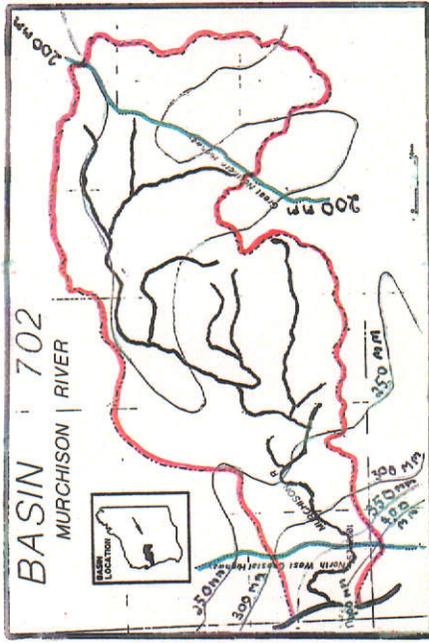
The Murchison River rises on Peak Hill near Mount Hale in the southeastern Robinson Ranges and travels 550 kilometres before reaching the Indian Ocean, where the estuarine mouth is blocked by reefs (Water and Rivers Commission 1997). The ranges are also the headwaters for the Gascoyne River. The basin (Figure 3.2) occupies 91 412 square kilometres and is the third-largest basin under study (Lerch 1999). The southern boundary borders the fringe of the wheat belt of the South West, the northern fringe is along the divide before the Gascoyne basin, and in the east lie the pastoral lands of the North Eastern Goldfields. The region is dominated, except in the south west of the basin, by a granite-greenstone terrain with hill ranges separated by a wide flat plain. The soils are mainly shallow, sandy and infertile with lower areas underlain by a red-brown hardpan and huge areas of wash plains and mulga groves. Vegetation is predominantly the *Acacia aneura* (mulga) shrublands with a diverse and varied perennial and annual cover such as the *Eremophilla* spp., *Grevillea* spp. and *Hakea* spp. Perennial grasses include the valuable *Eragrostis* spp., *Eriachne* spp., *Ptilotus* spp. and the *Monochather* spp. (Plate 3.1). Of the upper storey *Acacia* spp., *Eucalyptus* spp. and *Melaleuca* spp. line the watercourses. There are about 830 recorded species of plants throughout the basin (Curry et al 1994).



Plate 3.1: Mulga lands of the central Murchison basin. Woolgorong Station
9th September 1996

VEGETATION OF THE MURCHISON RIVER DRAINAGE BASIN

Sources: Basin 702, Murchison River, Water and Rivers Commission, Government of Western Australia, Perth, 1996, The State of the Northern Rivers, Water and Rivers Commission, Government of Western Australia, 1997, Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P., Blood, D.A., Technical Bulletin No. 84, An Inventory and Condition Survey of the Murchison River Catchment and Surrounds, Western Australia, Department of Agriculture, Western Australia, 1994, Beard, J.S., The Vegetation Survey of the Ajana Area, Western Australia, Vegetation Survey of Western Australia, Map and Explanatory Memoir 1: 250 000 Series, Vegmap Publications, Perth, 1976.



LEGEND:
Rivers and tributaries

- Low woodlands of *Eucalyptus taxophleba* (York gum) and scrub heath of mixed wattles mainly *Acacia ramulosa*, (bowgada) *A. granbyi* (mimiritchie) and scattered mulga.
- Heath shrubland with scattered tall shrubs including mixed *Acacia* spp., scattered *Eucalyptus* spp., *Banksia* spp. and *Grevillea* spp.
- Scrub. Dense shrub formation generally on shallow sandy soils. Wattle scrub with teatree comprising *Melaleuca* spp. in thickets, *Acacia* spp., *Casuarina* spp., *Hakea* spp. and mallee-form *Eucalyptus* spp.
- Low woodland. Wash plains, sandy banks on hardpan, alluvial plains and other plains. Mulga shrublands *Acacia* spp. Varieties of shrubs comprise *Eremophilla* spp., *Grevillea* spp. and *Hakea* spp. Perennial grasses include the valuable *Eragrostis* spp., *Eriachne* spp. and *Monochather* spp.
- Tall shrublands and scrub. Sparse scrub. Gently undulating red sandplains on laterite and granite comprising mixed vegetation of *Acacia* spp. over storey, including *A. xiphophylla* (snakewood), mulga and chenopod pastures.

- Shrubland. Rough hills of granite and greenstone. Low *Acacia* spp. including *A. citriniviridis* and *A. aneura*. Perennials include the *Eremophilla* spp., *Cassia* spp with varieties of the *Ptilotus* spp. Perennial grasses *Eriachne* spp., (swamp grass/wanderrrie) *Eragrostis* spp. (Murchison red/wanderrrie) and *Monochatter* spp. (wanderrrie) and other varieties
- Sandplain with occasional linear dunes. *Triodia* spp. (hard spinifex), scattered shrubs and low trees of *Eucalyptus* spp., *Acacia* spp. and in the extreme southeast corne, some *Mallee* spp.
- Sand dunes, outcrops and breakaways, pebbly pastures and other plains. Scattered woodlands of *Acacia* spp. including mulga. Mid storey of the indicative *Eremophilla* spp. Chenopod pastures with halophytic inclusions of various density of *Atriplex* spp. (saltbush), *Maireana* spp. (bluebush) and *Halosarcia* spp. (samphire) shrublands

0 150kms

FIGURE 3.2

The western end of the basin comprises horizontally bedded sandstone and coastal limestone hills six kilometres wide (Plate 3.2). The Murchison River cuts through the sandstone in impressive gorges before widening to traverse the final stage to the river mouth. Vegetation on the limestone and coastal portion of the basin comprises mostly low woodlands and scrub heath of mixed *Acacia* spp. scattered *Eucalyptus* spp. *Banksia* spp. and the *Grevillea* spp. (Beard 1976). There are many varieties of the *Proteaceae* family also recorded for this coastal region (Bellairs 1996).



Plate 3.2: Coastal limestone hills near the Murchison River mouth. Murchison House Station, 25th June 1996

The Gascoyne River rises in the Robinson Ranges a few kilometres north of Peak Hill and is 760 kilometres in length. A major tributary, the Lyons, rises in the mostly inaccessible Bangemall Hills on the northern boundary of the basin. The rivers traverse a landscape of mostly sparse vegetation and mulga (*Acacia aneura*) (Wilcox and McKinnon 1972), and drain a large 75 994 square-kilometre region (Figure 3.3) (Lerch 1999). The majority of the Gascoyne basin comprises the low woodlands of the drainage plains, the vegetation consisting of mulga and other *Acacia* spp. including the *A. grasbyi* (minniritchie). Varieties of *Eucalyptus* spp., including the *E. camaldulensis* (River red gum) and *E. coolibah* are found along the major drainage lines. Important perennials include the *Atriplex* spp. on the river floodplains. Other chenopod species are scattered throughout. *Eriachne* spp. and the *Eragrostis* spp. are

VEGETATION OF THE GASCOYNE RIVER DRAINAGE BASIN

Sources: Basin 704, Gascoyne River, Water and Rivers Commission, Government of Western Australia, Perth, 1996, The State of the Northern Rivers, Water and Rivers Commission, Government of Western Australia, 1997, Wilcox, DG, McKinnon, EA, A Report on the Condition of the Gascoyne Catchment, Department of Agriculture, Western Australia, Department of Lands and Surveys, Western Australia, 1972



LEGEND:

River and tributaries

-  Low woodland. Drainage plains, strew covered or bare plains, sandy banks. Vegetation comprised *Acacia aneura* (mulga)
-  Low trees, low woodlands of mulga plus other *Acacia* spp., other low trees such as *Agonis flexuosa* (peppermint) as an oversortrey to *Eremophila* spp., *Cassia* spp., and *Corchorus*.
-  Low shrubland. Tributary drainage plains. Open low scrub supporting *Acacia* spp., *Eremophila* spp., *Rhogadja*, *Solanum* spp. and *Cassia* spp.
-  Tall shrubland. Sand dunes with clay pans, duplex soils. Shrubs comprise *Acacia* spp., *Melaleuca* spp. and other scrub with halophytic inclusions
-  Tall shrubland. Partly inaccessible granitic hills, gneissic outcrops and basaltic domes. Sparse scrub of mostly *Acacia* spp and *Grevilleas*. Short grass-forb pastures with minor halophyte plains below breakaways and in drainages. Perennials *Eremophila* spp., *Solanum* spp., *Rhogadja* and *Ptilotus* spp.
-  Spinifex grassland, sparse vegetation. Sandplain with minor dunes. *Acacia* spp. including *A. aneura*, and *A. linophylla*. Perennials such as the *Eremophila* spp., *Triodia pungens* and *Plectrarchne* spp are dominant

 Succulent steppe. *Atriplex* spp., *Maireana* spp., on plains of alkaline soils with a lightly wooded overstorey of *Acacia* spp., *Melaleuca* spp. and *Casuarina* spp.

 Succulent steppe. *Atriplex* spp., *Maireana* spp. on plains of alkaline soils with a thickly wooded overstorey of *Acacia* spp., *Melaleuca* spp., and *Casuarina* spp.

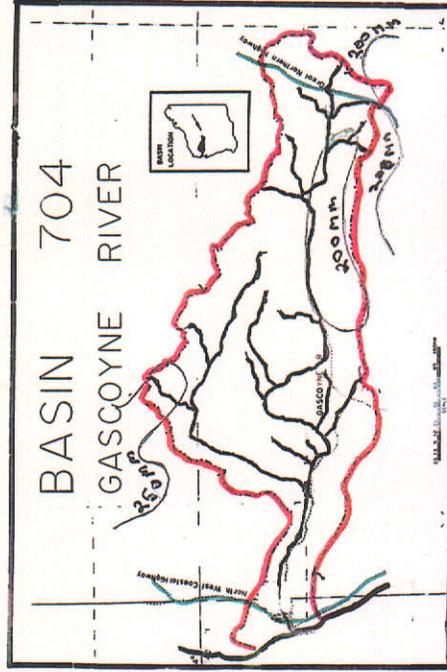


FIGURE 3.3

found on the sandy banks and saline and non-saline alluvial plains, and on the stony short grass-forb and minor chenopod pastures of the undulating stony uplands (Plate 3.3). Rich alkaline soils of the succulent steppe near the river's mouth support a variety of *Atriplex* spp. (saltbush) and *Maireana* spp. (bluebush) with a lightly wooded



Plate 3.3: Undulating stony uplands of the central Gascoyne Basin. Dalgety Downs Station
22nd of July 1996.

overstorey comprising *Acacia*, *Melaleuca*, and *Casuarina* spp. Scattered throughout the basin are the Pre-Cambrian hills, the most notable the Kennedy Ranges, and the breakaways and plains on granite and gneiss. Tall shrublands exist between the Lyons and the Gascoyne in the west central portion of the basin, with partly inaccessible granitic hills and gneiss outcrops including the monocline Mount Augustus. Pastures consist of sparse scrub of mostly *Acacia* and *Grevillea* spp. Short grass-forb pastures with minor halophyte plains exist below the breakaways. Important perennials include the *Eremophilla* spp., *Rhogadia* spp., *Solanum* spp., and the abundant varieties of the *Ptilotus* spp. Some sand dunes and claypans are scattered through the mulga country where soils are duplex, and vegetation comprising *Acacia* spp. and *Melaleuca* spp. with halophytic inclusions. A small portion of spinifex grassland is in the extreme eastern portion of the basin (Wilcox and McKinnon 1972).

The Ashburton River rises east of the present day Mundiwindi Station in stony country, running on a westerly course to the Indian Ocean, and is some 600 kilometres in length (Lerch 1999) draining the second-largest area in the river basins (Figure 3.4). The river's catchment is variously estimated at 93 600 square kilometres (Payne et al 1988), and 75 878 square kilometres (Lerch 1999). The Ashburton Valley is 65 kilometres wide and bordered by the southern side of the Hamersley Range, and by an inhospitable 55-kilometre wide belt of broken Bangemall Hills country on the south, which separates the valley from the Gascoyne basin (Beard 1975). The headwaters rise in the Hamersley Ranges near Mount Bruce (Plate 3.4) and in the

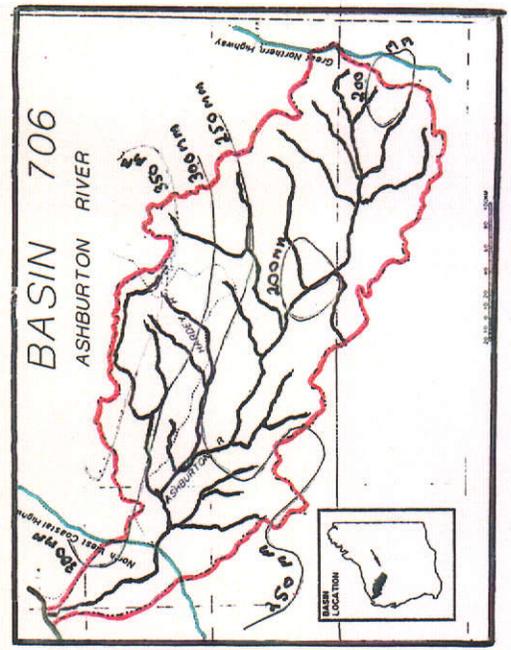
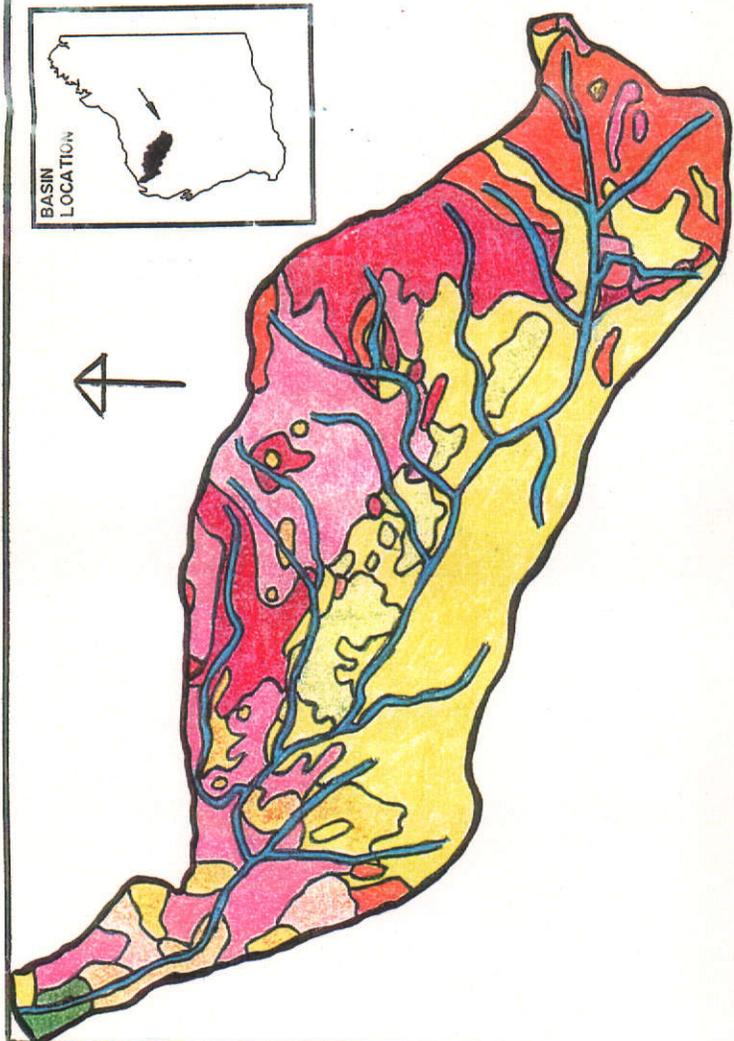


Plate 3.4: Mount Bruce region Hamersley Ranges. 22nd of August 1996.

eastern hilly mulga country is close to the headwaters of the Gascoyne River. Vegetation of the cracking clay plains in the coastal portion of the basin is dominated by *Astrelba* spp. (Mitchell grass). The southern central portion of the valley incorporates undulating limestone plains and cracking clay plains, calcareous loams over clay and calcareous soils. Within this region vegetation comprises small areas of Mitchell grass (*Astrelba* spp.) along the drainage lines, with the bulk of the landscape comprising *Acacia* spp. including the mulga, minniritchie and the kanji bush (*A. inaequilatera*). There are areas of open low scrub that incorporate the forbs and annual grasses, *Eremophilla* spp. and *Cassia* spp. with scattered tall shrubs of mostly

VEGETATION OF THE ASHBURTON RIVER DRAINAGE BASIN

Sources: Basin 706, Ashburton River, Water and Rivers Commission, Government of Western Australia, Perth, 1996, The State of the Northern Rivers, Water and Rivers Commission, Government of Western Australia, 1997, Payne, AL, Mitchell, AA, and Holman, WF, Technical Bulletin No. 62, An Inventory and Condition Survey of Rangelands in the Ashburton River Catchment, Western Australia, Department of Agriculture, Western Australia, 1988.



LEGEND:

-  River and tributaries. *Cenchrus ciliaris* (buffel grass) on levee zones and banks
-  Low woodland. *Acacia* spp., including *A. xiphophylla* (snakewood), sparse halophytic inclusions.
-  Low and Tall woodland. Mulga with short grass-forb association on stony plains, hardpan plains, some calcareous plains. Mulga creeklines, dense tall mulga shrubs with numerous low shrubs, forbs and annual grasses
-  Low shrubland. Open low scrub of forbs and annual grasses. Scattered overstorey of tall shrubs, mostly of *Acacia* spp.
-  Mitchell grass plains on cracking clays, sparse shrubs and low trees
-  Mosaic units. Sandy soils and sand loams. Wattle scrub and *Triodia* spp. (hard spinifex)
-  Scrub. Calcareous loams over clay and calcareous clay. Shrubs *Acacia* spp. including *A. grasbyi* (miniritchie) and *A. inaequilatera* (kanji bush), teatree, scrub
-  Sparse scrub steppe. Hummock scrubland, sand plains and plains, sparse shrubs and infrequent low trees, *Triodia basedowii*, *T. wiseana* and *T. lanigera* (hard spinifex)
-  Spinifex grassland. Hummock grassland scattered shrubs *Triodia basedowii*, *T. wiseana* and *T. lanigera* (hard spinifex)
-  Succulent steppe. Gently undulating limestone plains, alluvial plains, alkaline loams, clays and duplex soils. *Atriplex* spp., (saltbush), *Maireana polypterygia* and *M. pyramidata* (bluebush), *Aristida conorta* (wind grass), thickly wooded.
-  Succulent steppe. Stony chenopod pastures, saline soils and clay, sparse halophytic inclusions. *Atriplex* spp. (saltbush), lightly wooded

0 150kms

FIGURE 3.4

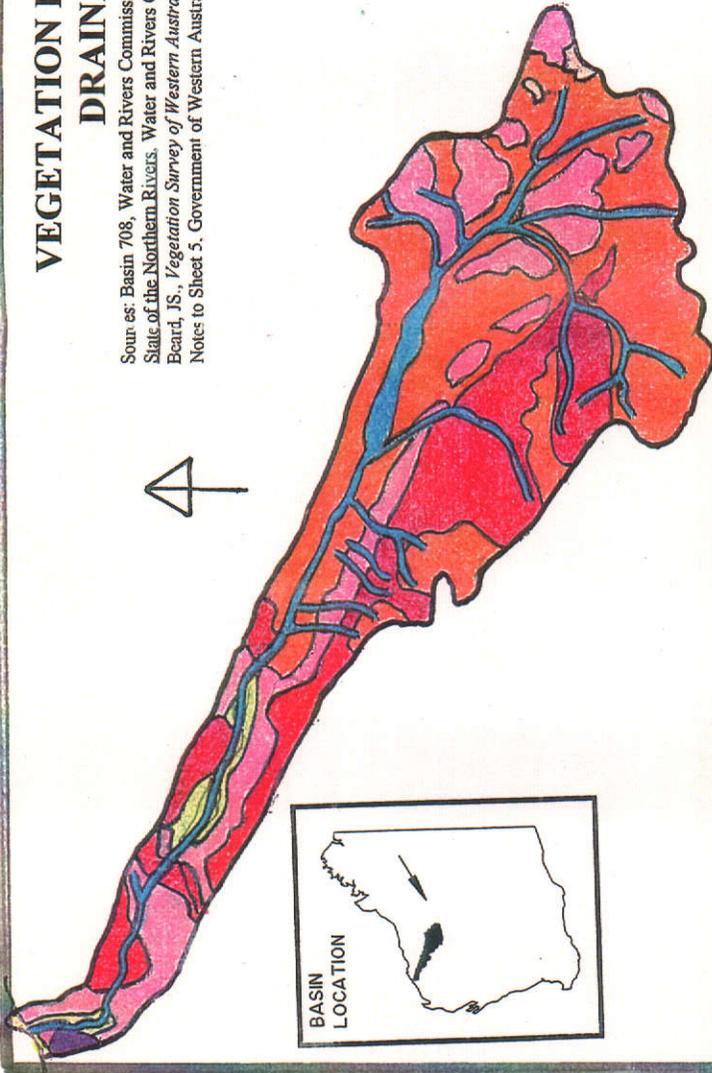
the *Acacia* spp. on the north side of the river. Spinifex pastures with scattered shrubs dominate the northern region bordering the Hamersley Range. The pastures are surrounded by succulent steppes of gently undulating limestone and alluvial plains, with a vegetation of the *Atriplex* (saltbush) spp. and *Maireana* (bluebush) spp. and an overstorey either thickly or lightly wooded. Other small mosaic units exist within and around these major vegetation zones (Payne et al 1988).

The Fortescue River rises in a wide arc incorporating several streams commencing in the Ophthalmia Range near Mount Newman west of the modern Balfour Downs and north near Noreena Downs Stations. The Ophthalmia Range streams flow northeast to Ethel Creek Station, then turn northwest near the Hamersley Range to link with the other streams before running westwards to the Indian Ocean. The river is some 550 kilometres in length (Beard 1975) and drains a 49 883-square kilometre basin (Lerch 1999), which includes a large salt marsh over 100 kilometres long and up to 16 kilometres wide (Figure 3.5). The marsh differs from the usual playa lakes that are dotted over the North West landscape in that it is well vegetated with numerous chenopodiaceous plants and is devoid of salt crystals. The various streams of the headwaters of the river can lose themselves in the marsh. Beard considers that the Fortescue tributaries continued to flow northeastward to join the headwaters of the Davis and Oakover Rivers in the Pilbara in an ancient era. The active streams from the Hamersley Range link in below the marsh and join the flow from Millstream Springs creating a permanent river flow in the lower reaches of the river, which at this point is thickly lined with *Melaleuca* spp. and the *Livistonia alfredii* (Plate 3.5) (Beard 1975).

The Fortescue Valley is bordered by the Chichester Range in the north and by the steep escarpment of the Hamersley Range in the south. Vegetation of the drainage basin comprises shrub steppes on basalt in the lower course of the river below the salt marsh, and on sandy patches and sandplains on the upper reaches, with some shrub steppes on basalt in the north east of the upper course. Vegetation is predominantly mulga and other *Acacia* spp. in the low woodlands with grasses mainly of the *Triodia* spp. The tree and shrub steppe comprise a mixture of irregularly-scattered, heavily-barked species such as the corkwood (*Hakea suberea*), sheoaks such as the *Casuarina decaisneana* and snappy gum (*Eucalyptus brevifolia*) with grasses comprising the various spinifex species of the *Triodia* and *Plectrachne* genres. Small areas of grass savannas occur, with a mosaic mixture of bunch grass, including those of the *Eragrostis* spp. such as Murchison red grass, wire wanderrie,

VEGETATION FORTESCUE RIVER DRAINAGE BASIN

Source: Basin 708, Water and Rivers Commission, Government of Western Australia, Perth, 1996. The State of the Northern Rivers, Water and Rivers Commission, Government of Western Australia, 1997. Beard, JS., *Vegetation Survey of Western Australia*, Pilbara, 1: 100 000, Vegetation Series, Explanatory Notes to Sheet 5, Government of Western Australia, 1975.



LEGEND:

-  River and tributaries. Fortescue River; small dense oasis of *Melaleuca* spp. (cadjeput) and *Livistona alfredii* (Millstream Palm)
-  Salt marsh. Fortescue River. Vegetation chenopods
-  Low woodland, mulga country, *Acacia aneura*, less than ten metres tall either irregularly distributed, regularly distributed, or sparse
-  Tree steppe; hummock grassland; irregularly scattered trees and shrub. *Triodia* spp. (spinifex) and *Plectrache* spp. (oat-eared spinifex). Trees *Casuarina* spp., *Eucalyptus brevifolia* (snappy gum) and other *Eucalyptus* spp.
-  Shrub steppe; hummock grasslands, scattered shrubs. *Triodia wiseana*, *T. basedowii*, and *T. pungens*
-  Sparse shrub steppe; hummock grassland, sparse vegetation of irregularly scattered dwarf shrubs less than a metre tall including *Acacia pyrifolia*
-  Mosaic units; mixture of bunch grass and spinifex. Within the mosaic units patches of mulga and grass savannas mixed with spinifex

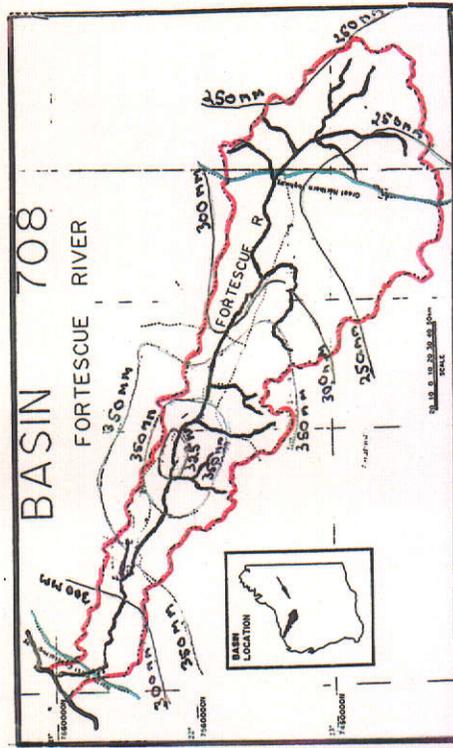


FIGURE 3.5



Plate 3.5: One of the springs at Millstream that feed the Fortescue River. 11th August 1996.

creeping wanderrie, Roebourne Plains grass and neverfail, and the *Triodia* spp. (Beard 1975).

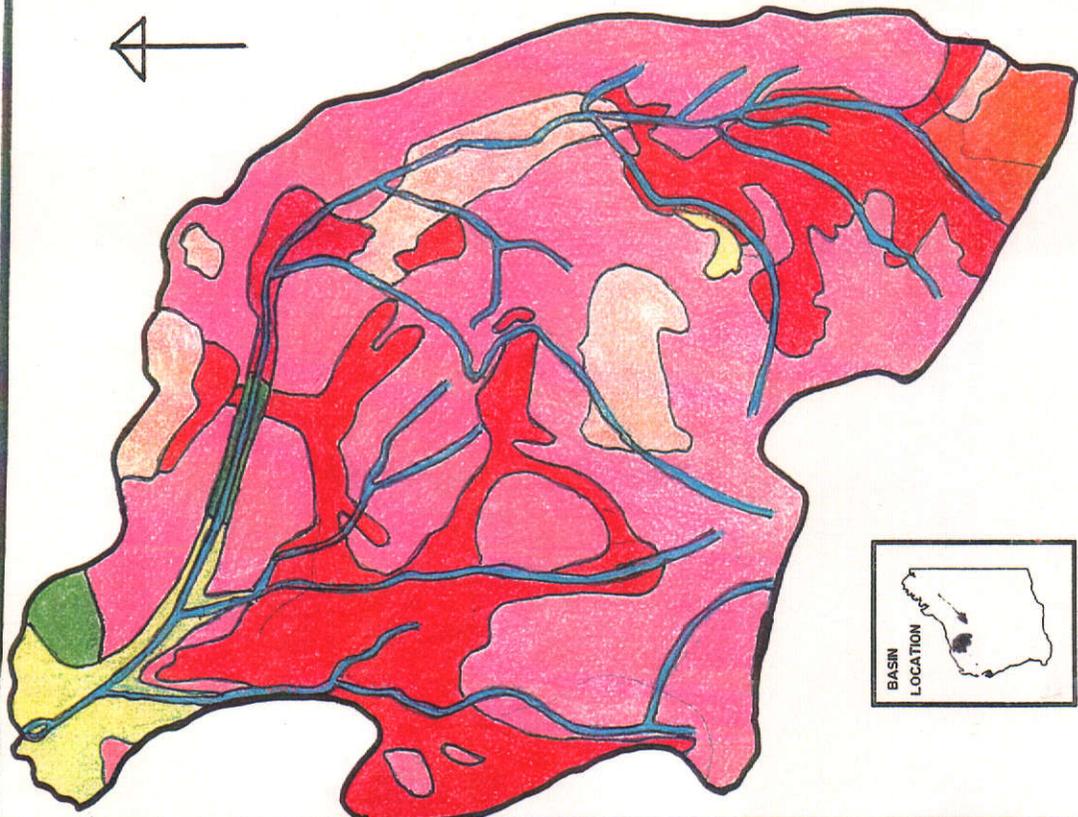
The DeGrey River rises as the Oakover River in the Chichester Range and traverses the rangeland in a northerly direction before swinging westwards north of Warrawagine Station to travel to the Indian Ocean and is some 663 kilometres in length (Studham 1999). Several other watercourses flow into the DeGrey, including the Shaw and Coongan Rivers which also have their headwaters in the ranges. Its drainage basin is a relatively small 56 868 square kilometres (Figure 3.6) (Lerch 1999). The basin is bordered on the south by the Chichester Ranges, the inhospitable dunes of the Great Sandy Desert in the northeast, the Gregory and Isabel Ranges in the east, the pindan to the north and the Indian Ocean in the northwest. Vegetation comprises shrub steppes, savannas and grass plains interspersed with hilly terrain and flat-topped mesas. The relatively treeless short grass plains support a variety of species including a well-known plant of the Murchison, the love grass or Murchison red grass (*Eragrostis dielsii*), neverfail (*Eragrostis setifolia*) and Roebourne Plains grass. Trees are rare and found in small clumps. Present are *Melaleuca* spp. including cadjeput, *Eucalyptus* spp. including the important coolabah, mostly lining the water courses. The granite plain, known as the Abydos Plain, supports shrub steppes of hummock grasslands, and

VEGETATION OF THE DEGREY RIVER DRAINAGE BASIN

Sources: Basin 710, DeGrey River, Water and Rivers Commission, Government of Western Australia, Perth, 1996, *The State of the Northern Rivers*, Water and Rivers Commission, Government of Western Australia, 1997, Beard, J.S. *Vegetation Survey of Western Australia*, Pilbara 1: 100 000, Vegetation Series, Explanatory Notes to Sheet 5, Government of Western Australia, 1975

LEGEND:

-  River and tributaries
-  Bunch grassland; *Astrelba* spp. (Mitchell grass), treeless cracking clay plains, *Cenchrus ciliaris* (buffel grass) some areas
-  Bunch grassland; treeless short grass lands. *Eragrostis setifolia* and *Triodia* spp. dominant
-  Sparse shrub steppe; spinifex grassland; hummock grass, sparse vegetation of irregularly scattered dwarf shrubs less than a metre tall including *Acacia pyrifolia*
-  Tree and shrub steppe; hummock grasslands, scattered trees and shrubs. Dominant tree *Acacia brevifolia*. Others, *A. pyrifolia*, *A. pachycarpa*, *A. xiphophylla*, *A. aneura*, and *Eucalyptus gamophylla*
-  Shrub steppe; hummock grasslands, scattered shrubs. *Triodia wiseana*, *T. basecadowii* and *T. pungens*
-  Mosaic units; mixture of bunch grass and spinifex. Within the mosaic units patches of mulga and grass savannas mixed with spinifex
-  Pindan country of low shrubland, closed low *Acacia* spp. shrubs
-  Tall shrubland; wattle, teatree and other scrub. Shrubs in groves or irregular patches
-  Low woodland; mulga country, *Acacia aneura* less than ten metres tall either irregularly distributed, regularly distributed, or sparse



Scale approx. 1: 750 000

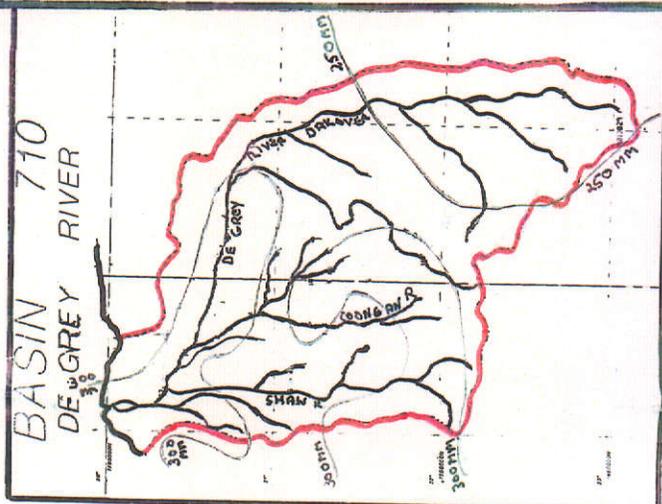


FIGURE 3.6

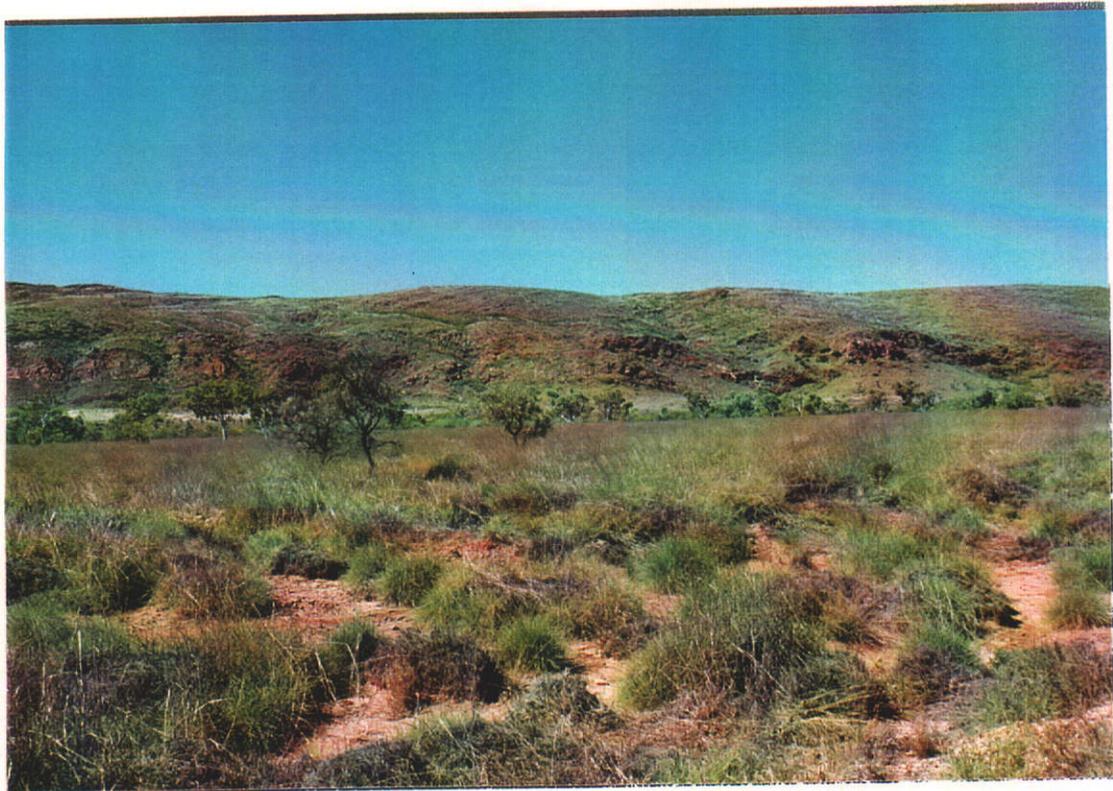


Plate 3.6: The Basalt Plain with the northern rim of the Gorge Range in the rear.
28th July 1997.

includes vegetation mostly of the various *Triodia* spp. (spinifex) and scattered shrubs, with the annual *Swainsona formosa* (Sturt Pea) present after rains. The eastern portion is the basalt plain with vegetation similar to the Abydos Plain (Plate 3.6). The tree and shrub steppes occupy the ranges with vegetation of the *triodia* spp. with scattered trees and shrubs. The snappy gum (*Acacia brevifolia*) is the dominant tree with other *Acacia* spp. evident, including the kanji bush. A small area of mulga country of mostly *Acacia aneura* is in the extreme southeastern corner of the basin. On the coast, further grass plains occur and a small patch of pindan. The coastal plain is a mosaic mixture of bunch grass and spinifex, patches of mulga, and grass savannas with important plants such as those mentioned for the bunch grassland. Pindan country is the same as that discussed below in the West Kimberley (Beard 1975).

Further north in the West Kimberley, the Fitzroy basin is by far the largest basin, comprising 94 116 square kilometres (Figure 3.7). The river rises in the Durack Ranges and traverses through the Kimberley Plateau and the rugged King Leopold Ranges to fall to the plains. From thence it traverses the valley plains to the river mouth in King Sound 560 kilometres away (Lerch 1999). There are three distinct

VEGETATION OF THE FITZROY RIVER DRAINAGE BASIN

Sources: Basin 802 Fitzroy River, Water and Rivers Commission, Government of Western Australia, Perth, 1996, Speck, NH, Wright, RL, Rutherford, GK, Lands of the West Kimberley Area, Western Australia, Division of Land Research and Regional Survey, and the Commonwealth Scientific and Industrial Research Organisation, Canberra, 1964



LEGEND:

-  **Drainage Floors.** Stony undulating country with broad alluvial drainage floors, scattered low hills; yellowish, fine-textured skeletal soils; low open woodlands with curly spinifex and short grasses
-  **Floodplains.** Extensive black plains, dark cracking clays, Mitchell grass and ribbon grass-blue grasslands, sparse trees and shrubs. Small areas of extensive scalded tracts downslope from lateric remnants; yellowish sands to loamy soils; low beefwood woodlands with ribbon grass or curly spinifex
-  **Pindan.** Dunefield and sand plains of deep, red sands; pindan vegetation; some areas low grassy woodlands. Tall woodlands in higher rainfall areas
-  **Outcrops.** Rocky sandstone mountains; skeletal soils, open spinifex and stunted trees. Some areas lateric plateaux and hilly sandstone country; red sands and gravelly soils; spinifex grasslands with scattered trees and shrubs
-  **Ranges.** Rocky quartzite plateaux, mountain ranges and quartzite with outcrops and shallow sandy soils; various open low woodlands with curly spinifex and grassy box woodlands. Smaller areas comprise tall woodlands and forests, abundant shrubs, and curly spinifex and sorghum

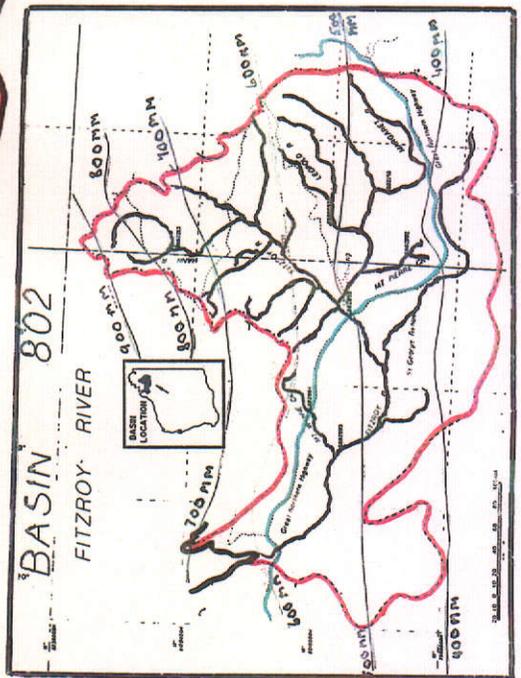
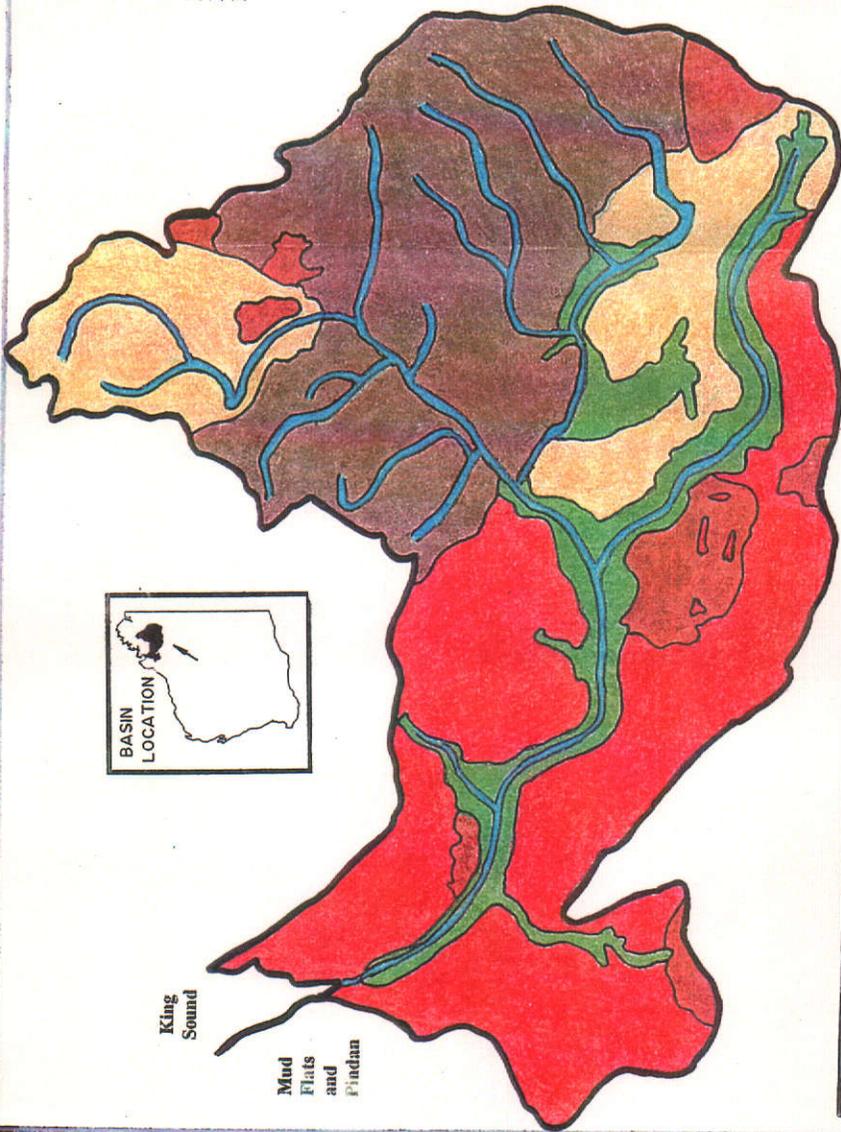


FIGURE 3.7

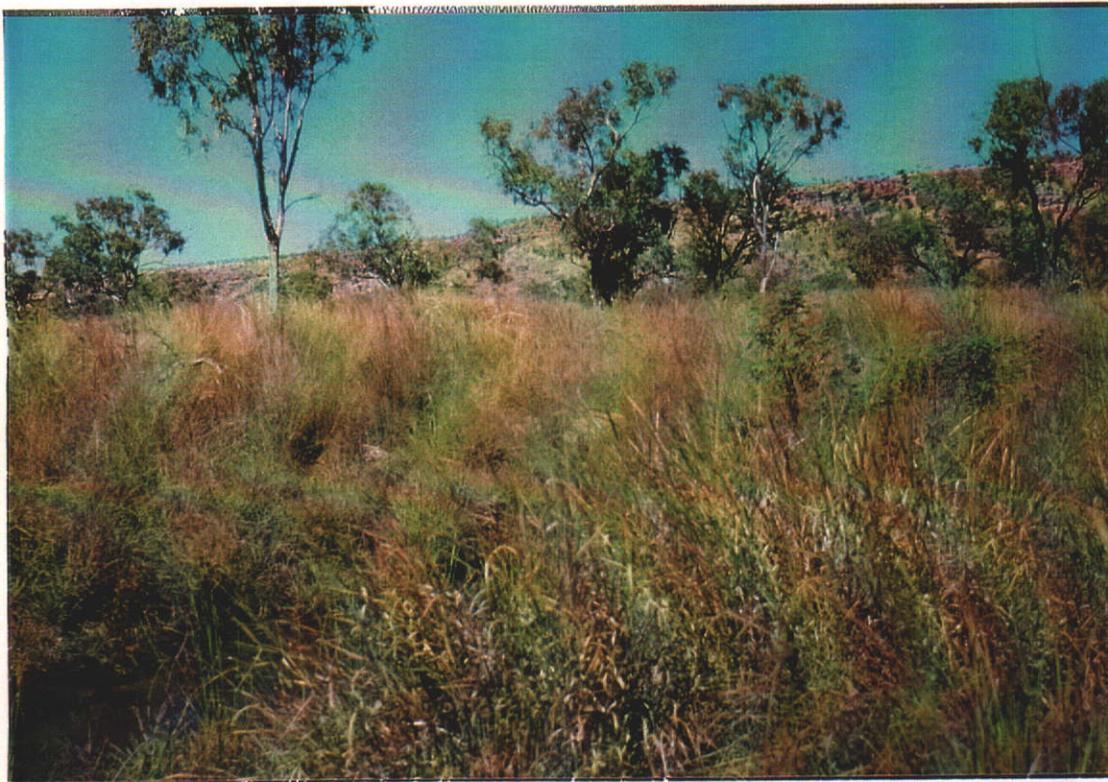


Plate 3.7: Grasses on the Kimberley Plateau. Mount House Station 11th of July 1997.

subregions. In the north of the valley are drainage floors of the Kimberley Plateau savanna comprising Upper Proterozoic sediments over folded quartzite. The plateau is relatively flat with scattered low hills and skeletal soils. Vegetation of the savanna comprises *Plectrachne pungens* (curly spinifex) and a variety of short grasses, including *Sehima nervosa* (white grass), *Dicanthium fecundum* (curly blue grass) and *Heteropogon contortus* (speargrass) (Plate 3.7) (Beard 1979).

Further south are the extensive and rugged Pre-Cambrian ranges running in a northwest-southeast direction, and bordered on the southern side by the Devonian limestone reefs. Further drainage floors lie at the foot of the reefs interspersed by the floodplains of the Fitzroy River with its dark, cracking clay soils of Permian and Mesozoic age (Guppy et al 1958). The important vegetation of the cracking clays comprises the Mitchell grass (*Astrebla* spp.) and the ribbon grass (*Chrysopogon* spp.)-blue grass (*Dicanthium* spp.) grasslands (Plate 3.8) (Petheram and Kok 1991). Other important varieties of grasses include the *Aristida* pp. (kerosene grasses) and *Sorghum* spp. Trees are sparse, except for the beefwood woodlands with their ribbon grass or curly spinifex association, and the many *Eucalyptus* spp., *Melaleuca* spp., and the noted boab *Adonsonia gregorii*. West and south are isolated rocky sandstone outcrops with skeletal soils, open spinifex plains within a vast swathe of pindan (Beard 1979).



Plate 3.8: Treeless cracking clay plains. Grasses are the *Chrysopogon fallax* (weeping ribbon grass), *Plectrachne pungens* (curly spinifex) and *Aristida* spp. Laurel Downs Station
22nd of June 1997.

The pindan country comprises dunefields and sand plains of deep red sands, with vegetation of low grassy woodlands with taller woodlands in the higher rainfall area (Plate 3.9) (Speck et al 1964). The spinifex-ribbon grass pastures include the curly spinifex (*Plectrachne pungens*) and a variety of annual *Sorghum* and other important annuals. The upper layer of the pindan has tall shrub thickets of the *Acacia* spp. prominent, and stunted trees such as the *Bauhinia* spp., the *Eucalyptus* spp. such as the bloodwoods, the *Erythrophleum* spp. (ironwoods) and *Melaleuca* spp. (paperbarks) (Beard 1979).

All rivers have intermittent flow depending upon the variable rainfall. During dry seasons, the rivers are a string of pools which mostly disappear in periods of drought. After exceptional precipitation brought by rainbearing cyclonic depressions, thunderstorms or mid-level disturbances, the rivers and their tributaries flood the surrounding landscape, bringing beneficial waters. The precipitation on such a scale fills surface and subterranean water storage, provides soil moisture for the vegetation response and breaks a drought. Climatic conditions are the most important contributing factor over the ecosystems and vegetation of the semi-arid, semi-desert/sub-humid and semi-arid monsoonal river basins. These factors were of



Plate 3.9: Pindan country in the a higher rainfall area near the coast. Nillibubbica Travellers Wayside Rest 26th of May 1997.

primary importance to the first settlers and strongly influenced the landscape changes that followed European occupation.

3.3 Climate

The climate of a location is dependent on a number of factors including the influence of latitude upon temperatures, air mass characteristics of both temperature and precipitation, the effects of distance from the coast, and topography. Coastal regions usually experience more equable temperatures, higher rainfall, and in some cases in the summer months, afternoon sea breezes. Through the orographical effects, more elevated topography tends to be reflected in greater rainfall (Perry 1970, Beard 1975, Heathcote 1983). The topographical distinctiveness of the Fitzroy, DeGrey and Fortescue basins helps explain why they receive more rainfall than the semi-arid shrublands further south. Of importance to the thesis and the European settlers however, is that all basins are subjected to long periods of dry seasons and of more significance, to the debilitating effects of drought. The ten year drought commencing 1936 not only caused extensive stock losses, but was also directly responsible for the destruction of much of the mulga and foraging grasses (SROWA ACC, 541, 1936-1938, AN3/6, All Files).

The semi-arid shrublands of the Murchison basin experience both summer and winter rainfall. The basin's southwestern boundary is on the humid side of the 400mm isohyet. Mean annual rainfall varies from over 350mm near the coast, to under 200mm in the basin's eastern third (Figure 3.2) (Water and Rivers Commission 1997). The summers are characterized by long hot, dry days with mild to warm nights. Developing troughs along the west coast bring dry, north-easterly winds which cause temperatures to rise sharply with, on rare occasions, scattered localised thunderstorms to be followed by cooler conditions as the trough moves eastward (Bureau of Meteorology 1998). Average daily maximum temperature ranges from 38°C in January to 29°C in April, with a high 49°C somewhere in the basin at least once a year. Minimum night temperatures range from 22°C to 14°C. During the summer developments of intense low pressure systems off the North West coast bring cyclonic conditions in spasmodic periods, resulting in widespread rain. On infrequent occasions during the winter months, cloud bands that originate in the Timor Sea drift over the Gascoyne and Pilbara coasts, and at times mingle with the southern temperate depression systems, bringing widespread rains to the basin (Plate 3.10). Otherwise only the strong southern anti-cyclonic systems penetrate during the winter months. Inland the winters are quite cold, with frosts at irregular intervals. Temperatures during the winter months range from maxima of 18°C to minima of six°C (Curry et al 1994).



Plate 3.10: A cloud band approaching the central Gascoyne basin. Dalgety Downs Station

24th of July 1996

The Gascoyne basin, situated within the 200mm to 250mm isohyets, receives less average rainfall than the other basins, with most places averaging around 200mm (Figure 3.3). The Gascoyne is the driest of all the river basins under study. The limited rainfall and its effect on plant growth place considerable emphasis on rangeland management, particularly during drought conditions. Summer maximum temperatures are similar to the Murchison basin. However, the greater variability of the rainfall can mean long periods of dry weather, or sudden onsets of torrential rain (Wilcox and McKinnon 1972).

The effect of topography upon rainfall is clearly marked in the Ashburton basin, where the northern fringe, within the Hamersley Range, has a mean annual rainfall of over 350mm. By contrast places in the basin's southern half receive under 250mm, and in some cases, under 200mm (Figure 3.4). Apart from the more humid centre of the basin, which is between the Chichester Range to the north and the Hamersley Range to the south, the rainfall of the Fortescue ranges from 300mm on the coastal regions to 250mm at its headwaters (Figure 3.5). Most rainfall is associated with the tropical cyclones that visit the coastline in the summer. Winter rainfall is rare. Mean temperatures range from summer maxima of 35°C on the coast to over 49°C inland, with corresponding winter minima of 12°C and 10°C (Beard 1975).

Those parts of the DeGrey basin occupied by the DeGrey and Coongan Rivers receive over 300mm annually, while rainfall decreases progressively up the Oakover, from 300mm to 250mm (Figure 3.6). Precipitation is rare in winter and spring. Winter minimal temperatures, at around 12°C, vary little throughout the basin, but summer maxima inland (42°C at Marble Bar for example) are up to 6°C higher than near the coast (Beard 1975).

The climate of the semi-arid monsoonal grasslands of the Fitzroy basin is controlled by the cyclonic and monsoonal disturbances, the ranges on the northern flanks receiving the highest rainfall and channelling their waters to the lower regions of the basin, sometimes in wide-spreading and raging torrents of mostly beneficial floods (Beard 1979). Precipitation in the semi-arid monsoonal climate of the Fitzroy basin varies from an annual average of 400mm in the southern pindan to 900 mm on the northern extension of the Kimberley Plateau across the King Leopold Ranges (Figure 3.7). Most rainfall occurs between November and April, though some light, sporadic falls occur during the dry winter months, but consecutive months without rainfall are normal. Mean summer maxima temperatures range from 38°C near the coast to 42°C

inland, corresponding mean winter minima being 14°C and 10°C respectively. The hottest time of the year is November and the humidity is high. Cloud cover with the onset of the wet season lowers temperatures. (Bureau of Meteorology 1996).

Examples of the aridity of the Gascoyne and Ashburton basins are seen in Figures 3.8 and 3.9 below. With a mean annual rainfall of 217mm, Brick House near the mouth of the Gascoyne has the lowest coastal precipitation recorded in any of the

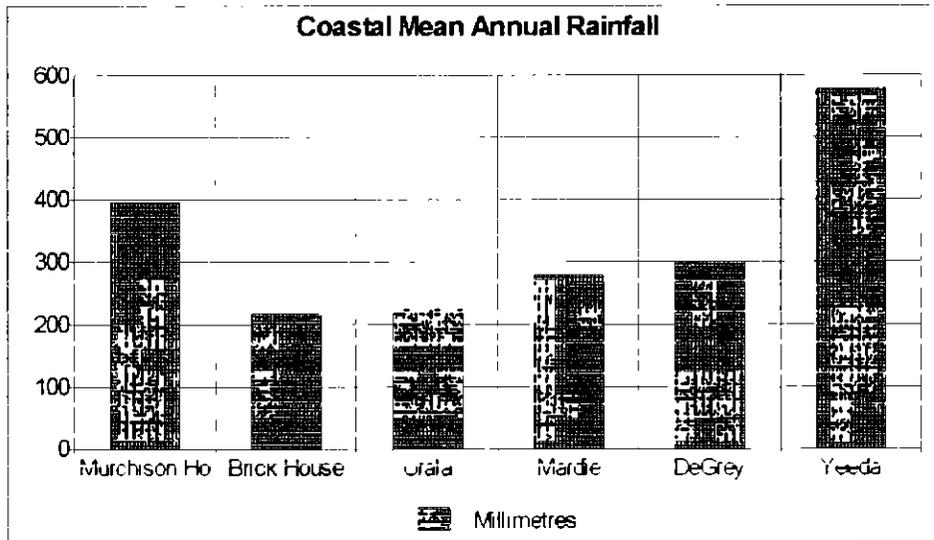


Figure 3.8: The mean annual rainfall of the river mouths taken from data available. Source: McCall, Garry, 1999, *Monthly Rainfall Data, Stations Listed*, Climate and Consultancy Section, Western Australia Regional Office, Bureau of Meteorology, Perth.

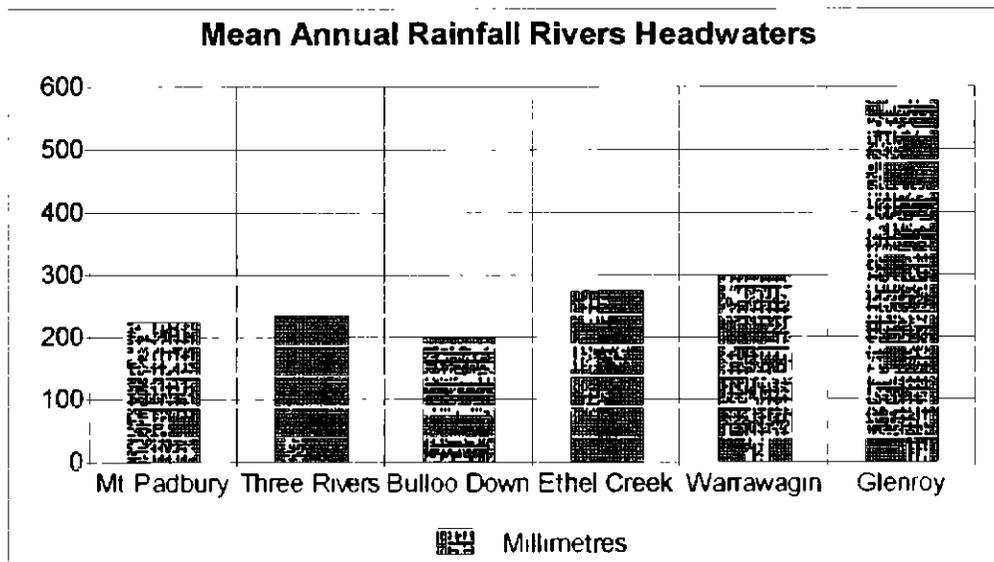


Figure 3.9: The mean annual rainfall for the rivers headwaters taken from available data. Source: McCall, Gary, 1999, *Monthly Rainfall Data Stations Listed*, Climate and Consultancy Section, Western Australian Regional Office, Bureau of Meteorology Perth

six river basins, and far lower than the 577.9mm recorded for Yeeda near the mouth of the Fitzroy River. A more temperate climate is found in the coastal Murchison with the mean annual rainfall of nearly 400mm. Urala near the mouth of the Ashburton has a mean annual rainfall of 279.5mm, much higher than the coastal Gascoyne (Figure 3.8). At the headwaters of the river basins the aridity is quite pronounced, the exception being Glenroy with 614mm at the headwaters of the Fitzroy River. In the Murchison region, Mount Padbury at the foot of the Robinson Ranges, the closest location to the headwaters of the Murchison River, records 225.8mm, compared with nearly 400mm at Murchison House-Kalbarri. The headwaters of the Ashburton River are the driest of all, with Bulloo Downs recording only 209mm. Thus the Gascoyne River is the driest basin, whilst the Ashburton River has the driest headwaters (McCall 1999).

3.4 The First Settlers of the North West

The ancient environment of the Tertiary period of the North West was much wetter than the modern environment. Huge freshwater lakes filled with aquatic creatures existed in the areas of the modern desert landscape. It was the harsher environment of the Pleistocene age when glaciation covered much of the northern hemisphere that was responsible for not only the aridity of the modern landform, but also for the changes to the landform itself. During the Pleistocene the continental shelves of the North West coastline were exposed, in some places up to two hundred kilometres wide. The last glacial event occurred around 17 000 BP. Since that time the sea levels gradually rose and the continental shelf was submerged in the rising sea (Muller and Oberlander 1984). This was an important era for the first settlers of the North West.

During the Ice Age period, ancestors of the Aborigines are thought to have drifted down from South East Asia via Wallacea to land on the coast of the North West possibly 60 000 years ago (Figure 3.10) (Jones 1979). No information has been recorded of the arrival of the Aborigines, nor discovered through extensive archaeological, anthropological and ethnographical studies and research. No doubt the evidence was submerged by the rising ocean. It is not known if the Aborigines migrated voluntarily, or were forced out by a more dominant population drift from elsewhere, or were exploring and discovered the land, or drifted down in boats as a result of some storm (Berndt 1985).

Throughout the period of Aboriginal occupation prior to the European settlement the people lived with the land and knew it intimately. Every creek, rock, hill,

tree, river and range they perceived as being created during The Dreaming when ancestral beings formed the earth. These Dreaming heroes transformed members of their bodies into trees, hills, rocks and so forth (Jones) 1979. Consequently, the

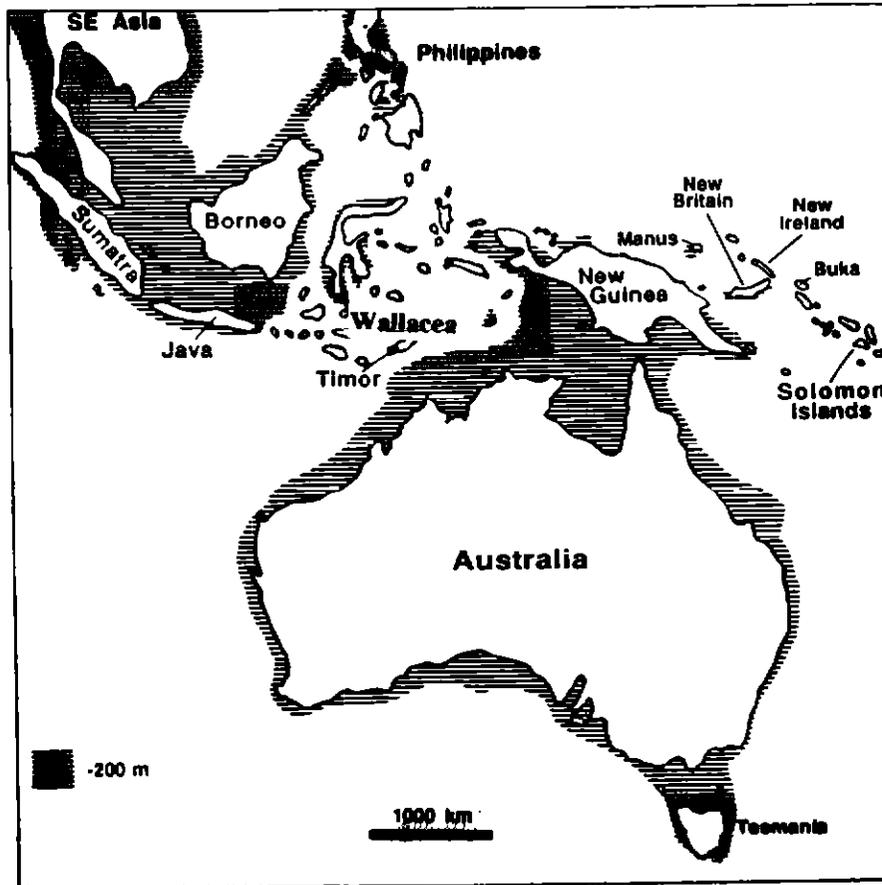


Figure 3.10: The continental shelf of Australia, New Guinea and the Philippines and the area designated as Wallacea. Source: Western Australian Museum, Perth, 1998.

landscape was of paramount importance to them and their whole life was bound up in these physical features of The Dreaming, as well as with the spiritual and aesthetic side of the rituals and totemism associated with it. Of equal importance was Nature, an essential element in the Aboriginal way of life (Elkin 1970). The resilience and adaptability of the Aborigines was a major part of their resource management of the rangelands and linked their individual groups. However, the linkage was not one vast system, but diversified small scale societies linked together across the North West with no overarching authority of a majority (Berndt 1985). This view is supported not only by archaeological and anthropological evidence, but also through their many creative stories, songs and art work of and related to The Dreaming (Jones 1979).

There was relative isolation among the groups of people who were the first settlers of the North West. There were many languages though of similar structure. Adjoining language groups could understand their neighbour's dialect. Fraternisation between groups did occur for ceremonial purposes, for food purposes during drought, and trade linkages, which spread across the Australian continent (Figure 3.11). An important item traded was red ochre from the central Murchison

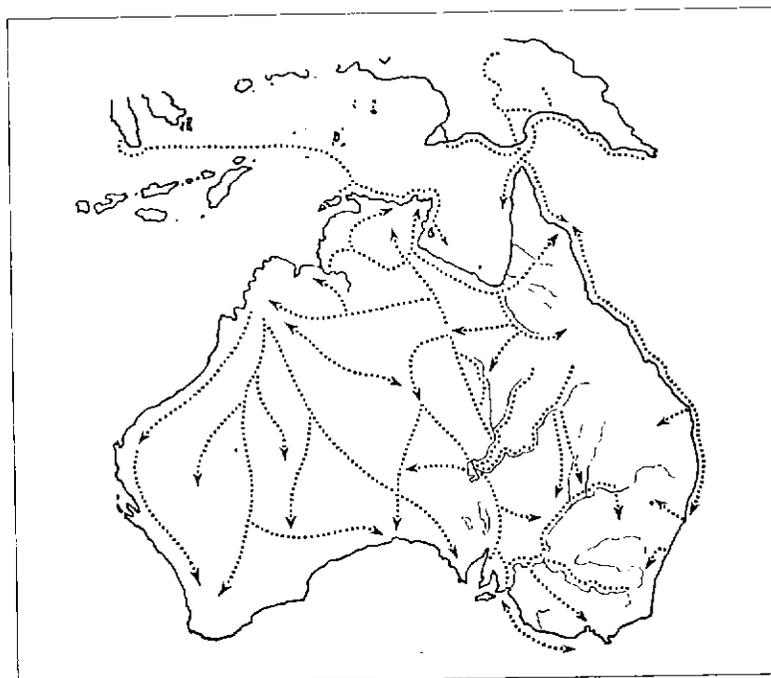


Figure 3.11: Trade routes of the Aboriginal people across Australia.
Source: Berndt R.M. and C.H 1985

basin, where the colouring had been mined for thousands of years. Trade was carried out with the Macassar (Indonesian) fishermen along the North West coast (Forrest 1996) and Arnhem Land (Berndt 1985). The fishermen, though showing no signs of permanent settlement, transformed small areas of the coastal landscape with their pottery kilns, huts and vegetable gardens, while they caught and processed the prized sea-slug trepang.

The settlements that were developed were used on a semi-permanent basis, based on the season for gathering trepang (Tonkinson 1978). Very little trace remains of these visitors, though archaeological work is continuing. As a result of the outside contact with the Macassar fishermen, new methods of transportation were introduced to the Aboriginal people who devised and built outrigger canoes complete with sails. On the rivers, the canoes were smaller. There was no attempt to imitate the vegetable gardens favoured by the visitors. The Aborigines considered such an exercise

a waste of time, when all they needed was already provided by their ancestors of The Dreaming. Cultural ideas also spread along the trade routes, including the traditional stories and songs which record the Macassar visitors. The Berndts report that there were hundreds of examples of such dispersals all over Australia (Berndt 1985).

3.5 Technology of the First Settlers

The Aborigines were directly dependent upon the environment for their daily sustenance and shelter, which in turn was dependent on the cycle of seasons. Shelters such as the wurley were constructed from spinifex grass (Rose 1968), in the Fortescue mia mias were constructed from the bark of the *Melaleuca* trees, and from the fronds of the Millstream Palm (Plate 3.11). In the Kimberley some shelter was



Plate 3.11: A mia mia at the CALM rangers' quarters at Millstream. It is constructed from the fronds of the Millstream Palm. Spears, woomeras and digging sticks flank the entrance. Fortescue basin, 10th of August 1996.

provided by caves and brush dwellings were constructed on stilts above the floodlines of billabongs and rivers. Important tools comprised the digging stick and stone axe, weaponry the spear, nulla nulla and woomera. Aesthetic materials included the didjeridoo and tapping sticks. Bark from trees such as the beefwood, rocky areas and cave walls were their artists' canvas for paintings and petroglyphs, the latter prehistoric rock carvings (Plate 3.12). Native plants, ground-up rocks and clay provided the

artistic colouring (Rose 1968). Messages were relayed by an etched message board, usually made from a strip off the beefwood tree, and important stories were recorded in the same manner (Tonkinson 1978).



Plate 3.12: Prehistoric petroglyphs, Mount Augustus, Burrungurrah Community, 12 August 1997.

From the Murchison basin to the Fitzroy basin, grinding stones were used by the women to crush seeds into flour (Plate 3.13). In the DeGrey region Aborigines softened the stalks of plants between the stones, then rolled them into a fine rope to make fish nets for use along the rivers (Briggs 1917). Women made coolimans, a type of bowl, out of bark and wood, and dilly bags out of animal skins to carry whatever they needed. Emu feathers were used as pads for the head to carry their full coolimans, spinifex resin was used to repair the coolimans when cracked. (Tonkinson 1978). The men used the resin for attaching the stone points on their spears (Rose 1968). In the Ashburton coastal region Aborigines made rafts out of mangrove logs for sailing to the nearby islands (Forrest 1996). To the North West Aborigines, the natural resources provided all their needs.

3.6 Utilising the Rangelands and Coastal Regions

The vegetation of the semi-arid lands of the North West provided adequate sources of food that sustained the first settlers. The fauna that used the



Plate 3.13: Greenstone was used for this grinding stone, Woolgorong Station 6th of June 1996.

rangeland vegetation were another food resource. The Aboriginal people were nomadic, travelling from one watering point to the next and gathering the food resources in the area, with their visits depending upon seasonal conditions. The men were the hunters, whilst women were the gatherers (Berndt et al 1979). Men hunted the kangaroo, emu and the bustard, a wild turkey (Nangan and Edwards 1976). They also caught waterfowl on the inland lakes, claypans and rivers (Boddington 1996). In the coastal regions from the Murchison to the DeGrey they trapped and speared fish in the rivers, such as the red salmon and perch (Forrest 1996). Shellfish were part of the coastal-dwellers' food resources (Berndt 1985). On the Fitzroy River, the barramundi, turtle and cherabun were snared (Nangan and Edwards 1976). Women collected the seeds of plants, dug for yams, collected fruit such as the quandong and wild plum from the trees, picked nuts and berries from bushes and creepers, and caught small animals and reptiles (Berndt 1985). The women of the DeGrey basin ground spinifex seed to make a type of flour (Briggs 1917). Other types of seeds were crushed also in all the basins, taken from the *Acacia* shrubs, perennial plants, grasses and annuals. An important perennial fern was the nardoo (*Marsilea drummondii*) (Mitchell and Wilcox 1994). Edible grubs such as the bardie were dug from beneath the bardie bushes, which were selected varieties of the *Acacia* spp. (Tonkinson 1978).

In some areas where the food supply was guaranteed over a long period, semi-permanent dwellings were constructed. An example is the Murchison to Shark Bay region where the Nanda people constructed small, circular clay huts beside partly-cultivated fields of warren, a type of tuber. Wells were dug along the local paths, some of them up to a depth of 5 metres. The area was used as a semi-permanent residence when the warren was ready for harvesting (Grey 1841).

The vegetation was used for medicinal purposes also, either taken, or ground into a pulp and placed over wounds, or worn. Examples come from the Bardi people of Lombadina north of Broome. For toothache and decayed teeth the dark red gum of the *Eucalyptus dampieri* (bloodwood) was applied direct onto the sore areas or plugged into the holes in the teeth. Another example from the same people concerns the versatile resin of the spinifex which was burnt and the aromatic smoke used as a decongestant, a cure for headaches, and to keep the mosquitoes away (Western Australian Museum 1997a). Aborigines also chewed a nicotine plant, *pituri*, available from the Western Desert region. The leaves of this plant were traded across the continent and with the Macassars. The pituri was also smoked in long clay pipes or crab claws (Berndt 1985). Another useful plant was *Acacia victoriae* (prickly acacia) of which small branches were used in a ritual for new-born babies in the southern Kimberley. The thorns were picked and scraped up and down the arms of adolescents. The belief was that both actions would strengthen them (Milgun 1997). The same plant is still used to treat various types of sickness in the Murchison, including wrapping the bark around the head for headaches (Lawson 1997).

3.7 Aboriginal People and the Environment

The Aboriginal people used fire to transform the rangelands. This technology was classed as a fire burn, or fire-farming, and used to flush out the small animals as well as to encourage new grass growth. The operation took place at the same time each year. The land was burnt in strips with the previous year's strip acting as a fire break. The activity was carried out in a methodical and restrained manner that took into consideration the type of country. Burnt areas were never extensive and were mostly concentrated on land that supplied abundant food resources. Nevertheless, Aboriginal fire methods were responsible for changing the landscape from forests to open woodlands, with existing woodlands tending to become savannas, while the savannas evolved into grasslands (Beard 1975).

The Aborigines perceived the environment in terms of The Dreaming. They considered themselves direct descendants of ancestral beings from The Dreaming who had created and formed the land, and accepted the responsibility as caretakers on behalf of their ancestors. Thus the physical landscape with its rocks, watercourses, trees and animals was seen by each individual as proof of that belief, and gave them a personal and close relationship with everything in the environment (MacDougall 1990).

3.8 Aboriginal Language Groups

There were quite a number of Aboriginal language groups in the river basins. Gathering and hunting the resources of the Murchison basin were the Nanda and Amangu people on the coast. The Baramai and Watjeri were in the central region, their ephemeral boundaries reaching into the Gascoyne basin. In the region of the headwaters of the Murchison and Gascoyne Rivers were the Ngaiawongga people. Various other nomadic bands were also present. Other groups in the Gascoyne basin included the Maia and Mandi people. In the Ashburton basin roamed quite a large number of Aborigines of various dialect groups including the Noala, Jadiri, Kurama, Bandjime, Inawongga and Mandara people. Further north in the DeGrey basin were the Nyamal along the upper reaches of the DeGrey River and along the Oakover River. On the coast were the Jaburara people. Another important group were the Mardudunera. On the Fitzroy basin along the river were the Bardi language group, whilst over the ranges on the Kimberley Plateau the Ngarinyin people. These are only some of the known groups, for there were others as well. Most of the groups are still within or near the basins in the modern era (Western Australian Museum 1997b).

The original environment of the river basins underwent a slow process of modification as the first settlers conducted their day-to-day business of food collection and their associated cultural activities. This was the scene, set over thousands of years, that greeted the first seafaring explorations and the following European settlers. The early seafarers to the North West considered the Aborigines primitive, non-religious and with no worthy trading goods. Used to the green of a European countryside, they considered the landscape arid, inhospitable and worthless. In actual fact the Aborigines were miners, farmers and land conservationists and the rangelands had more to offer than was understood.

3.9 European Settlement of Western Australia

Dutch, British and French seafarers explored the North West coastline from the seventeenth to the early nineteenth century. Throughout that period the captains of the vessels reported on the harsh and unforbidding coastline, the aridity, the heat and the fierce storms. They also reported unfavourably on the Aboriginal people labelling them primitive, with nothing of worth to trade (Marchant 1982). In 1688 and 1699 British explorer William Dampier was critical of the land and its people. At that time no one however, ventured inland beyond the waterless and barren coastline. An attempt to settle the North West was not to take place until after the settlement of the Swan River Colony in 1829.

After arrival in 1829, many settlers sought to establish themselves on their Swan and Canning ribbon grants. It was soon apparent, however, that much of the land held by the new colonists could not support a grazing economy (McDonald and Cooper 1988), and the Avon Valley was soon occupied. A pastoral enterprise based upon native vegetation required a lot of room and, as grazing resources were depleted through overstocking and drought, whilst newcomers and the sons of landowners sought land upon which to establish their flocks, interest rapidly spread to the north, east and south of the occupied area. The process was similar to the movement of pastoralism to the interior of eastern Australia (Perry 1961, Heathcote 1965, Powell 1970). Pastoralists established themselves on the headwaters of the river valleys between the Avon and Albany, along the coastal plains south of Perth (Erickson 1978), and north into the Victoria Plains and Champion Bay regions (Bain 1975). Expansion east of the Avon and into the forest country of the South West was inhibited by the poor quality of the natural forage (Bain 1975). By the late 1830s, therefore, the search for further pastoral lands was necessary.

Coastal explorations were conducted with this end in view. In 1837 George Grey sailed to the North Kimberley as far as Camden Harbour. Lieutenant John Lort Stokes of the HMS *Beagle* explored north as far as the Fitzroy River in 1838, which he named after Captain Robert Fitzroy, a former commander of the *Beagle* (Forrest 1996). In 1839, Grey, after a calamitous expedition to Shark Bay, explored part of the coastal Murchison on his enforced march from that region in 1839. He named the Murchison River in honour of the British scientist Sir Roderick Murchison. He was to report on the lush country of Chapman River Valley and named all the rivers he crossed as he traversed south (Grey 1841). His glowing reports saw

members of the drought-stricken, grass-depleted Avon Valley region quickly taking up the new land (Bain 1975). The next process of the development phase was in the coastal region of the Murchison basin.

3.10 Conclusion

Vegetation and climate of the river basins are divided into three distinct subregions; the semi-arid shrublands of the Murchison, Gascoyne and Upper Ashburton basins; the semi-desert/sub-humid steppes of the Fortscue and DeGrey; and the semi-arid monsoonal region of the Fitzroy basin. Each basin, however, is subject to long periods of dry seasons and the exhausting, debilitating effects of drought. Records researched and rangelands traversed have demonstrated that the vegetation of the river basins of the North West is fragile though astonishingly resilient, having adapted to the unpredictable climate with its variable and unreliable rainfall. Similarly, the Aboriginal people, over thousands of years, adapted their nomadic lifestyle to the nature of the environment, perceiving it as suitable for all their needs and using the resources accordingly, their lifestyle taking into consideration the variability of the climate. Early seafaring exploration, however, considered the North West harsh and unproductive and the indigenous people mere savages. Consequently there was no endeavour to explore the river basins, or any attempt of coastal settlement. After the European settlement of the Swan River Colony and its surrounds, however, the pressure on the land from grazing activities generated the need for more detailed exploration. It was but a stepping stone from the Champion Bay region to the exploration and pastoral occupation of the river basins in the North West. It was this environment discussed above that greeted the first settlers when they ventured north with their flocks, servants and equipment to establish pastoral industries in the North West. To them, the relatively unknown environment and the enormous distance from the settled southern areas provided a challenge of a magnitude not faced by the settlers of the Warrego country (Heathcote 1965), Western Victoria (Powell 1970), or even of the wheat frontier of South Australia (Meinig 1962).

Chapter Four

Pastoral Expansion into the River Basins 1855-1885

4.1 Introduction

The settlers who penetrated the river basins of the North West had one major concern, which was to secure land to run a pastoral enterprise. Agricultural implements were not part of their travelling equipment. Analogous with the situation in the eastern colonies a quarter-century or so earlier, the unoccupied Crown land was plentiful, capital was scarce, labour was in short supply, and there was a growing overseas market for wool. The demand for land and water resources therefore, turned hopeful eyes to the arid north. The perception of the South West settlers was that grazing stock needed more land than was available. The distance from the southern settled areas was a challenge, but not a deterrent in the quest for suitable grazing land. Government officials, grassmen, merchants and others advocated expeditions to the north by sea or by land, and the resulting reports published in the local press were avidly read and discussed on the explorers' return. The initial land tenure system was devised with the needs of a viable pastoral enterprise in mind. Historical data surveyed concerning lease settlement of the North West portrays the slowness of actual settlers arriving in the vast region.

The first European settlers in the North West came mainly from the South West or Victoria. They established their homesteads on the first available waterholes of coastal creeks and rivers and gradually spread into the hinterland as their knowledge of the country grew. Others chose their leasehold runs from maps in the offices of the DL&S, and frequently abandoned their properties without ever seeing or stocking them. Settlement occurred in four waves and gained some momentum after the institution of a representative Legislative Council in 1870 and more lenient land regulations were devised in the early part of that decade.

4.2 The First Move North: The Champion Bay/Northampton Shepherds, Geraldine Mine and the Murchison Region. Exploration and the First Pastoral Settlements

The pastoral settlement of the North West occurred in four waves, the first of which involved the occupation of the lower Murchison basin. Official exploration was performed by parties led by government surveyors Robert Austin, the Gregory brothers, and John and Alexander Forrest. The Gregory and Forrest brothers faced the harsh and unknown landscape of the North West with horsemanship and

bushmanship skills acquired in their early lives through working on the family farms and pastoral runs, exploring the bush and the isolated settlements around them. Their skills were later honed under the watchful eye of the colony's first and long-serving Surveyor General John Septimus Roe. The Forrest brothers studied their first surveying techniques as indentured apprentices to Bunbury's government land surveyor Assistant Surveyor Thomas Campbell Carey (Crowley 1971). Later under Roe's tutelage his students were given the opportunity to explore and survey not only the settled areas of the struggling young colony but also vast regions of the empty hinterland (Cameron 1975)

The occupation of the rangelands in the river basins constituted a series of firsts: the first shod hooves trod the hardpans, steppes and cracking clay plains; the first domesticated stock fed on the natural resources; the first European camps were pitched at the waterholes; and the first reports were made of contact with the Aborigines. The first push towards the North West began with Roe in 1847 who, with Henry Gregory, explored the headwaters of the Bowes and Hutt Rivers north-east of Champion Bay (Cameron 1975). Following Roe's explorations, Augustus and Charles Gregory, accompanied by a diligent land-seeker and colonial-born Irwin and Bowes Rivers pastoralist, Lockier Clere Burgess, with James Walcott and A. Bedart, explored a portion of the Murchison basin from its mouth in 1848. During their travels Gregory and Bedart discovered lead ore on the banks of the Murchison River 60 kilometres inland. In 1849 the area was classed as a mineral field, the first in the Murchison basin, and the Geraldine Mine commenced operation with Burges as its first manager (Suba 1993).

In the newly-settled Champion Bay region the pastoralists were hard-pressed to expand their holdings at the time, for the waterless, scrubby, poison-weed infested sandplain of their immediate hinterland proved a formidable and effective barrier between themselves and the interior. As a consequence they were also involved in exploration and appraisal of suitable land for expanding their industry. They followed their ticket-of-leave shepherds who drove their flocks up the watercourses and across the forbidding sandplain into the unexplored regions to the east and the north east of Geraldton (Keeffe 1994). Access to the southern market for these pastoralists was provided by the shipping facilities at Geraldton, or the notoriously sandy North Road to Wanneroo, which was the first developed stock route equipped with wells to traverse northwards from the young colony in the south (de Burgh 1981).

Pressures on the natural grasses were, however, soon apparent around river frontages and, as the flocks grew in numbers, shepherds of the land-hungry pastoralists sought grazing lands further afield beyond the lower reaches of the rivers (Cameron 1975) By the time Robert Austin commenced his 1854 exploration into the Murchison and Gascoyne basins and reported on the harsh, drought-stricken environment, settlement had spread along the coast from Champion Bay to Northampton, and ticket-of-leavers working as shepherds for the pastoralists in the region were drifting up the Irwin, Greenough, Chapman, Bowes and Hutt Rivers in the search of suitable watering places and natural grasses for their flocks (Figure 4.1)

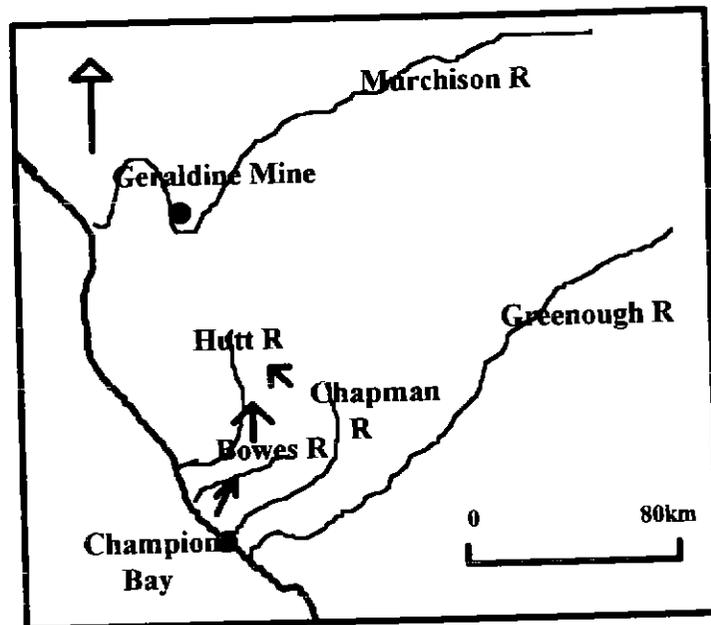


Figure 4.1: The first move towards the Murchison basin in 1847 and the location of the Geraldine Mine

(Keeffe 1994). Austin's unfavourable reports however, dashed the hopes of the settlers and the auriferous ground discovered was ignored by the Colonial Government. Shortage of water and the death of ten horses from eating a poisonous plant forced Austin to abandon the expedition (Figure 4.2) (Austin 1854). Austin's achievements were given little mention, which was unfortunate for the pastoralists and the Colonial Government, as both parties could have learned more of the effect of the drought on the rangelands, particularly in relation to their condition during future explorations. In 1858 Francis Thomas Gregory and Stephen Trigg explored both the Murchison and Gascoyne basins, naming many topographical features. They reported on the lush pastures and tall grasses in both river basins which had recently experienced favourable seasons (Figure 4.2). Thus the contrasts of drought and good seasons were witnessed within four years of each other (Gregory 1884). However, stringent land regulations

**EXPLORATION OF THE MURCHISON, GASCOYNE, ASHBURTON,
FORTESCUE, DEGREY AND FITZROY RIVER BASINS IN THE NORTH
WEST OF WESTERN AUSTRALIA**

Source: *Western Australia: An Atlas of Human Endeavour 1829-1979*, Education and Lands and Surveys
Departments, Western Australia, 1979.

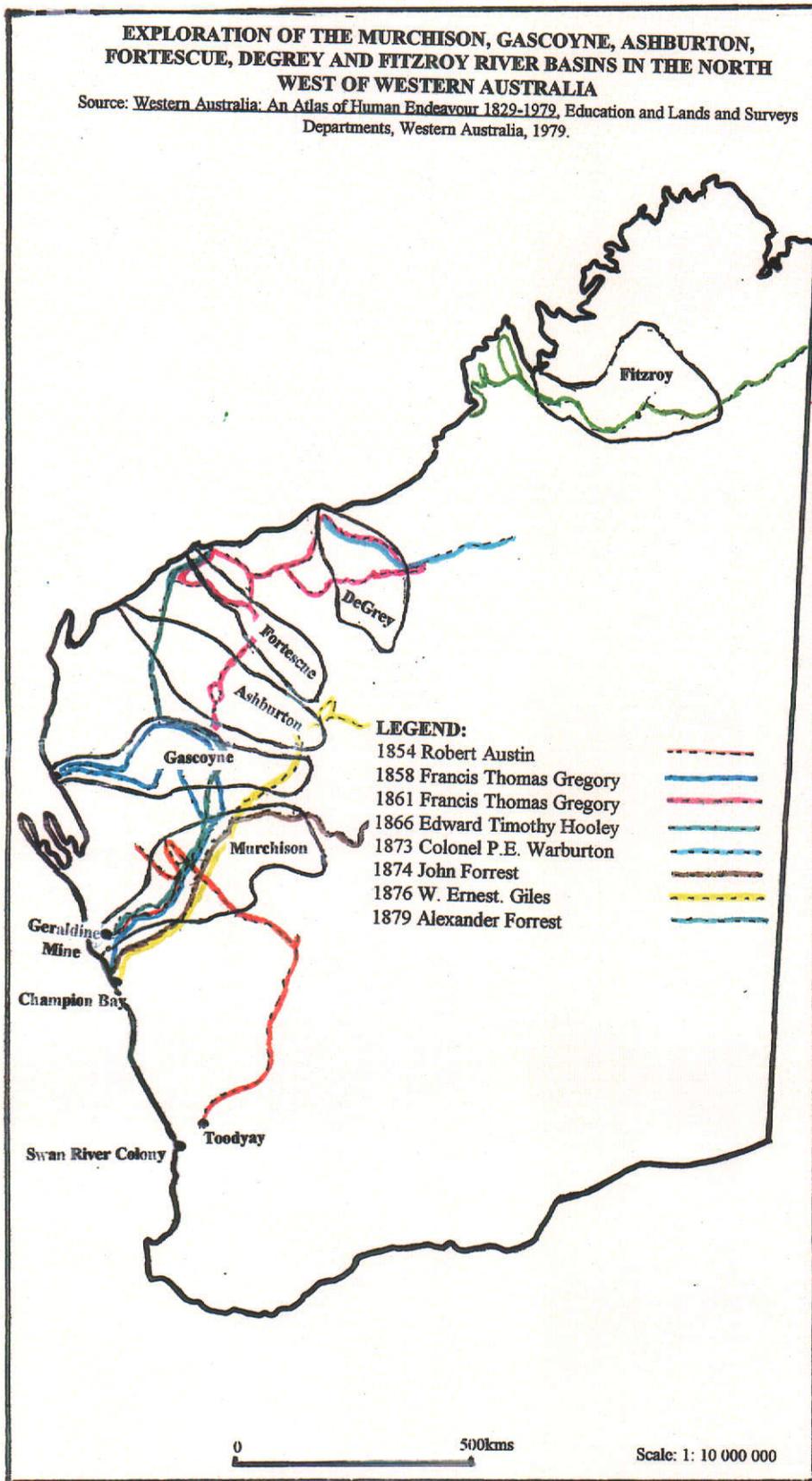


FIGURE 4.2

based on the idea of agriculture following pastoral occupation acted as a deterrent to opening up these new grazing lands, and the pastoralists were slow to move into the areas (Bain 1975).

In the following year the first pastoral lease was selected near the mouth of the Murchison River by Charles Von Bibra (Figure 4.3). The leases were eventually to form the nucleus of Murchison House Station where Von Bibra bred

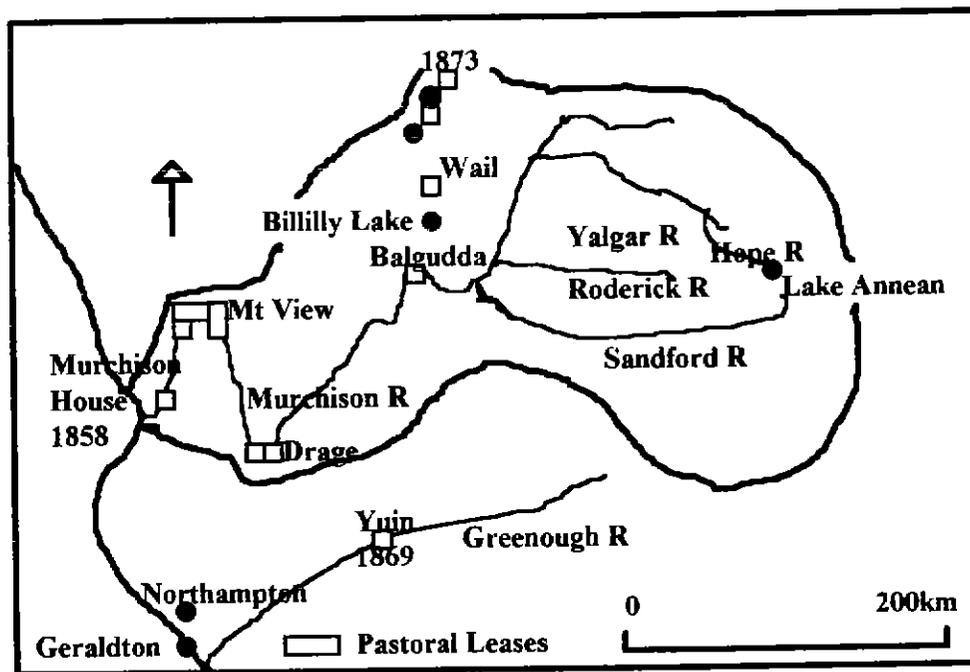


Figure 4.3: The first leases in the Murchison basin 1858-1860.

Arab stallions for the British Army in India. The animals constituted an important export for the small colony at that time. Other leases were selected surrounding Murchison House as outstations for stock for the Bowes River pastoralists. These leases were soon relinquished, however, and incorporated into Murchison House (Kalbarri Townscape Committee 1995). Eventually additional leases followed along the river with the Drage brothers on Mount View further north on the river's large bend, then south and north-eastwards following the river across the forbidding sandplain to develop Balgudda on the Yallalonga Springs within the river, and Weal (later spelt Wail) on the Billilly Lake system (Barndon 1996b). Further north were blocks on a series of pools that were taken up by York's John Monger, and Woodley and Gooch, both later of the Gascoyne. These were eventually developed as Muggon Station (Maitland 1907). The blocks linked the Murchison River with the Wooramel River in the north and were later developed as an important route to and

from the Gascoyne. Shepherds annually drove their flocks of about 1000 sheep from their outcamps in this region to Northampton for depasturing in the summer months and for shearing, thus alleviating the difficulties of carting wool. Their tracks developed into a localised stock route (Barndon 1996b).

4.3 Exploration of the Pilbara: the Fortescue and Degrey Basins

As the selection of leases in the lower Murchison basin was taking place, events occurred that opened up further land to pastoralism. Many of the colonists believed that the Pilbara might offer better rewards than the overstocked South West. Furthermore, colonial-born sons required land and the new land regulations of 1860, devised to encourage land purchase and agricultural settlement in the South West affected established pastoralists, some of whom found their eight-year leases reduced to one-year leases, with no compensation for improvements upon resumption (Tyman 1976). Under such stringencies, graziers were quick to lobby the reluctant Colonial Government for further exploration (Bain 1975). Events also occurred in Great Britain that generated further interest, where the cotton textile industry was in the doldrums due to the Civil War in the United States. The advancement of science also demanded new botanical and geographical data of unexplored regions (McLaren 1996). As the explorers commenced to move into the North West the British Crown, always with emphasis on the rights of the native inhabitants in its colonies around the world, issued a mandate from the Isle of Wight on the 5th of March 1861, urging the promotion of religion, education and the protection of the Aborigines. In the struggle for the rangeland's resources in all river basins, the edict, issued from such a great distance and not enforced by a remote government, was largely ignored (Forrest 1996).

In 1860 Francis Gregory relinquished his service pay to encourage joint funding from the British and Colonial governments and, with the best wishes from the Royal Geographical Society, prepared an expedition to explore the North West (Webb 1983). Horses and equipment were provided by the hopeful Champion Bay leaseholders. To avoid the dry sandplains west of Mount Gould, which Gregory labelled the Murchison-Gascoyne barrier, the expedition left Champion Bay in Captain Pemberton Walcott's *Dolphin* for Nickol Bay in early 1861. With Gregory were 17-year old colonial-born Maitland Brown, Edmund Brockman, John McCourt and James Harding (Richardson 1928). The exploration was divided into two sections, with the first conducted south of Nickol Bay, across the Hamersley Range to the Tropic of

Capricorn, crossing the Fortescue and Ashburton basins. The second exploration from Nickol Bay took in the DeGrey basin to the north (Figure 4.2) (Gregory 1863).

During the southern exploration from Nickol Bay Gregory discovered and named the Fortescue River. The area where numerous springs were found in its lower reaches he named Millstream. Numerous other springs were found in the Fortescue's tributaries. Of importance was Gregory's favourable report on the grasses in the valleys of the Hamersley Range, and the open level valley that was covered with good grasses in the central Ashburton basin. The valley he reported as hemmed-in by stony barren hills. The hills, with sparse vegetation of stunted acacias and spinifex pastures were later known as the Bangemall Hills (Gregory 1863).

Gregory's second exploration from Nickol Bay was north into the Pilbara and eastwards to the Oakover River, travelling through the DeGrey basin. From there he traversed out into the desert country in the hope of locating an inland drainage system, whose purported existence formed the basis of a popular theory at the time. On his journey he named many topographical features and rivers, including the Yule and Strelley Rivers in the Pilbara, and in the DeGrey basin the Shaw, Oakover, and DeGrey rivers. The party also encountered several springs in the ranges. Gregory reported on the rich grassy plains adjacent to some of the rivers and the harsh hakea and triodia covering the open and sandy Abydos Plains. Gregory considered the coastal grass plains of the DeGrey of a quality suitable for pastoral and agricultural purposes, particularly cotton production, thus providing encouraging information for those who had funded him. For this reason he named the river after a nobleman who took a great interest in the expedition. At the time the extensive grass plains surrounding the Oakover near its junction with the Nullagine and the DeGrey Rivers were covered with waving white grasses (Gregory 1863). Gregory failed to realise, however, that the DeGrey and the Oakover were the one river (Studham 1999).

Whilst traversing the desert east of the Oakover, Gregory observed that the steep sand dunes continued across the horizon with little hope of any drainage system being present. On the trek back to the Oakover and almost at death's door from starvation and thirst, he sent the experienced bushman Maitland Brown ahead to bring back supplies from their last established depot near the Nullagine River. Brown safely returned to the party with the necessary victuals (Gregory 1884). Important to the settlers who followed Gregory were the five months that Captain Pemberton

Walcott spent at Nickol, Bay waiting for Gregory and his team to return. Walcott collected numerous pearl shells and pearls, which enabled the founding of an industry that helped the pastoralists finance the development of their leases (Gregory 1863).

4.4 The Creation of the North District and Its Relevant Land Regulations

After Gregory's report was published, the North and East Districts of Western Australia came into operation on the 1st of January 1863, after the publication of the land regulations on the 23rd of December 1862 in the Government Gazette. The North District comprised all the land north of the Murchison River and of an east-west line passing near the present mining centre of Meekatharra, while the East District lay east of a north-south line passing near the present mining centre of Menzies. Lands in these two districts were divided into Class A and Class C lands. Class A lands were within two miles (3.2km) of the coast, and were only available on annual licence, but Class C lands could be leased for eight years. Settlers were offered free pasturage for 12 months, when they were expected to select up to 40 470ha (100 000 acres). Their chosen leases could then be occupied rent-free for the next three years, before the eight-year lease period and its associated rents commenced. In the river basins involved in this study all the left bank lands of the lower Murchison and the valleys of the Roderick and Sanford Rivers, and all of the other basins, constituted Class C lands (Government Gazette 23 December 1862).

Such liberal provisions inspired a few settlers from the South West, as well as from the eastern colonies, to hasten to obtain land in the newly declared North District. Their leased blocks were converted into neat rectangles by the Perth-based officers of DL&S. Failing to conform with the natural geography of the landscape, they were later to cause the few surveyors of the Colony many trials and tribulations (Johnson 1962). Land selection was slow after the initial start, no doubt due to the distance and the exorbitant cost of relocating a pastoral industry.

The change from colonial administration to a partly representative Legislative Council in 1870 revived the South West pastoralists' hopes that the incentive needed to further develop the colony's North West would eventuate. By this time, some leases had either changed hands or been abandoned. In 1875 the Torrens system of registering land titles was introduced. It was a simple method of registering the title deed on which was recorded the transfers, ownerships, mortgages and liabilities of land in fee simple. Regarding leased Crown land, Section 57 of the Act provided the right to transfer leases. It revolutionised the pastoral landscape by

providing flexibility in lease ownership, as well as allowing prospective station-buyers to see the encumbrances on the leases. The system also meant that leases had to be surveyed for their boundary alignment (Transfer of Land Act, 1874) Three years later, a new set of regulations classified North District lands as second class, and made them available on 14-year leases in blocks of 8094ha (20 000 acres), at an annual rental of £5 each for the first seven years, and £10 for the remainder of the lease (Battye 1912). In 1887, to further encourage settlers to develop their properties, and no doubt entice newcomers to the unsettled regions, leases were granted for a 21-year period, with all leases terminating on 31 December 1907. The North District was also divided into the Gascoyne, which incorporated the Murchison and part of Ashburton basins, and the North West, incorporating the Fortescue and DeGrey basins (Tyman 1976). The Kimberley retained its own identity, as per explorer Alexander Forrest in 1879. Its land regulations are discussed below. Annual rentals in the Gascoyne region increased from 10s.0d per 404ha (1000 acres) in the first seven years, to 12s 6d in the second seven years, and 15s.0d in the third. Rentals in the rest of the North West and Kimberley increased somewhat more steeply, from 10s.0d in the first seven years to 15s.0d. In the Fitzroy basin, rentals were halved if the land was stocked (Battye 1985).

4.5 The Second Push into the Northern Regions, Settlers, Explorers and Drovers: First Pastoral Enterprises in the North West River Basins

The first man to apply for leases in the North District was Walter Padbury, a prominent Guildford businessman, and experienced Victoria District grassman (McConnell et al 1993). Padbury requested special concessions to take up land on the unknown DeGrey River (Figure 4.4), which were granted in January 1863,

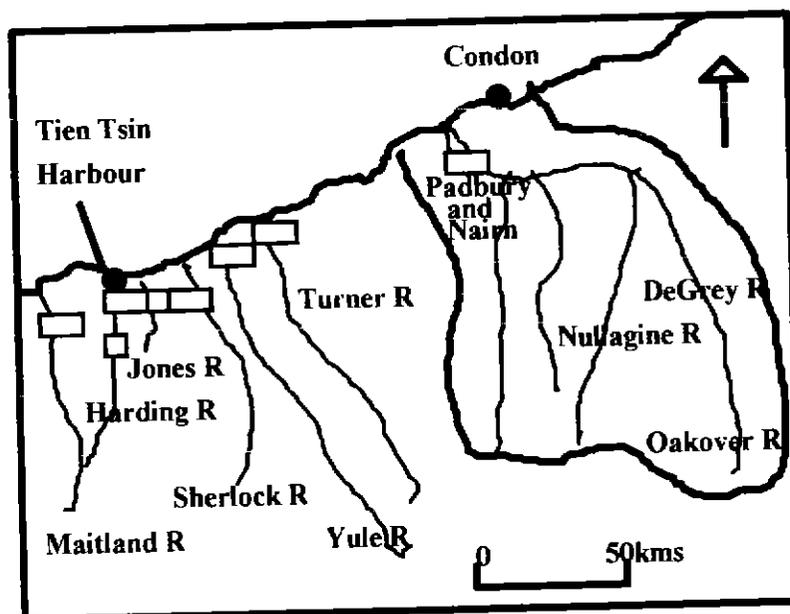


Figure 4.4: The first leases in the Pilbara and DeGrey basin 1864-1872.

immediately after the proclamation of the new land regulations (Nairn 1928). Padbury had quickly organised his manager and relative Charles Nairn with the necessary stock and equipment. Nairn left Tien Tsin Harbour (later Cossack) on the 24th of April 1863, to begin a 260-kilometre pioneer walk with 600 sheep, some horses and the necessary equipment to set up a station in the DeGrey basin (Nairn 1985). Having the honour of being the first to arrive in the North District, Nairn selected the well-grassed Mitchell grass plains on the west bank of the DeGrey River opposite Ripon Island for Padbury's station. Padbury was allotted 81 000ha (200 000 acres) of this land which was registered in May 1865. Nairn also took up 40 470ha (100 000 acres) adjacent to Padbury's leases (Taylor 1987). At the time Nairn described the DeGrey Aborigines as non-threatening and of strong athletic physique (Nairn 1928).

Others quickly followed Nairn, but were not to settle the isolated DeGrey basin, as no doubt the distance to the port facilities at Tien Tsin Harbour deterred further settlement there. In August 1863 John Wellard arrived at Tien Tsin Harbour with William Shakespeare Hall as his manager, several other European men, 370 sheep, 26 cattle and nine horses to take up 41 000ha (100 000 acres) on the Harding River around a spot known as Gregory's Camp 49, a position obviously located in Gregory's report. Wellard, who called this place Chingi, held this lease for three years before he abandoned it due to drought that also affected the neighbouring Fortescue basin, and moved north to the Turner River. Hard times fell on Wellard and he sold his leases to the Burges brothers with the indomitable Lockier Clere as manager. The Withnell family were the third settlers to arrive, leaving the Beverley district in May 1864 to take up land on the Harding River at Yeera-muk-a-doo Pool. The station was named Mount Welcome. Others hastened to select leases, mostly on paper, including Maitland Brown and his brothers. However, the properties remained unstocked and most of them were forfeited by the end of 1868 (Taylor 1987). The Scottish McKay brothers arrived later, taking up land first on the Maitland River, named in honour of Maitland Brown, until a drought-breaking 1872 cyclone wiped out their buildings and most of the livestock, and then on a large waterhole near the mouth of the Yule River (Hardie 1988). These first leases provided the impetus for the settlers to explore, that furthered the spread of the pastoral industry into the river basins.

News of good grazing land reached the colony of Victoria and, regardless of the lack of knowledge of the rangeland potential and of its distance from settled areas, eager settlers of old squatter families, forced out by the insecurity of

pastoral tenure and the push for agricultural development, badgered the Colonial Secretary's office in Perth for permission to go north. A number, with limited knowledge and a poor perception of the newly-opened land, had ample capital and some expertise. William Harvey, secretary and treasurer of the Camden Harbour Pastoral Association of Melbourne, wrote to the Colonial Secretary in 1864, requesting permission for the company to take up land around Camden Harbour and Roebuck Bay, a thousand or more kilometres north in the Kimberley from Gregory's 1861 explored area (ACC 3/6, CSR 534: 169-223). In mid-November of that year a shipload of settlers including Edward Timothy Hooley and Alexander McRae, left Melbourne for Camden Harbour (Forrest 1996).

The failure of the project resulted in these settlers returning to Tien Tsin Harbour with the Camden Harbour Resident Magistrate Robert Sholl and forty-two others. On hearing of the Camden Harbour disaster in Fremantle, a second group, the Denison Plains Pastoral Company under the leadership of Charles E. Broadhurst, decided on settlement at Nickol Bay and promptly sailed northwards to Tien Tsin Harbour. Theirs was a wise choice, as their initially proposed Denison Plains country was some 100 kilometres south-east of the future mining settlement of Halls Creek in the Kimberley. A third family of squatters from Victoria's Western District, Alexander Edwin Anderson, McKenzie Grant, John Edgar, Alexander Robert and John Elliott Richardson, operating as the Portland Squatting Company, applied for land, chartered a ship and travelled with their sheep to Tien Tsin Harbour in 1865. These settlers were to have a powerful influence in the exploration and the development of leases in the Fortescue, Ashburton and DeGrey basins. It was Alexander Anderson and McKenzie Grant who later took over the development of the DeGrey lease (O'Grady 1995). Despite the difficulties of travelling the large distances, the impression is one of a busy coastline as the grassmen moved up the coast and spread out into the hinterland in the ensuing years. The process of doing so left lasting imprints on the landscape that included stock routes and station tracks.

4.6 Exploration and Pastoral Enterprises in the Ashburton Basin

Several expeditions were conducted into the Fortescue and Ashburton basins during 1865 and 1866, including a government-authorised one, led by Roebourne's Resident Magistrate Sholl, which included Edward Hooley and others who were seeking land (Figure 4.5). The Hamersley Range was a formidable barrier and a deterrent to settlement in the hinterland of Roebourne until a way was found around it. The Ashburton basin was to be a troublesome region to settle also. As well

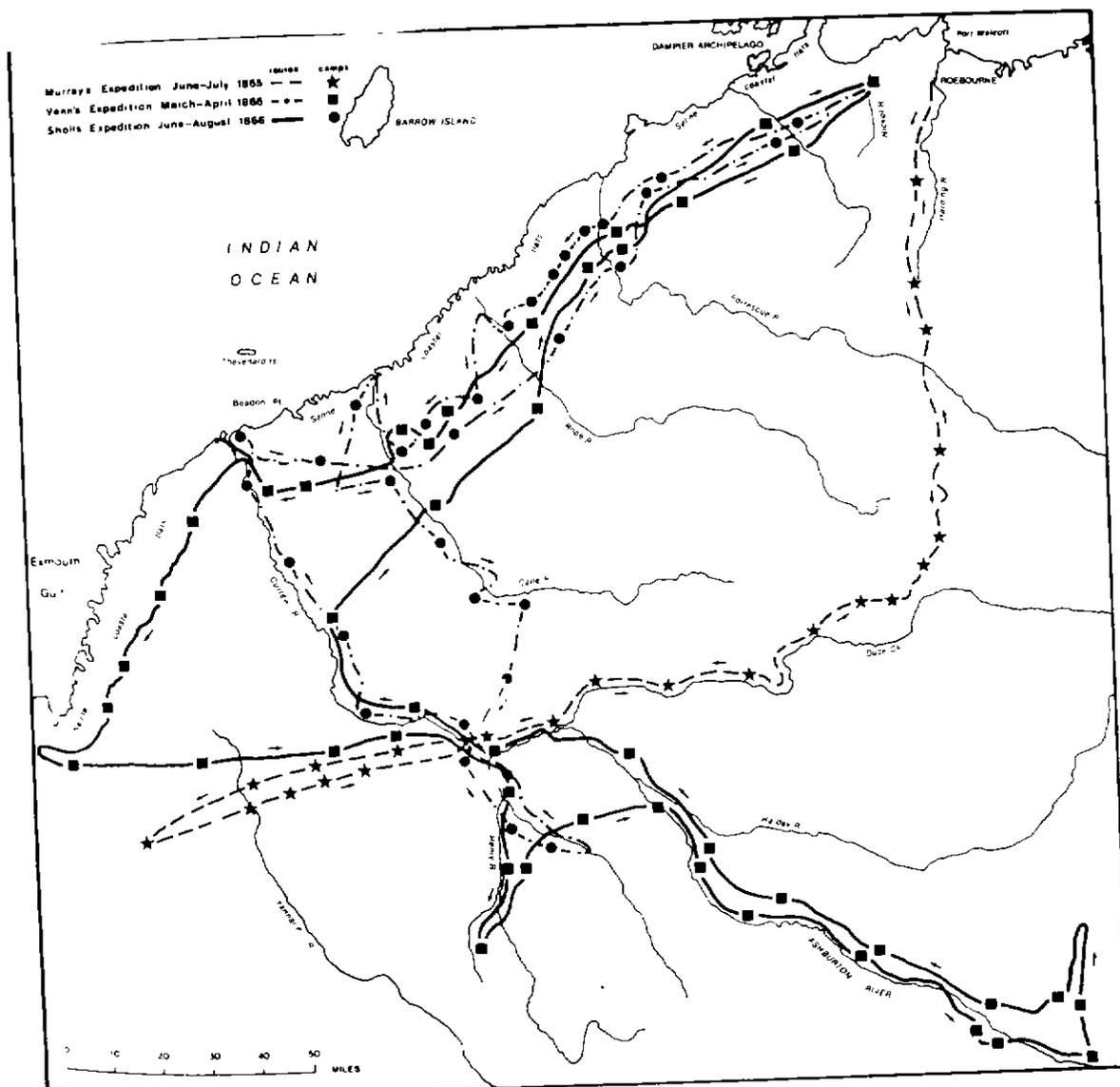


Figure 4.5: Exploration routes of Sholl and the Victorians. Source Webb 1983.

as the shortage of surface water in that region, hostile Aborigines who possibly had heard from their trading contacts of the coming intruders, exacerbated the problems of lease selection and development.

The first free leases of 40 470ha (100 000 acres) each in the Ashburton region were allotted to Victorians David Edgar, John B Fitzgerald and Alexander McKay who applied in July 1866. Hooley's grant followed. Subsequently there was a general rush by others to obtain land along the better-watered northern half of the Ashburton basin, including Lockier Burges, and Throssell and Bresnahan, who selected land that was later Ashburton Downs Station (Figure 4.6) (Webb 1983).

The first to stock land, with 1025 sheep, albeit unsuccessfully, in the Ashburton basin was Hooley with a government grant of a 40 470ha (100 000 acres)

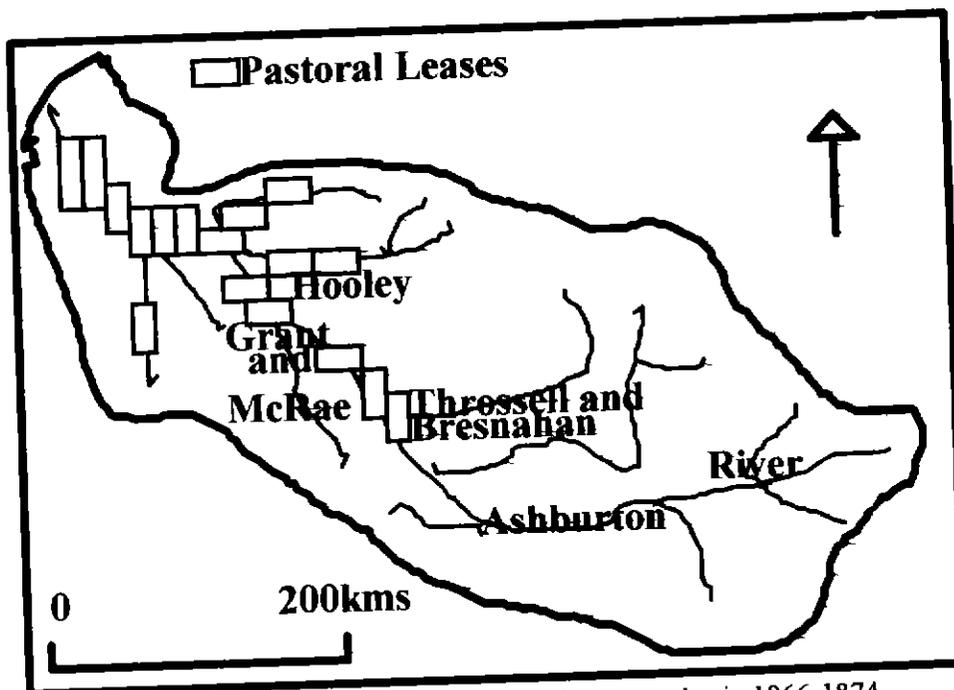


Figure 4.6: The earliest leases in the Ashburton basin 1866-1874

on the Henry River, a tributary of the Ashburton. His grant was for 15 years rent-free as a reward for an epic droving trip accompanied by the now well-travelled and experienced bushman Lockier Burges. The party left the Geraldine Mine in 1866 and drove nearly 2000 sheep through the empty Murchison and Gascoyne basins to Roebourne. (Webb 1983). Hooley's selected route followed part of Gregory's 1861 trek and became the basis of a later gazetted stock route (Forrest 1996).

Hooley, seeking better pastures, then requested a change of location and moved to Duck Creek. On the proceeds of gathered pearl shell, he returned to Victoria to bring his family back to the station, which gave his wife the distinction of being the first white woman in the Ashburton basin. After the Aborigines proved troublesome with lighting fires, spearing stock, pilfering camps and killing three of Hooley's men, however, the station was abandoned in 1869 (Sharpe 1985). It was taken up again eight years later by the Forrest brothers, John, Alexander, David and Matthew, in 1877 and given the Aboriginal name for the area, Minderoo (Forrest 1996). However, by 1871, and again in 1874, most of the four-year leases in the Ashburton basin had lapsed and were not renewed due to the aggressiveness of the Aborigines. Exceptions were Throssell and Bresnahan's leases and those of Grant and McRae (Webb 1983).

4.7 Pastoral Enterprises in the Fortescue Basin

In the Fortescue basin during the late 1860s various leases that were later incorporated into the development of Millstream Station were taken up by members of the Portland Squatting Company from Victoria, McKenzie Grant, George and Alfred Howlett, Kenneth McLean and Horace Hicks. Alexander McRae and T McKenzie, also from Victoria, took up the leases surrounding the Millstream Springs. McRae and McKenzie depastured 400 horses, about 8000 sheep and 300 head of cattle on their leases (Sharpe 1979). Near the mouth of the Fortescue River 40 470ha (100 000 acres) were taken up by David Simpson and McIntosh from Scotland. They ran sheep, cattle and horses. These leases later became Mardie Station. After Simpson's untimely death on the Ashburton River in 1886, the leases were taken over by the Pinjarra-based Murray Squatting Company (MSC), which also held Yeeda Station at the Fitzroy River mouth (Webb 1983, Clement 1991). In the vicinity of the Fortescue River's large marsh, McKay had taken up land which was eventually incorporated into the Roy Hill lease. Another Hooley, possibly a relative of Timothy, applied on his behalf for 40 470ha (100 000 acres) near the Fortescue River, which later was developed as Hooley Station (Webb 1983). The Wittenoom brothers of the Murchison basin had selected leases in 1881 below the marsh which were developed as Mulga Downs (Figure 4.7) (Cranfield 1962).

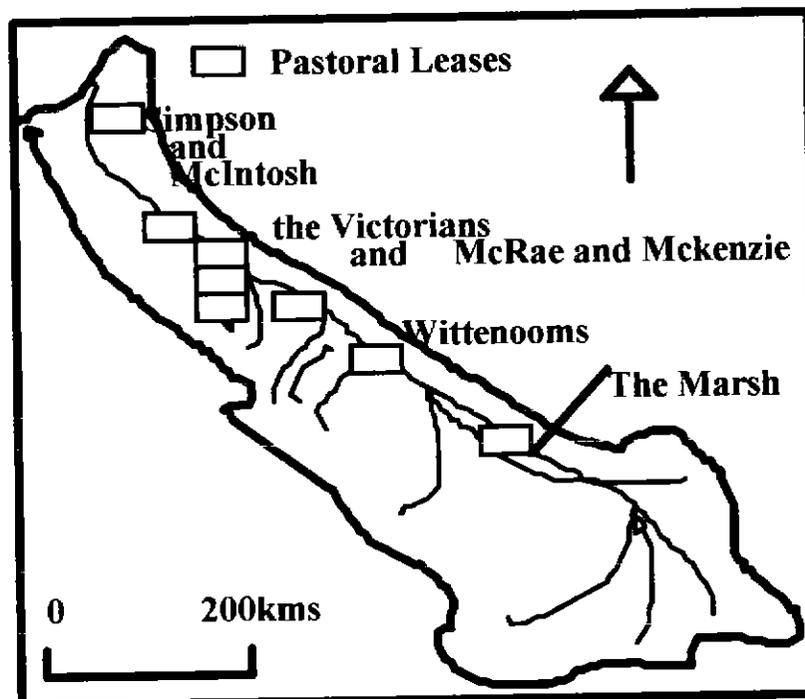


Figure 4.7: The earliest leases in the Fortescue basin 1866-1886.

4.8 Settlement at Shark Bay

Other settlers were developing leases on the coast at Shark Bay, where pearling was to provide the capital that aided lease development, both there and in the Gascoyne basin. Furthermore, tracks that were followed south and north of Shark Bay would later constitute an official stock route. In 1864, Maitland Brown by now aged 20, had taken up leases on the peninsula which were developed as Carrarang Station (Figure 4.8) (ACC 3/6, 1864, CSR 534:1-3). According to Cowan (1988:64) Brown sailed on the *Flying Foam* in January with 165 sheep and two horses, plus stores. Shark Bay at the time was a busy shipping area, with vessels loaded with guano departing for many overseas ports and with frequent visits by American whalers. Despite the activity, none of the vessels' occupants had considered developing a pastoral enterprise. First Maitland then brother Aubrey were to develop the Shark Bay lease from their pearling proceeds in the area (Cowan 1988). Later in 1865 their brother Kenneth took up land further south and developed Tam-Ah-Lee (later Tamala) Station, bordering the northern boundary of Murchison House (Webb 1983). Maitland Brown and his brothers frequently journeyed overland to the Swan River, thus opening up a northern route to Hamelin Pool and the lower Gascoyne basin via Murchison House Station. Others seeking land used this track into the Gascoyne (Cowan 1988). The native wells on this route between Murchison House and Tamala were used by the travellers and later drovers for watering stock (Mallard, Bill 1997).

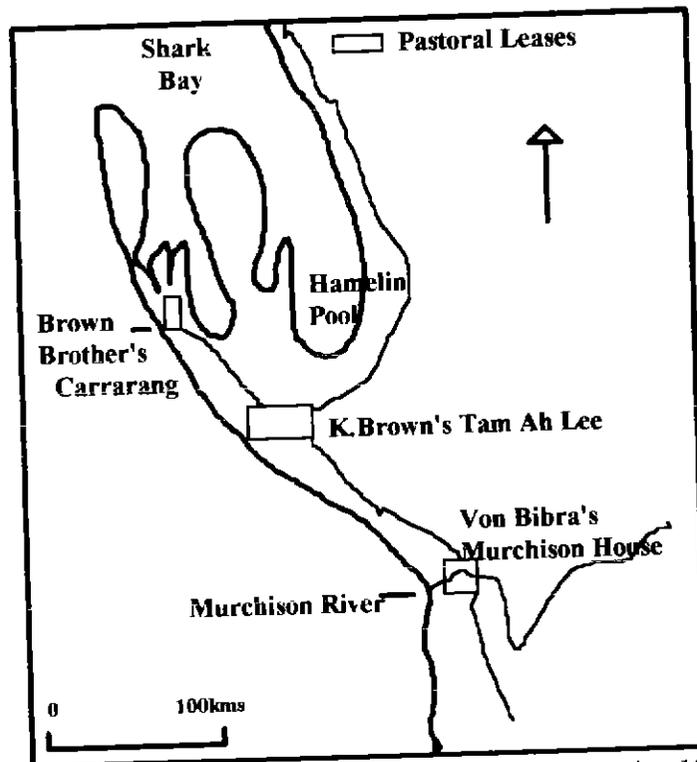


Figure 4.8: The Brown brothers' leases in the Shark Bay region 1864-1865.

4.9 Changes in the DeGrey Basin

In the DeGrey basin changes were taking place. After the death of Nairn in 1867 in the loss of the *Emma* during a cyclone, Padbury abandoned his interests there. In 1868 from his property Yatheroo in the Victoria District, Padbury sent one of his trusted workmen, Edward Roberts, to the DeGrey to bring back the 4000 head of sheep using Hooley's pioneered route (SROWA 1868, ACC 3303A, MN 1068). In 1869 the Portland Squatting Company partnership at Pyramid Station near Roebourne was dissolved. Two of its members Alexander Edwin Anderson and McKenzie Grant, were dissatisfied with the harsh North West conditions and commenced to drive their sheep south to Toodyay. Prevalent drought in the Fortescue basin however, forced the return north on the long and arduous trek to settle, unopposed, on Padbury and Nairn's leases in the empty DeGrey basin (O'Grady 1995). In 1871, Roebourne Resident Magistrate Sholl and his son Robert Frederick took up two leases on the DeGrey, which were later taken over by Charles Harper, prominent businessman and farmer from the South West and a recent partner with Grant and Anderson. These leases were merged with the DeGrey leases (Taylor 1987).

Distance to port facilities at Tien Tsin Harbour and lack of capital no doubt prevented the Sholls from developing a pastoral enterprise in the DeGrey. The Grant, Anderson and Harper partnership selected further leases along the river, and their settlement, which was the only one at that time, spread along the DeGrey and Oakover Rivers. The difficulties of distance and capital were to deter other settlers from lease-selection in the basin for a number of years.

The Grant, Anderson and Harper (later John Edgar) partnership was able to spread its leases up the Oakover as far as the locality of Running Waters (Figure 4.9). Its members had the capital and necessary expertise for transforming an Aboriginal landscape to a colonial European one. The leases were divided into Muccanoo in the eastern section running free range cattle, with the sheep enterprise in the western section known as DeGrey. North of the DeGrey River, outside the basin, the group developed Pardoo. A little west of Muccanoo and on the southern side of the DeGrey River they developed Mulyie. These stations ran sheep. Anderson was responsible for Muccanoo, while Edgar ran the DeGrey Station (O'Grady 1995). Whilst leases were being developed in the DeGrey basin, exploration continued that finally put to rest the myth of the inland sea. The exploration also facilitated further movement into the river basins.

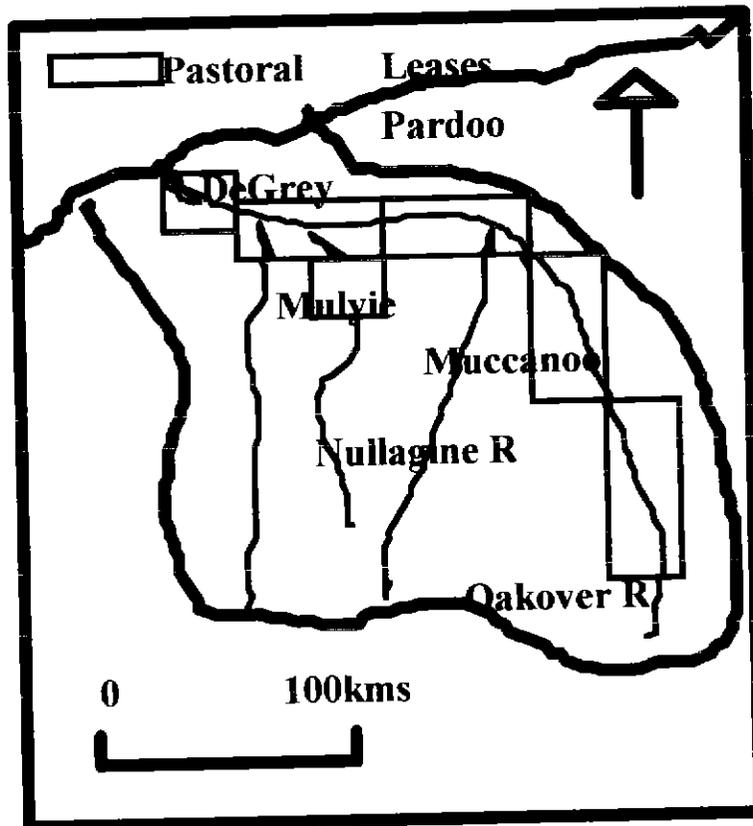


Figure 4.9: The Grant, Anderson and Harper leases in the DeGrey basin 1878

4.10 Further Exploration: An Impetus to Settling the Headwaters of the Basins

In 1873 Colonel Peter Egerton-Warburton and his team explored the desert and the eastern side of the DeGrey basin (Figure 4.2). Warburton branded a tree on the upper reaches of the Oakover River in the locality of the upper Muccanoo lease. At the time and similar to Gregory and his party, Warburton's expedition was in dire straits, without food and water. A team-mate and an Afghan rode the 270 kilometres to the DeGrey Station for help. It was during this waiting period that the river came down in a flood on the 20th December after heavy rains (Warburton 1875). This must have been the first-ever European recording of the Oakover in flood. Warburton later purchased the upper Muccanoo leases, well-grassed with spinifex and neverfail, from Grant, Anderson and Harper for his Braeside Station. The aridity and the hostile Aborigines, however, were to prove a prevention for development of the leases as a profitable enterprise (O'Grady 1995).

Further exploration was conducted by the Forrest brothers, who undertook additional expeditions after the fruitless search for Leichhardt (McLaren 1996). Their team left Geraldton in April 1874 and traversed the Murchison basin's

upper reaches, noting good grazing country (Bolton 1958). It was while in the central portion that the party ran into difficulties while seeking water. The local Aborigines, the Wadjeri, led them to a permanent spring at the base of a mass of uplifted sandstone, which they called Bia, later spelt Pia (Lawson 1997). As a result of this exploration, the Butcher brothers, Wittenoom family and George Joseph Gooch followed to take up leases (Nixon and Lefroy 1989). The country surrounding Pia Spring, however, was set aside as an 80 000-hectare, 100-year Aboriginal Reserve 297A (PLAP 1927) in 1885 on the recommendation of John Forrest, as a way of thanks (Lawson 1997). In 1876 Ernest Giles, using camels for the first time, traversed the eastern portion of the Gascoyne and Ashburton basins on his west-east expedition across the desert, thus providing a useful report of lush pastures in those arid regions (Webb 1983). Other leaseholders, however, ever watchful for good pasture and adequate surface water supplies, also conducted their own explorations.

4.11 Pastoral Expansion in the Murchison and Gascoyne Basins

Whilst these selectors were moving into the Gascoyne basin, settlers were selecting leases in the Murchison district during the 1870s. Experienced and genuine grassmen stayed to develop their leases into profitable holdings in this basin. Others, finding the environment hostile, sold out to more experienced men. By the 1880s, and prior to the introduction of wells and mills, the more congenial river frontages had been selected and pastoral enterprises established except in the arid and mostly unexplored headwaters of the river basins.

In the settling of the central region of the Murchison basin, comprising mostly mulga lands on hardpan soils, credit is also given to the shepherds with their Bowes River flocks from near Northampton. Yuin on the Greenough River was developed as an outstation in the 1860s by shepherds for the Burges Brothers from Bowes Station. From this stepping stone, other blocks followed and were grouped together on the Murchison River and its tributaries the Sandford, Roderick and Yalgar Rivers (Figure 4.10) (SROWA 1888, PWD 2135). Leaseholders followed their shepherds to these good pasture lands. John Perks, a shepherd for Burges, took up leases along the Roderick in 1873 that were developed as Boolardy, Michael Morrissey was the first to develop the north-western end of the future Woolgorong Station near the junction of the Murchison and Sandford, and James Nairn, whose leases were also part of the future Boolardy lease followed in 1874. The Butchers had taken up Berringarra by 1876, Thomas O'Grady was at Dalla near Muggon Station, Lockier Burges, always on the move to select good land, had Innuoendy in the headwaters of

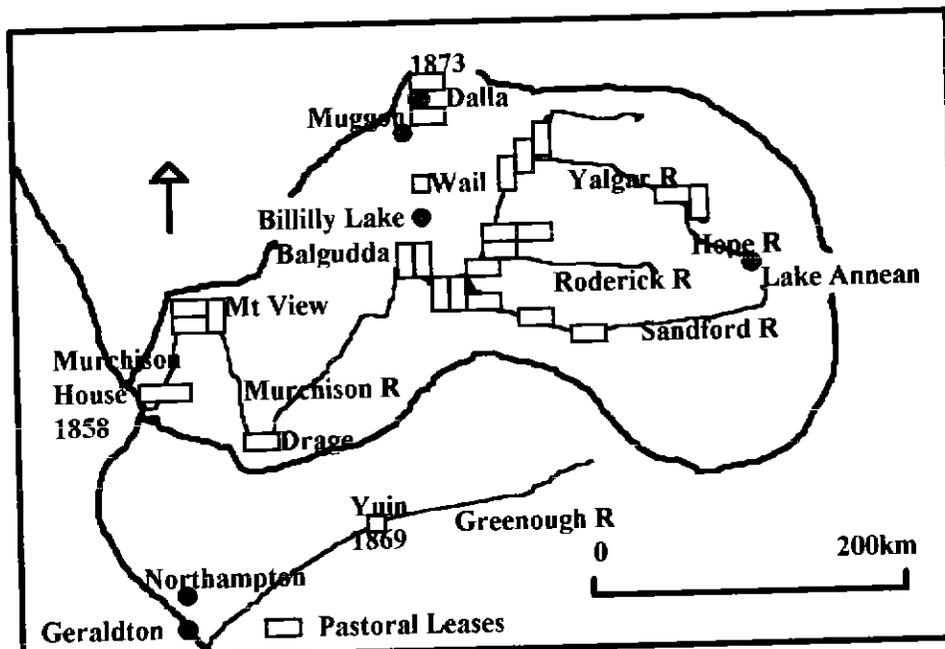


Figure 4.10: The spreading of leases in the Murchison basin 1873-1882.

the Wooramel in 1877, the Ryan brothers were developing New Forrest, a neighbour to Balgudda, and in 1878 J. Aitkins had taken up the future Milly Milly (Nixon and Lefroy 1989).

The upper reaches of the Murchison basin were occupied by the grassmen moving north from Yuin Station also (Figure 4.10). Burges sold Yuin in 1874 to his cousins Edward and Frederick Wittenoom, who commenced further developments of the lease with 15 000 sheep (Cranfield 1962). Purchasing Yuin helped the Wittenooms pioneer the upper reaches of the Murchison River, with the establishment of Murgoo and Mount Wittenoom Stations on the Sandford in 1873 and, in partnership with their uncle Thomas Burges, the Nookawarra and Mileura blocks in 1875 for cattle operations on the wanderrie grass plains (Nixon and Lefroy 1989). Their development of Belele Station, on the Yalgar and Hope Rivers followed, its name taken from a waterhole in the Hope River (Cranfield 1962). In 1880 the Butchers sold Berringarra to the Campbell brothers of New Zealand. They in turn sold the leases to the Darlot brothers in 1882 (Nixon and Lefroy 1989). Throughout the settling of the Murchison basin, sites selected for the shepherds' camps, and later followed by the homesteads, were where the water was fresh and plentiful in waterholes and in shallow wells within close proximity to the river plains (Figure 4.11) (Curry et al 1994). The same process occurred in the other river basins.

In the same way that the Victoria District was a stepping-off point for the central Murchison basin, the Murchison in turn was a necessary stepping-stone to the coastal and central Gascoyne. First into the Gascoyne in 1876 were Charles Samuel and John Brockman who drove 3600 sheep through the Murchison then down the central Gascoyne region to the river mouth, passing Aubrey Brown and John Henry Monger on the way. Brown and Monger, operating as the Mungarraah Squatting Company, overlanded 4000 merino sheep in July 1876 to settle on 8094ha (20 000 acres). Later developed as Brick House Station, their property was located around Brown Range on the good saltbush pastures adjacent to the left bank of the Gascoyne River not far from its mouth (Figure 4.11). Brockman, being the first to arrive,

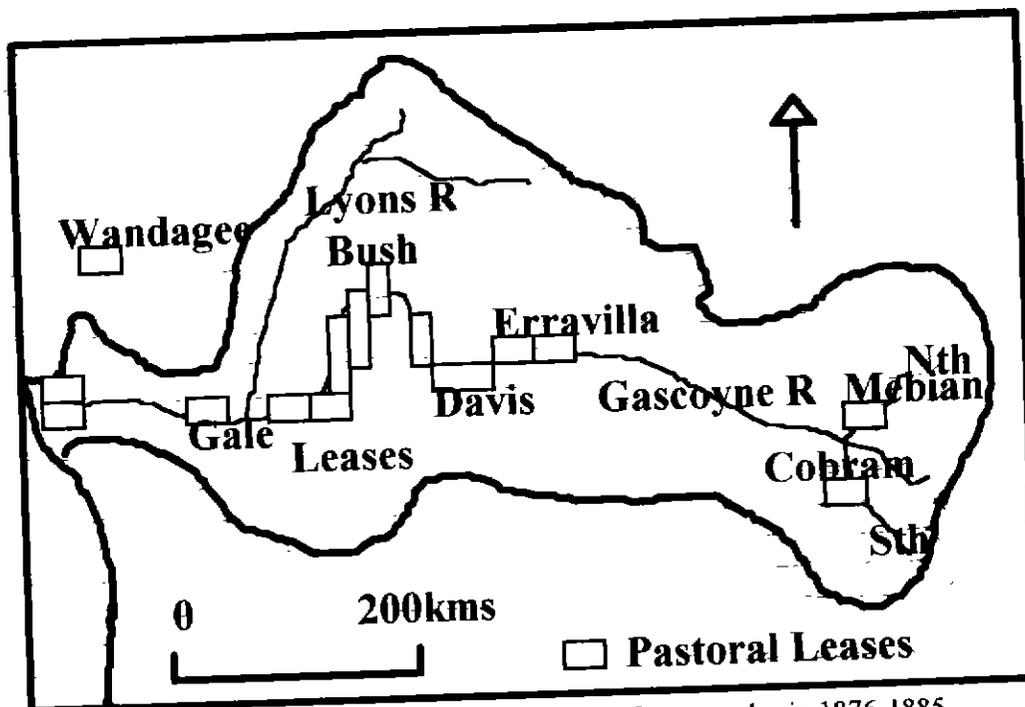


Figure 4.11: The spreading of leases in the Gascoyne basin 1876-1885.

constructed sheep yards for Brown. Meanwhile, Robert Campbell and George Hamersley rode in along the sandy track from Shark Bay seeking good land which they were to take up outside the basin. After Brown's arrival Brockman and Hamersley explored north to North West Cape (Memory 1967). On Brockman's return, and with partner Charlie Fane, he developed 16 200ha (40 000 acres) on the right bank of the Gascoyne River, Boolathanna Station, which was officially issued on the 16th of May 1878 (Payne et al 1987). Brockman's drover Charles Thomas Wheelock was engaged by Gale and McNeil to guide them to their acquired leases further up the Gascoyne River on the wanderrri grasses at Doorawarra. He then went into partnership with

George Joseph Gooch and established Wandagee outside the Gascoyne basin (Memory 1967).

In 1879, British-born jackaroo Robert Edwin Bush organized his own expedition to explore the Gascoyne basin. It left Murgoo Station in the Murchison on the 23rd of October, when Alexander Forrest's expedition was exploring the Kimberleys, and travelled to Brockman's Boolathanna Station on the coast near the river's mouth. Their object was to find a suitable port or landing for transferring wool and stock to the markets. They then followed the Gascoyne River inland, stopping briefly at Gale's Doorrawarra lease on the way. As a result of his exploration Bush took up huge areas of excellent, well-grassed land along the Gascoyne and Lyons river frontages in the central Gascoyne basin, which later became the Bidgiemia, Lower Clifton Downs and Upper Clifton Downs Stations. By that time others had selected leases in the vicinity. Jeffrey Davis from the Murchison had a small lease named Mount Clere near the junction of the Landor and Gascoyne Rivers, and 160 kilometres further eastwards, Robert and Hugh O'Grady were developing Erravilla near the topographical feature of Mount Clere itself (McDonald 1991). It appears that, after a pool in the Gascoyne dried up, Davis relinquished his Mount Clere Station lease, and the name was later applied to a lease in the vicinity of the mount itself.

Apart from a few hardy individuals, pastoralists were slow to settle the remote, drier regions of the headwaters of the rivers. The goldrushes and World War I aided further settlement in these areas. The pastoralists themselves followed the earlier explorers of the Gascoyne basin headwaters as they sought more land. In 1885 Richard John Carlyon and Frank Wittenoom of the Murchison commenced the development of Mebian Station, a cattle enterprise on the mulga and cotton bush rangeland, which was situated on the Gascoyne River North Branch adjacent to Yaladthalgo Pool at the arid eastern end of the basin (Cranfield 1962). Carlyon constructed a small well and a camp on the banks of the Gascoyne River North Branch near its junction with the river's main channel, with access to the permanent spring at Yaladthalgo Pool (Field Trip 1996). Ernest Lee-Steere, who had purchased the partially developed Belele from Burges the same year, explored the Murchison district in the late 1880s between the future mining settlements of Yalgoo and Paynes Find. He then moved north, exploring the headwaters of the Gascoyne basin and finally selecting land on the Gascoyne River South Branch (Lee-Steere 1996). Lee-Steere was credited with developing these leases into Cobram Horse Station, to rear horses for the Indian Army (Garrity 1996). These leases were later amalgamated into Three Rivers Station.

Within 20 years of settlement, most of the rivers and creeks in the basins had been taken up and leases were being developed into profitable units. The process of settlement in the North West could not be classed as a land rush, due to the distance involved from the more southern settled areas. It was after the exploration of the Kimberley, which included the Fitzroy basin, that a land rush actually occurred.

4.12 The Fourth Wave: The Fitzroy Basin and Land Jobbery

As the grassmen and others continued to take up leases in the river basins further south, exploration northward into the tropical zone was conducted, leading to the first genuine land rush since the beginning of pastoral expansion into the North West. In 1878 the Colonial Secretary of Western Australia, Roger Tuckfield Goldsworthy sought approval from the Legislative Council for an expedition to the Fitzroy basin, at an estimated cost of £800. Goldsworthy was certain that the lands were suitable for cattle and horse breeding, and perhaps even the production of tropical agricultural products such as tea, coffee, sugar, rice, tobacco and any other type of vegetable or fruit that could be grown in a similar manner to that attempted in Queensland. Alexander Forrest, a surveyor with 10 years' exploration of his native land under his belt, was given the task (Figure 4.2). His team arrived at DeGrey Station on the 22nd of February 1879 during a good season (Bolton 1958). When he arrived at Beagle Bay on the 20th of April 1879, a small pearling fleet was operating off the coast.

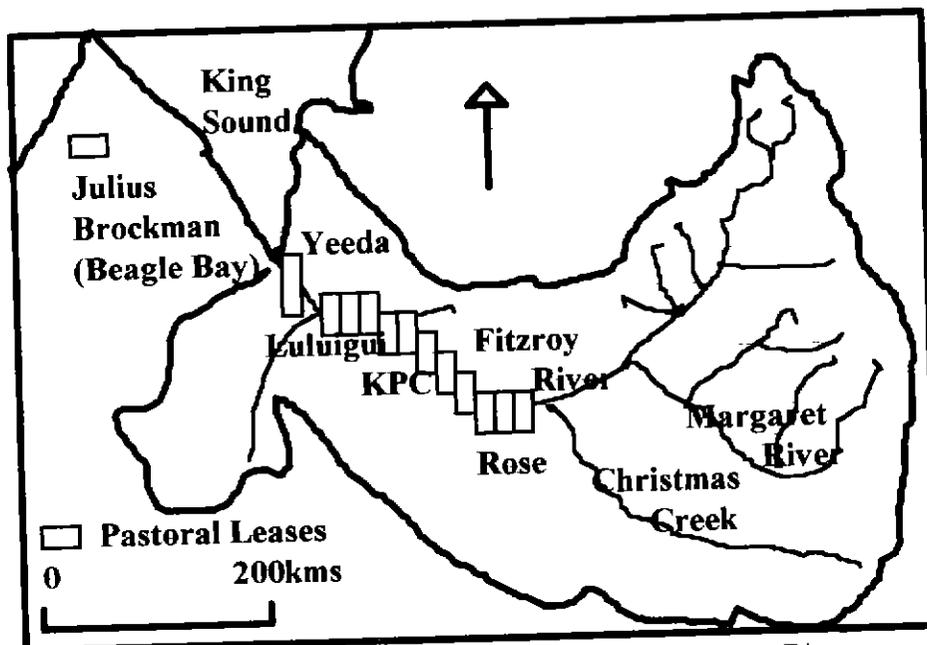


Figure 4.12: Some of the ribbon leases along the Fitzroy River with Brockman near Beagle Bay 1879-1881.

Forrest reported on the well-grassed cracking clays of the Fitzroy River floodplains. He named the King Leopold Ranges, and the new region the Kimberley, after the Earl of Kimberley, who was the Secretary of State for the Colonies. He also noted that insect life was abundant, which was an early indication of at least one difficulty that would affect agricultural development. Following Forrest's glowing report on the potential of the fertile lands of the Fitzroy Valley, which he telegraphed to Perth upon his arrival at Katherine Station in the future Northern Territory (Government Gazette 14 September 1879), a special set of regulations were framed in 1880 for their disposal and the new area named Kimberley (Tyman 1976). Pastoral leases were, for the most part, ribbon-shaped, with narrow frontages to the Fitzroy, where the Mitchell and other good grasses grew, and with a minimum area of 20 000ha (50 000 acres). Leases without river frontage could be as small as 8100ha (20 000 acres). In the bid to encourage arable agriculture, land was available for sale in lots of not less than 81ha (200 acres). Freehold was offered to the first person or company to produce tropical products (Government Gazette 14 September 1880). Nevertheless, as was the case with the other basins further south, agricultural implements were not part of the pastoralists' travel load. Leases were quickly selected up along the Fitzroy River from near its mouth as far inland as the future Fitzroy Crossing (Figure 4.12).

The land rush spread over two years. First off the mark after hearing of Forrest's telegram were Julius Brockman and Farquhar McRae of the Roebourne area. Brockman and McRae applied for 162 000ha (409 000 acres) on the southern side of the Fitzroy River prior to sailing from Cossack on the 16th of November 1879 with 300 sheep, nine horses, two pigs, two dogs, two Aboriginal shepherds and a general hand. Brockman landed at the pearling beach on Beagle Bay. He constructed a hut out of mangrove logs, and a small two-roomed homestead of corrugated iron. His was the first lease in the Kimberley. Of benefit to further land-seekers at a later date, Brockman's small station was used as a resting place for those travelling to the Fitzroy basin further east (Figure 4.12). By the second of January 1880, Brockman had explored as far east along the river as Mount Anderson, selecting the required acreage in the vicinity of the modern Luluigui. He paid the necessary fee and waited in vain for notification of the approval of his lease. His application, it appears, had fallen between decision-making pending the introduction of new regulations for the Kimberley. Brockman considered himself the victim of 'land-jobbism' operated by the influential John Forrest, William Edward Marmion and other members of the Legislative Council seeking lands (Brockman 1987).

Certainly Brockman had reason to complain. The Kimberley Pastoral Company (KPC) from the Pinjarra district was an early major player in the pastoral settlement of the Fitzroy basin. It had its origins in 1880 when, in a bid to exclude outsiders from selecting leases with a Fitzroy River frontage, several influential men formed a cartel to control a land allocation ballot conducted by the Western Australian Land Office. Its members, a number of whom were directly involved with the government of the day, included Minister for Lands and Mines William Edward Marmion (Clement 1991). A later member was Alexander Forrest (SROWA 1872-1935, ACC 4445A, MN149/2). Not surprisingly, the group was successful in securing the leases to the 40 470ha (100 000 acres) blocks in question. In 1879 also a group of relatives and friends of the members of the KPC formed the MSC which held Mardie Station in the Fortescue (Webb 1983, Clement 1991).

On the 12th of November 1881, some of the MSC members John and William McLarty and Anthony Cornish, left Fremantle on board the *Amur* loaded with a cargo of horses, cattle, sheep and provisions, to disembark on the mud flats at King Sound near the future port of Derby. As there was no fresh water at King Sound, the party moved their stock 32 kilometres south-east to Yeeda Creek, close to the Fitzroy River, while awaiting two further shipments of 4,400 sheep purchased from Millstream Station in the Fortescue basin. They took up 48 123ha (120 000 acres) near the Fitzroy River mouth, which were later developed as Yeeda Station. After the death of Anthony Cornish at the hands of the Aborigines at his brother's Yeeda homestead and the subsequent abandoning of the lease, the McLartys moved the sheep 96 kilometres inland along the Fitzroy River onto other blocks they held, leaving the cattle to graze near the abandoned lease. These blocks were developed into Luluigui Station (Clement 1991).

Others to be involved in family partnerships mostly associated with the KPC were the Rose family of Brunswick. In December 1882 George Candler Rose disembarked from the *Heather Bell* at Beagle Bay Station, with 1,750 sheep, 7 head of cattle and 12 horses (Brockman 1987). Rose also overlanded his stock to Yeeda Station (Clement 1991). Rose family members managed the company's leases, later Liveringa Station, and also developed the Mount Anderson, Quانبun Downs and Cherrubun leases on the Fitzroy River floodplains (Anderson 1997). Further settlers to develop leases in the basin were the overlanders, including the Emmanuel and McDonald families, who travelled across the continent from Queensland and down through the North Kimberley to settle on Christmas Creek (Durack 1967). Sheep were

were the important stock to run on the cracking clays of the Fitzroy River flood plains, however, with cattle depastured on the eastern savannas.

4.13 Patterns of Settlement

Figure 4.13 portrays the spread of the fledgling pastoral industry in the six river basins of the North West. As depicted, the pattern of lease selection was largely based upon the river frontages and their water resources. Penetration into the river basins occurred in four stages: from the Victoria District to the Murchison River mouth, by sea to Tien Tsin Harbour, and thence to the DeGrey, Fortescue and Ashburton, from the Victoria District again to the central Murchison, and thence into the Gascoyne, and by sea to the Fitzroy basin. The process of spreading up the river valleys and into the hinterland after the initial settlement, was based upon a series of stepping-stones at established bases from which the pastoralists could safely explore the rangelands. They entered the Murchison basin overland from the Victoria District, and from the Murchison leases moved into the central and lower Gascoyne. Those who landed at Tien Tsin Harbour explored southwards into the Ashburton and the Fortescue basins. Leases were slow to be developed in all headwaters except the Gascoyne and Murchison, due to aridity and suitable natural watering places, and distance to the southern markets. The Fitzroy basin was penetrated from the coast and it was some years before selection of land occurred on its headwaters, the King Leopold Ranges constituting a formidable barrier.

4.14 Conclusion

The process and patterns of settlement in the North West were at variance to some extent with other pastoral settlements of Australia because of the vast distance from the settled areas of the South West. Thus the early occupation of the Murchison, Gascoyne, Ashburton, Fortescue and DeGrey basins was spread for the most part over 20 years, with the isolated DeGrey virtually ignored. Even the rush to take up the much vaunted Fitzroy basin leases was slow. In addition, based on the explorers' reports and their own experiences, most settlers had an idea of the nature of the country available for a pastoral enterprise in the river basins. Land laws were more congenial for settlement, providing for the selection of adequate-sized leaseholds, which were later amalgamated into rectangular blocks to support a sustainable industry. Official hopes of agricultural enterprise along the Fitzroy River failed to eventuate, the cartel members and other settlers there immediately engaging in pastoral pursuits mostly involving sheep. For the very survival of the pastoral industry in the arid North West, the settling around permanent natural water supplies was of paramount

LEGEND

- 1 Champion Bay to the Murchison River mouth
- 2 By sea to Tien Tsin Harbour and the DeGrey, Fortescue and Ashburton basins
- 3 From the Victoria District to the central Murchison and Gascoyne basins
- 4 By sea to Beagle Bay and the Fitzroy basin

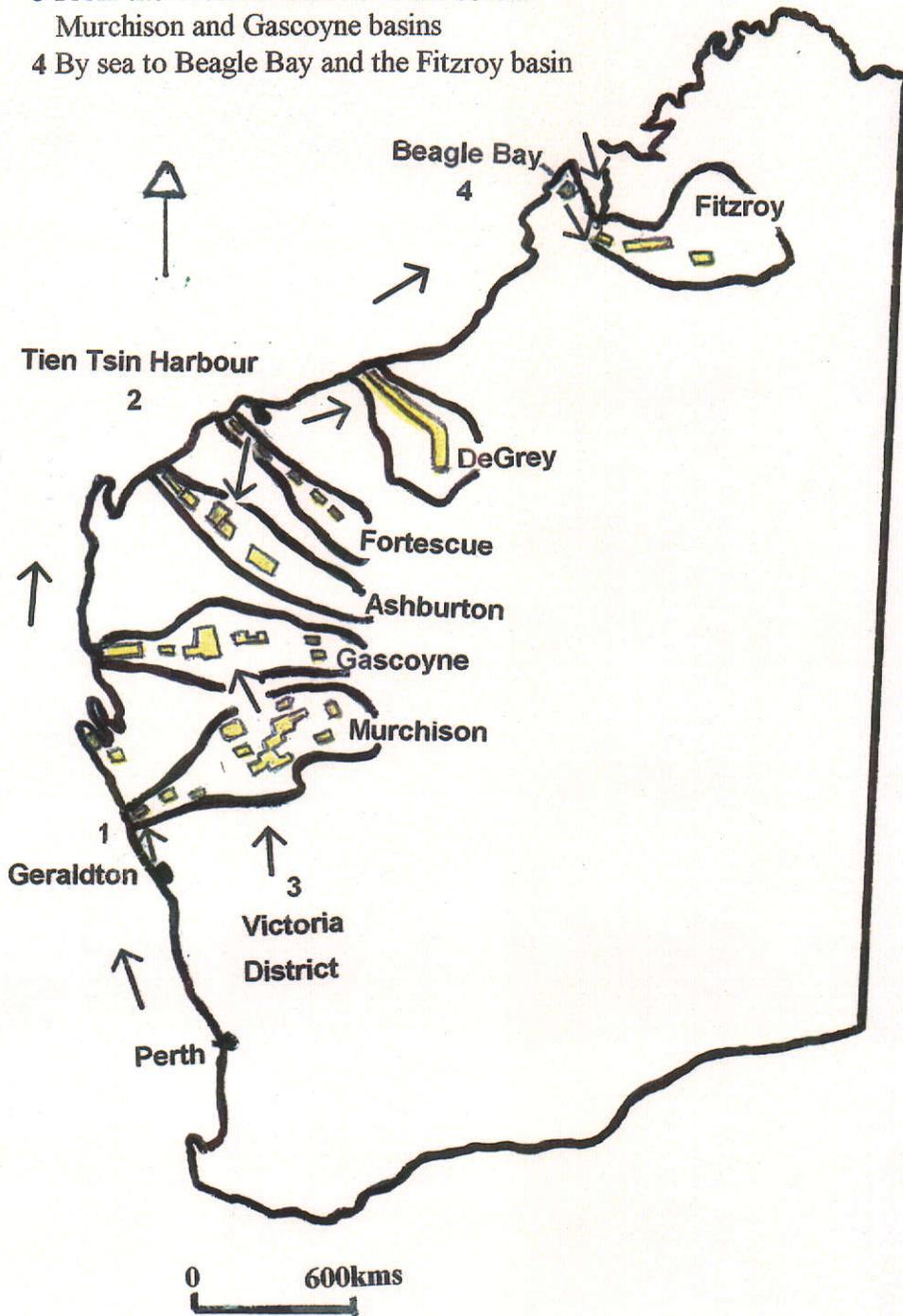


Figure 4.13: The process and patterns of settlement in the North West 1859-1865.

importance until the technology of windmills and fencing advanced. Rangeland management was in its infancy in the early evolving colonial landscape. While many of the early leases were soon abandoned by men who lacked the skills required of pastoral pioneering, the true grassmen of the Murchison, Gascoyne, Fortescue and DeGrey basins persisted, building successful enterprises despite many setbacks including climatic variability. The corporate leaseholders of the Fitzroy basin also remained, their family operators and managers unaware at the time that sheep would significantly damage the river frontages.

Chapter Five

Cultural Landscapes of the 1880s

5.1 Introduction

European modification of the environment of the river basins included the introduction of public infrastructure. The process of landscape change by Europeans, however, was not without problems. Analogous to the Warrego country (Heathcote 1965), such facilities were slow to eventuate and lagged far behind the moving settlers, who initially had to make their own arrangements. Dissimilar were the agricultural-oriented services of South Australia (Meinig 1965) and Victoria (Powell 1970) that were planned prior to settlement. Lease boundaries required surveying, and technological and communication advances were slow, hindering the processes of pastoral development. Further impediment was caused by a financially struggling government unable to afford desperately-needed public works. Isolated small ports provided limited shipping access, tracks were to remain as such and telegraph lines were slow to creep northwards. Other problems associated with the spread of grazing in the basins included the necessity to adapt traditional pastoral methods to an hostile environment of dry seasons and cyclones. Adaptation was essential as they encountered climatic vagaries and troublesome Aborigines, both of which posed a threat to the survival of the fledgling industry. The first European settlers responded to the little-known rangeland resources, variable climatic conditions and the indigenous population in a manner which initially, in some cases at least, generated adverse relationships with the environment and the Aborigines. As the industry developed in the river basins, it became necessary to curtail skirmishes between settlers and Aborigines, and police outposts were established. A new cultural landscape gradually evolved as the leaseholders used the resources of the rangelands, developed their stations, were provided with a limited array of infrastructure and services, and incorporated the Aborigines into the station work.

Technological development also enabled the efficient grassmen to spread away from the river plains and increase their stock numbers, not only to comply with the leasing requirements of the colonial government, but also to conduct a sustainable enterprise. In the process of geographical change, however, Aborigines also adapted as they were incorporated into, or confronted by, a new, more powerful, dominant people. The males took on the role as shepherds then later, after the introduction of wells, windmills and fences, as stockmen, drovers and station hands, while the women found a

new role as domestics in the station homesteads. In the Fitzroy basin, however, the introduction of wells, windmills and fencing was limited until the 1930s. As the North West settlers spread into the river basins however, their demands increased.

5.2 Surveys, Services, Settlement and Stock Routes

Influential colonial-born grassmen involved in the politics of the day after the formation of Representative Government in 1870, were the voices of the settlers in their districts. These young men understood the needs of the North West settlers and made demands for necessary services, though they were adept at improvisation to provide their own. In the Legislative Council 26-year old Maitland Brown represented the Gascoyne, Charles Harper the North West (Plate 5.1), and David Forrest, brother of John and Alexander of Minderoo Station, the Ashburton (Webb 1983). The vast distances



Plate 5.1: Maitland Brown and Charles Harper
Source: Cowan 1988, Biographical Register of MPs.

created problems for stock movement in both directions and for the receipt of goods and the all-important mail, which, outside their lease developments were the leaseholders' main concerns. In all the river basins there was a need for coastal towns with adequate shipping facilities. Unfortunately the river mouths where most of the ships called were problematic due to the large sandbars that blocked them and to the region's tidal range. The vast amount of freight needed and the enormous cost involved to provide jetties, landings and lighthouses made public works provision cumbersomely slow and prohibitively expensive. Roads were non-existent except for the tracks made by the

settlers' wool wagons. It was to be many years before these tracks were gazetted where they radiated out from the tiny coastal settlements (LePage 1986).

The DL&S, with lack of funding, antiquated equipment and too few surveyors, was also hard-pressed to mark the boundaries of the new pastoral leases (Johnson 1962). Malcolm Fraser succeeded John Septimus Roe as Surveyor General in 1870 and the new man immediately set about reorganising his department. Fraser retrenched five surveyors and kept three as permanent staff, whilst contracting-out important work to qualified operators. The old order of the colonial-born surveyors objected, but were overruled when Fraser's policy was approved by the Legislative Council (Bolton 1958). Unfortunately by the mid 1800s demands for services of surveyors in a rapidly expanding colony placed great stress on the struggling Surveys Department, much to the disgust of the grassmen seeking boundary lines for their leases (Crowley 1971). Shortage of funds, the tyranny of distance, and the cumbersome equipment to be transported also thwarted surveying attempts (Johnson 1962). Surveyor General Fraser was also Commissioner of Works for the 1875-organised Public Works Department (PWD) and, under his administration, some much-needed services were slowly developed in the North West (LePage 1986). Until that time the leaseholders, other than those in the lower Murchison basin who were in easy reach of the Victoria District, struggled with adverse conditions to provide their own services. For the lower Murchison pastoral industry the small ships that picked up the ore from Port Gregory also loaded wool and delivered goods and mail for the hinterland. Others were able to transport their wool by wagon teams to Geraldton (Keeffe 1994).

To alleviate the dilemma of transportation, small ports and several landings were developed from the time of settlement at Tien Tsin Harbour to the end of the 1880s. At the mouths of the rivers and creeks near the leases small jetties and landings were constructed by the grassmen for the shipment of their wool. These jetties ranged from the Murchison to the DeGrey and included those at Gladstone, Maud's Landing and Pardoo. Gladstone was used by the grassmen from Beringarra, Milly Milly, Byro and Milerua Stations in the northern half of the Murchison, the route they used evolving into the notoriously sandy Butcher's Track (Nixon and Lefroy 1989). Maud's Landing, developed by Robert Edwin Bush, was used for his own wool and that of others of the north and central Gascoyne, using a track that followed the Lyons River north and thence westwards (McDonald 1991). The Pardoo jetty was constructed by the DeGrey partnership Grant,

Anderson and Harper to lighter the wool from the outcamp to the tiny new port of Condon (Leeds 1997). Other localities with landings developed into the isolated towns of Cossack, Carnarvon, Onslow and Derby. The wool bales, usually four to a lighter, were rowed out from these isolated jetties to an anchored vessel for loading, or, after their development, the nearest port to await shipment by the next vessel (Figure 5.1) (Webb

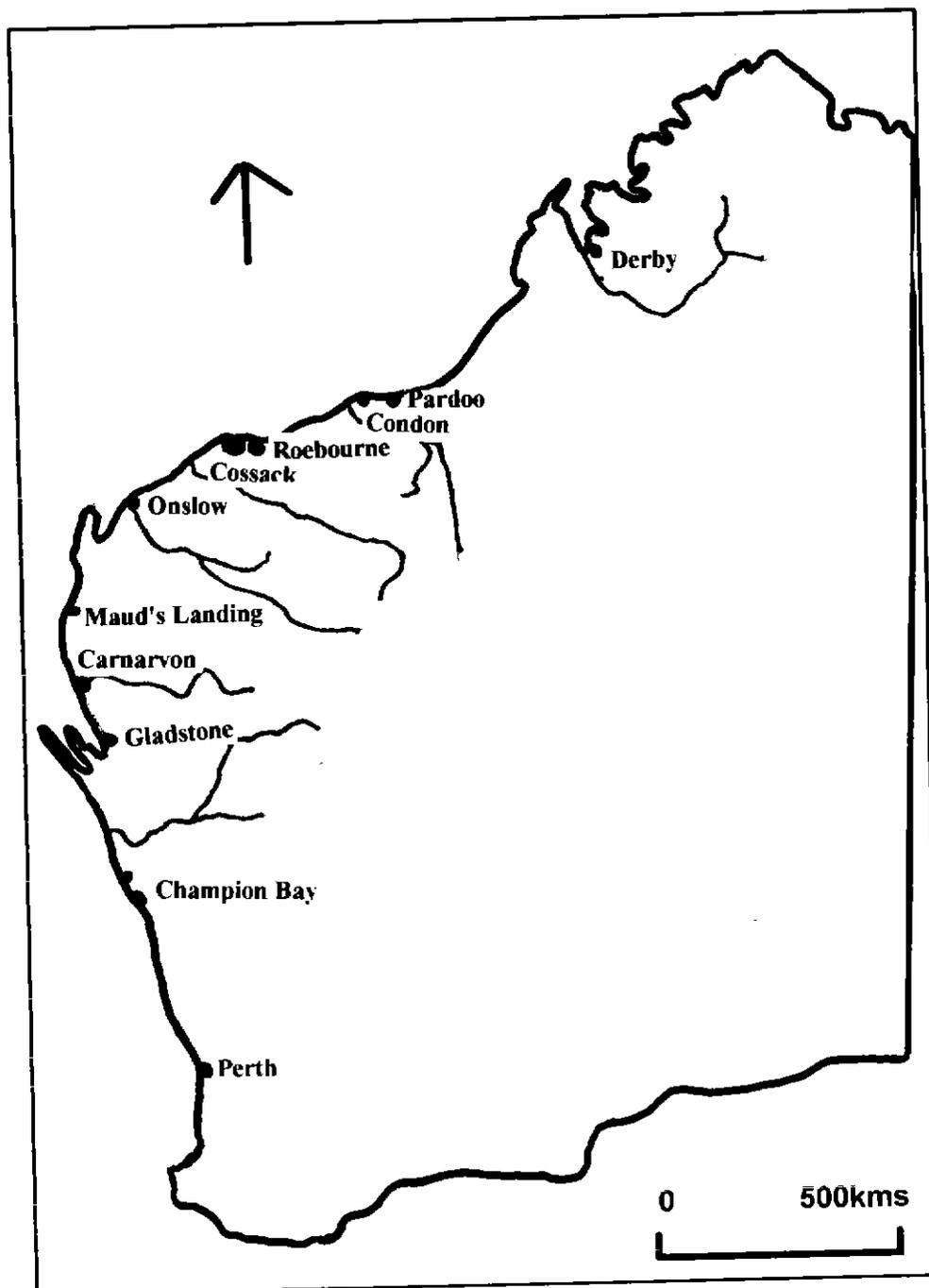


Figure 5.1: The first towns and landings in the North West

1983). During the early 1860s Charles Harper and Farquhar Mckay constructed a small jetty at Butchers Inlet near Tien Tsin Harbour for their pearling vessels, which was also used by nearby leaseholders for their wool before Cossack was officially proclaimed as a port (Forrest 1996), and surveyed as a townsite by Alexander Forrest (Bolton 1958). The Forrest brothers were to be involved in most of the necessary surveying.

The first town of importance to develop in the North West, though slow to be gazetted, was Roebourne, situated across the marsh and mangroves from the landing at Cossack. At first development was slow, then from 1875 to 1877 the Roebourne Hospital, Police Quarters and a lockup were constructed of wood. Throughout the 1880s other buildings were constructed of stone, including a reformatory, courthouse and a new hospital, with a large bonded warehouse at Cossack (LePage 1986). Roebourne was gazetted in 1886, but prior to the early 1880s, it was the only town, with Cossack as its port, in the North West to service the leaseholders in the Ashburton, Fortescue and DeGrey basins, and the pearling industry (Taylor 1987). It was surveyed by Alexander Forrest (Bolton 1958). People had difficulty negotiating the marshes between Roebourne and Cossack, which were subject to high tides, and the thick mangroves that lined the approach to the harbour. In 1887, 20 years after settlement, a tramway was finally constructed across the marshes that alleviated the problem of access. The tram was drawn by horses along the twin lines (LePage 1986).

For this important area, life was hard, the weather unpredictable, and the arrival of ships spasmodic. The population of the fledgling outpost increased with the arrival in 1866 of the Camden Harbour survivors. At the time the grassmen and townsfolk were confronted with food shortages and the lack of other necessities when the expected vessels from the south were delayed. In one episode in June 1867 when the *Emma* was sunk by a cyclone, Charles Harper came to the rescue and rode south to Geraldton to acquire their needs, which were immediately dispatched northwards by the first available vessel (Nairn 1985).

The development of the tiny port of Condon preceded Roebourne and may have been the brain-child of Charles Harper. The small settlement was situated on a relatively level, sandy point on the banks of a small tidal creek north of the DeGrey River. It was gazetted in May 1872, about the same time as Harper entered into partnership with Anderson and Grant on DeGrey Station. The townsite was surveyed by H.P. Lofie the

same year (Figure 5.2). The reason for its creation was to obviate the long and arduous journey to reach Cossack and Roebourne. Condon was later gazetted as Shellborough, though it never used that name. The port serviced the pastoral industry in the DeGrey basin and other leases in the Pilbara. In 1885 it was a flourishing centre with a population of 200, a post office, bonded store, hotel, police lockup and other buildings (Hardie 1988)

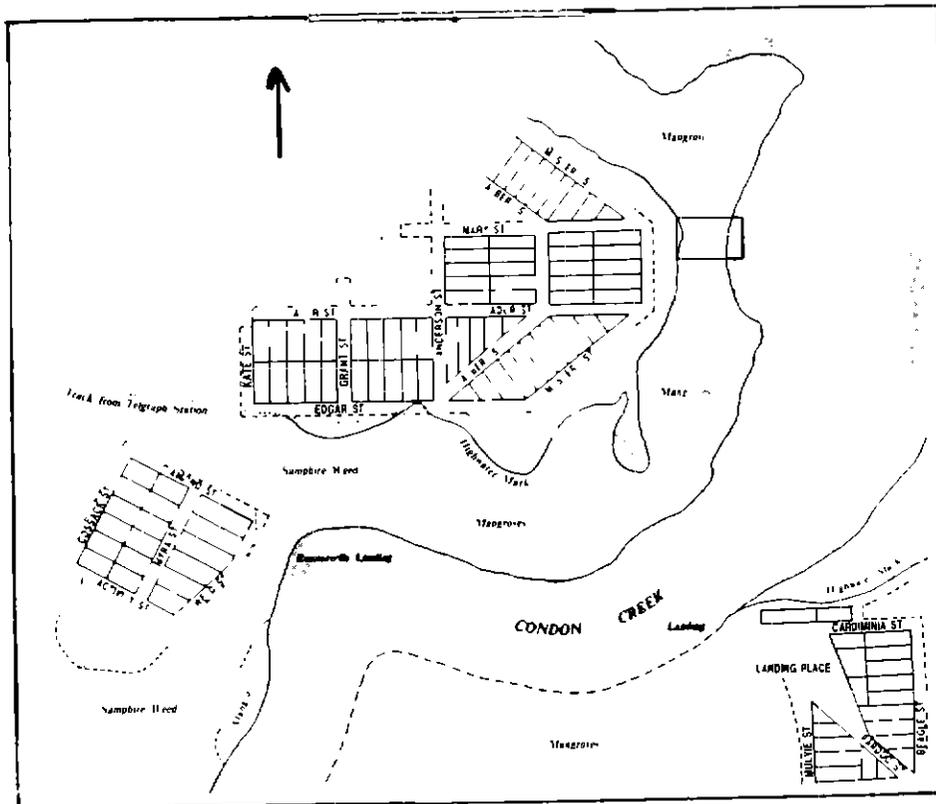


Figure 5.2: Town plan of Condon (Shellborough). Source: Hardie 1988.

The first landing on the Ashburton River was constructed by the grassmen. By 1876, Hooley, McRae, Forrest and Harold Higham of the new lease Nanaturra, had constructed a small shed to protect their wool waiting for shipment. An enterprising individual Captain James Clark and his brother-in-law John Edward McKenzie of Albany started a lighterage service in 1883 with the vessel *Ashburton*. By 1884 a customs house and a wayside inn were established where the grassmen's small shed stood (Webb 1983). This was the beginning of the development of Onslow. Similar to Condon, the townsite was on level and sandy country open to the winds. The town's gazettal in 1885 preceded that of Roebourne by a year, no doubt due to the fast growth of the pastoral industry in the Ashburton basin, and of further importance, in time for the construction of the new

telegraph station as the line crept northwards to Roebourne (Webb 1983). In 1885 a small lighter landing stage was constructed by the government beside the existing riverside wharf (LePage 1986). The townsite was surveyed by T Beasley and H. Stuart Carey (Webb 1983).

There were also developments at the mouth of the Gascoyne River as the pastoral industry spread through the basin, with Carnarvon gazetted on the 20th of January 1883 (Memory 1967), the townsite was also surveyed by Alexander Forrest (Bolton 1985). In 1885 a small, inadequate jetty, constructed by the Gascoyne grassmen, was extended by the government into the Teggs Channel. The extension, however, was still unsatisfactory as it could only cater for small vessels, and in the following year Baillie, Davis and Wishart won the contract to construct a large jetty off Mangrove Point with work beginning in early 1887 (LePage 1986).

Derby, north of the mouth of the Fitzroy River, was quickly developed after the initial settlement of the Fitzroy basin. The port was situated on the mud flats fronting King Sound, gazetted in 1883, and occupied by a Government Resident and a police detachment. The small town serviced the Fitzroy basin leaseholders (Shire Clerk Derby 1996). The first jetty and goods shed were constructed by David Law at a cost of £3000 in 1885 (LePage 1986). Broome on Roebuck Bay was also gazetted in 1883, but it mainly serviced the pearlers (Shire Clerk Broome 1996). Both townsites were surveyed by John Forrest who held the Minderoo leases with his brothers Alexander and David (Crowley 1960).

Thus throughout the 1880s, ports to service the fledgling pastoral industry of the six river basins were mostly developed from the original sites of the grassmen's own landings. As part of the processes of lease development however, grassmen made their own tracks that developed into major thoroughfares for the movement of stock and wagon-loads of necessary goods for their stations and wool for the markets. Some of these tracks were used by the gold-seekers coming down from the defunct 1885 goldrush of Halls Creek in the Kimberley to the new rushes further south on the Shaw and Coongan Rivers in the DeGrey basin which resulted in the development of the settlements of Marble Bar and Bamboo Creek (1888) and in the Ashburton basin (1889) (Edwards 1993). The leaseholders in the Fitzroy basin benefited from the goldrush with the sale of their stock to butchers servicing the mining camps (SROWA, 1899-1935, Cons 1240A, MN149). By this

period, ungazetted stock routes were in use, with cattle and sheep being driven along them to the newly established goldfields. The stock routes, with their fork-and-lever wells, became busy thoroughfares for travelling prospectors, drovers, leaseholders and Aborigines. They formed a network, linking inland stations with the nearest port and also crossing the divides between the river basins. They were connected with the metropolitan area via Geraldton and the North Road (de Burgh 1986). Hooley's overland track from the Geraldine Mine to Roebourne was part of this main thoroughfare for the inland movement of stock and people. Droving was hazardous work. Wells had to be dug for water, or existing Aboriginal wells enlarged, threatening Aborigines had to be monitored and poisonous plants avoided if the stock were to reach their destination safely.

The droving trails were the only way to move big mobs of stock, the ships limited to carrying a few head at each trip. Grant, Anderson and Harper, requiring cattle for their developing Muccanoo Station upriver on the DeGrey, contracted the Clarkson brothers to do the work. The Clarksons left the Vasse in 1874 on what must have been then one of the longest droving trips undertaken at the time in the colony. Unfortunately for them, they lost their lives, one through thirst, the other at the hands of the Aborigines, near the Landor River in the Gascoyne basin. John Brockman took over the droving in early 1875, rounding up what numbers he could find of the 1153 head of cattle, and continued along Hooley's track to Roebourne and thence to the DeGrey Station without much further problem (Heppingstone 1978).

Small vessels, however, were the communication lifeline for the pastoral industry. They plied the forbidding coastline transporting people, goods and a limited number of livestock between the small ports and landings. Their important consignments on their return journey south were the pastoral industry's wool and pearl shell. Loading and unloading the ships was a risky occupation, the vessels not only subjected to the capriciousness of the weather, but also to the extreme high tides, which, when they had receded, left the vessels sitting on the mud (LePage 1986). Bullock, donkey and horse teams dragged their wagons across the mud flats to load and unload goods (Plate 5.2). If the tide rushed in during the process, the animals were unyoked to swim ashore, leaving the wagons to be rescued later when the tide had receded. (Hardie 1988).

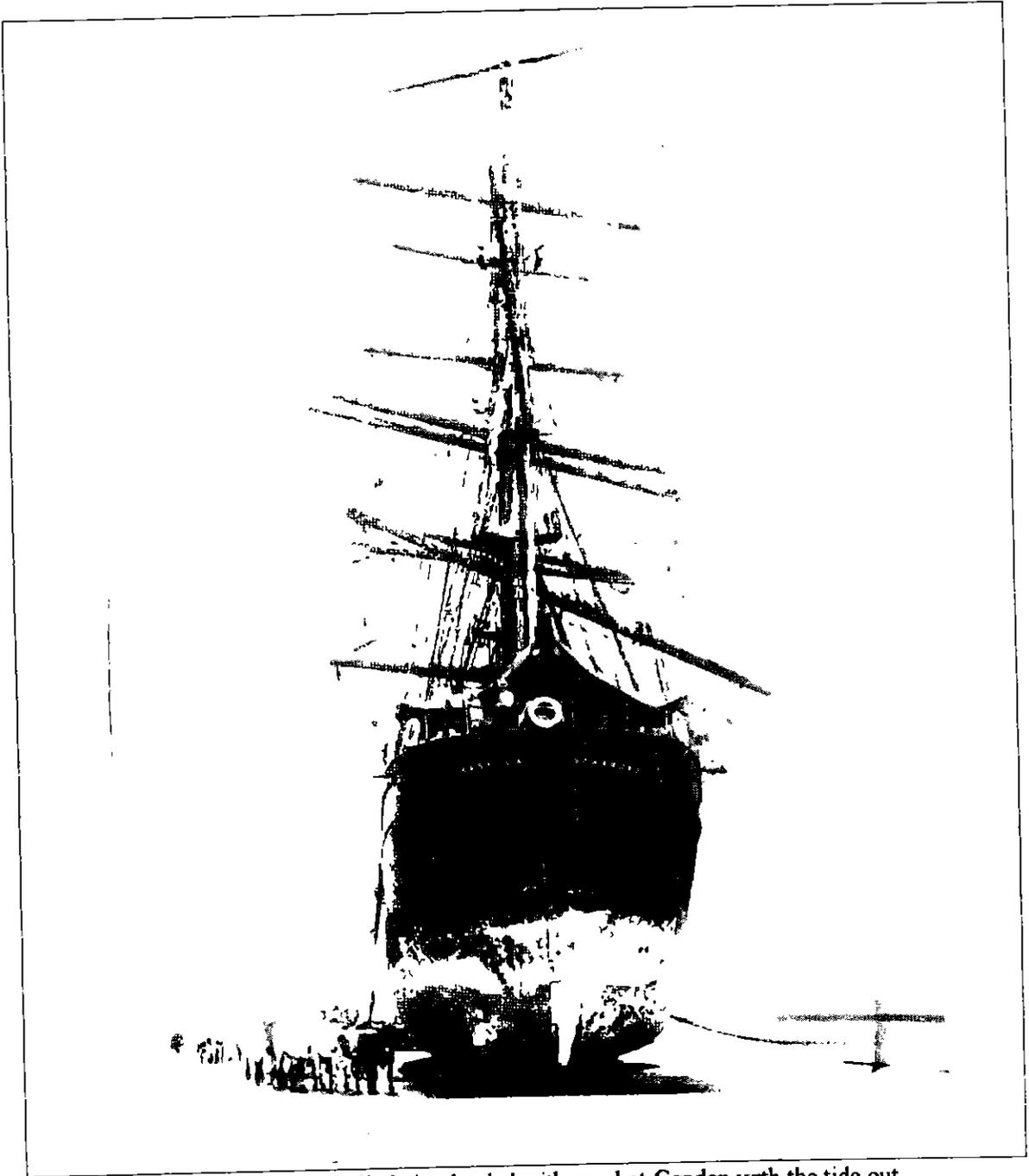


Plate 5.2: The *Arabella* being loaded with wool at Condon with the tide out.
Source: Hardie 1988.

The North West coastline, notorious for its turbulent seas, hidden reefs and high range of tides was hazardous for small ships. A lighthouse, the first in the North West and with a nine-metre cast iron tower, was constructed on Jarman Island off the coast of Cossack in 1885-1886 (LePage 1986).

5.3 The Development of the Pastoral Industry: from Shepherds to Stockmen

Prior to the introduction of windmills, the process of landscape change involved station infrastructure which initially included shepherds' camps and brush yards constructed to pen the sheep at night, with either small, shallow wells or a waterhole nearby (Curry et al 1994). The grassmen used the rivers, creeks, claypans and billabongs for watering their stock, which were shepherded by ticket-of-leavers in the Murchison basin below the Class C line and Aboriginal labour elsewhere in the North West (Keeffe 1994). In the central Murchison Basin a major part of Wittenoom's employment was to take supplies out to the shepherds' camps. Each camp or hut held one shepherd responsible for a small flock of sheep (Plate 5.3). Similar operations were conducted in the



Plate 5.3: Shepherd's hut in the Murchison. Source: Nixon and Lefroy 1989.

other basins, including the DeGrey (Edgar 1987). Wells, using the fork-and-lever method, or a windlass and bucket for the fortunate, were dug to augment the water supply, particularly for the homestead at first, and these were manned by Aborigines. On most leases, the native grasses were cut for hay (Plate 5.4) (Nixon and Lefroy 1989). The blackheart, a type of coolabah that grew along the watercourses and around the waterholes, was the first to experience the axe on a large scale. It was used extensively for post and rail yards, the lining of wells, and for the beams and frames of buildings (O'Grady 1995). The straight mulga trunks of the black mulga tree were also used for the same purpose (Barndon 1996b).

Horses were indispensable in the pastoral industry and were used for all stock and station work. They were also the only means a grassman had for travelling to

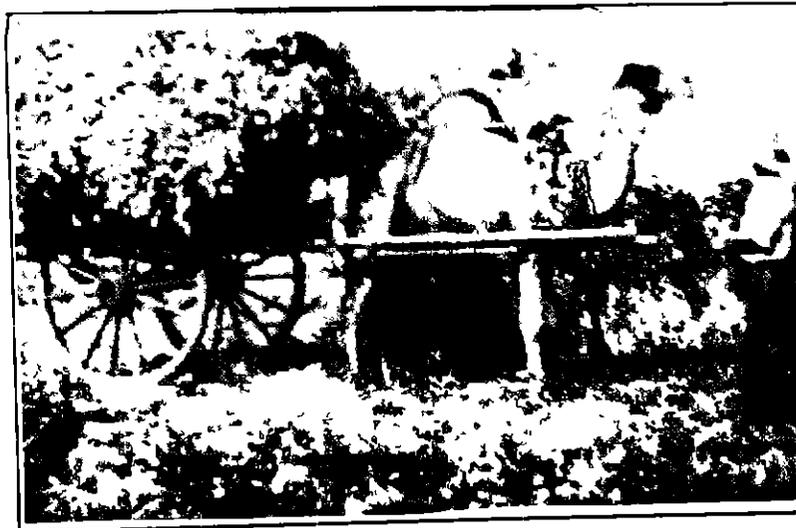


Plate 5.4: Camel carting grass for hay in the Murchison. Source: Nixon and Lefroy 1989.

the settlements or visiting far-flung neighbours. Alexander Edgar writes in 1878 of breaking-in horses at DeGrey Station on the soft sand of the DeGrey River bed near the homestead (Edgar 1987). With the construction of fenced paddocks, however, the stockman and his horse came into their own and shepherds were no longer required. The leaseholders bred their own stock horses, an activity that was to culminate in the breeding of station racehorses for the annual picnic races that were held in the small settlements and on the leases. (Taylor 1987, Nixon and Lefroy 1989).

Self-sufficiency was an important part of a developing lease, and the rangeland resources were not only utilized by foraging stock but also by the grassmen. On DeGrey Station workmen made bricks from the red sand of the pindan for constructing cottages (Plate 5.5). At the other end of the lease on the Oakover, Anderson constructed a small two-roomed mud hut using the same method. River sand was also a source of material for brick-making. Other sources were the local stone for the construction of homesteads and other buildings. The stones were quarried from some nearby hill as in the case of the Warrawagine homestead construction by the Darlot brothers (O'Grady 1995).

To augment food supplies, small vegetable gardens were established during the winter months. Nairn on the DeGrey in 1863 reported that in his garden Indian corn, pumpkin, beans, sweet potatoes, lettuces, radishes, banana plants, sugar cane, an orange tree and watermelons flourished, providing the men with much-needed fresh vegetables and hoped-for fruit (Nairn 1928). Charles Harper was credited for introducing the versatile seven-year bean creeper during the 1870s to the Murchison, and also on the



Plate 5.5: The DeGrey homestead. Source: Hardie 1988.

DeGrey Station. The bean pod was an excellent eating plant, whilst the creeper provided welcome shade (Nixon and Lefroy 1989).

Following shearing, at first carried out by the grassmen, and then by the more skilful Aborigines, the wool was washed, dried, then packed in bales, which were carted by wagon teams to the landings and ports. From there, it was shipped directly to Great Britain or Singapore. Other markets were Malaya, the Dutch East Indies, the Philippines, India, Ceylon and Japan (Webb 1983). By 1889 the North West was the main exporter of wool from the colony. At the time, and in keeping within lease development requirements, the sheep numbers had escalated from 39 000 in 1879 to over two million (Crowley 1960).

Major problems with which the grassmen had to contend in the unknown environment of the river basins during the initial settlements were the dry seasons, droughts, cyclones and the shortage of labour. The Colonial Office in its wisdom had expressly forbidden convicts and ticket-of-leave men from being a source of labour north of the Class C line (Government Gazette 23 December 1862) Thus it was imperative that the leaseholders persuade the Aborigines to work on their leases. Further uncertainties of development on the coastal leases included problems with scab. An outbreak among the sheep in 1868 was to last for a number of years (Taylor 1987). The dingoes also were troublesome and made inroads upon the unprotected stock. Alexander Edgar on the easternmost end of the DeGrey leases regularly poisoned dingoes during the 1870s (Edgar 1987)

5.4 Lease Improvement

The original 4100-hectare leases in the North West, and the 20 000ha to 50 000ha in the Fitzroy basin leases, were gradually amalgamated into much larger units. Undeveloped small blocks on the lease plans usually indicated areas with inadequate watering points and no fencing. Capital was the most important commodity needed to cover the expense of developing watering points and fenced paddocks. The British Industrial Revolution aided development with wool as an important input to the Home Country. New technology, as a result of the revolution, included wire, windmills and galvanized iron sheeting. Wire fencing was introduced into Victoria in the 1850s, thence into New South Wales in 1861. It had reached Queensland in the 1870s (Willey 1984). Wire fencing was introduced into the North West during the 1870s by the Victorian grassmen Anderson and Grant on DeGrey Station (Edwards 1993). After Anderson's death, the partnership operated as Grant, Harper and Edgar, with the inclusion of the Victorian and South West Edgar family, and Charles Harper. The development of DeGrey Station aided technological advancement in the river basins as others followed their example. Harper was credited with the introduction of the windmill into the DeGrey basin, which revolutionized the development of the pastoral industry (O'Grady 1995). Windmills required tanks, usually of stone, and troughing, and permitted further dispersal of stock over a vast area that required wire fencing at a different scale from the previous post and rail yards beside the waterholes.

The Harper partnership was dissolved, however, at DeGrey Station on the 19th of October 1878 (Government Gazette 24 December 1878). By then the station had fenced paddocks enclosing 13 000 sheep (Figure 5.3). Lambing numbers dropped drastically in that year with only 2000 lambs from the 4 700 ewes. Alexander Edgar wrote to his sisters in 1878 that it was the worst lambing the partnership had experienced since they took over the leases in 1869. Presumably the year was a dry one and the dingoes particularly savage, to account for Edgar's complaint. He also complained of the poor quality of the wool compared to the fine merino wool of Victoria, but further stated that 'the cattle get very fat here and I have seen 3 or 4 that went 1200 lbs, and they did not look very big' (Edgar 1987, Letter dated 1878). Because of the fine dust the wool had to be washed after shearing, which was carried out in the river pools by the Aboriginal women. The wet fleeces were then laid out on the rocks, or thrown over bushes, to dry, before being pressed into the wool bales (Plate 5.6) (Hardie 1988). Grant and Edgar continued to develop DeGrey, Mulyie and Muccanoo, mostly unimpeded by others

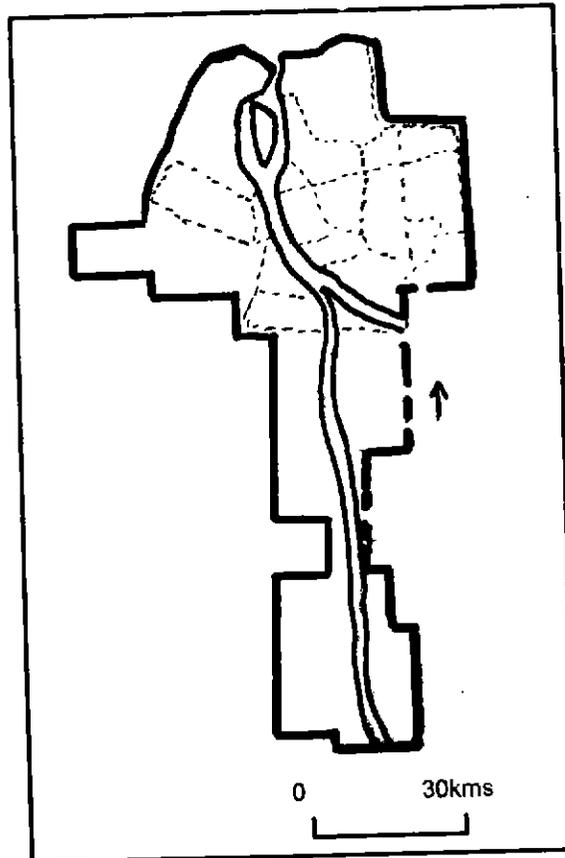


Figure 5.3: Fencing on DeGrey. Source: SROWA 1872-1879.



Plate 5.6: Drying wool on DeGrey Station. Source: Hardie 1988.

demanding land along the DeGrey and Oakover Rivers, though later mineral discoveries in the basin were to change all that (Figure 5.4) (O'Grady 1995).

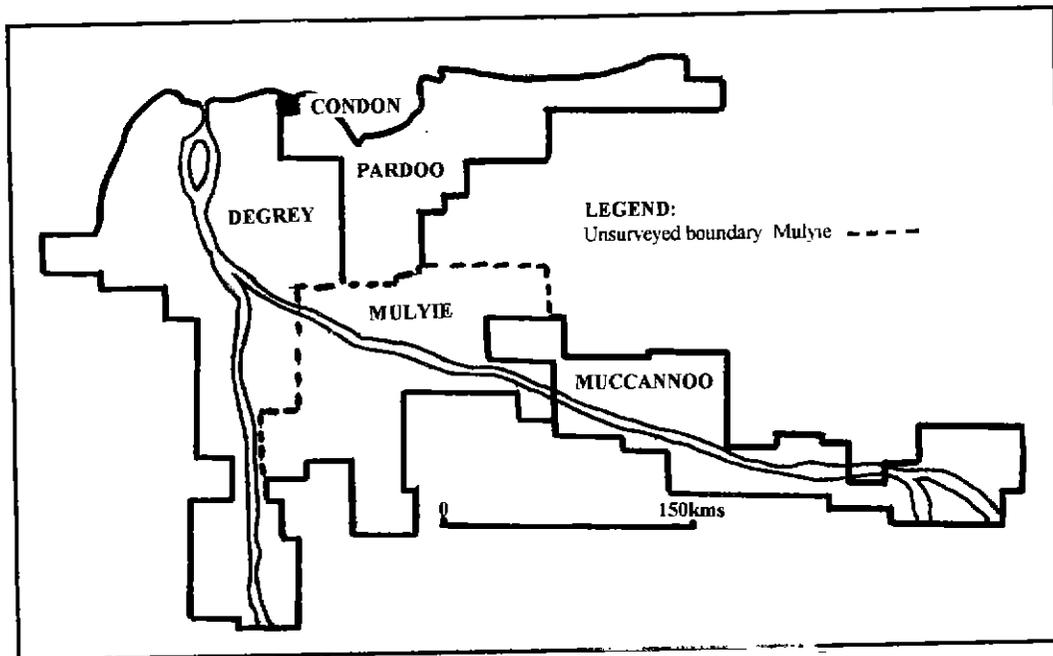


Figure 5.4: The DeGrey basin leases. Source: SROWA 1872-1879, ACC 1973A, MN 94, Item 1.

However, there still remained many thousands of hectares of vacant Crown land in the eastern portions of the semi-arid river basins as well as in the country away from the watercourses. These lands were not to be taken up until the goldrushes gained momentum with the declaring of the Murchison Goldfields in the 1890s and the resultant influx of miners and the subsequent need for meat. For nearly 30 years since settlement, however, versatile grassmen needing capital to develop their leases resorted to the lucrative industry of pearling.

5.5 Pastoralists and Pearling

The pearlshells that lay in shoals, along the fringing reefs and around the islands along the North West coast from Shark Bay to points north of Lagrange, and which adorned the coastal Aborigines' necklets and served as barter objects, proved a profitable business venture to several of the grassmen, and thus aided the development of their stations. Shells were being gathered from Shark Bay by Captain Daniel Scott of the *Pelsart* as early as 1850. By 1868, the coastal grassmen had turned to pearling along the beaches, including Nairn (1928) at the DeGrey, and Hooley of the Ashburton, who had gathered 10 tonnes of shell from around the Tien Tsin Harbour area and then shipped it south aboard the *Mystery* (Forrest 1996). Pearling, however, like the pastoral industry was

not without its involvement by members of parliament. William Marmion, member of the KPC corporate of the Fitzroy and Fortescue basins and also Minister for Lands, was in partnership with Aubrey Brown and C. Gill in the brigantine *The Fairy Queen* which plied the pearling fields from Shark Bay to Broome. Brown and Gill's other luggers, *The Swan* and *The Albert* were based at Shark Bay (Forrest 1996). Charles Harper had the *Annie Beaton* for a number of years, and other luggers in partnership with Grant and Anderson, which were based at Condon (SROWA 1872-1907, ACC 1973A, MN 94, Item 1). The luggers were in the charge of his nephew George Lukin. Harper operated off the Pilbara coast (Hardie 1988).

John Withnell of Yeer-a-muck-adoo, or Mount Welcome Station at Roebourne and later on the Sherlock River, discovered the diving abilities of the Aborigines, particularly the women, and, using his own lugger, gathered shell from the deep water using this human resource (Taylor 1987). At the same time as shells gathered from the ocean bed by Aboriginal divers, thousands of shells that were available on the beach around Condon were gathered by the Aboriginal women. Part of the DeGrey leases included the coastal strip which gave the leaseholders pearling rights (Edgar 1987). Captains of the luggers had their bases along the coastline for anchorage during the lay-up, or cyclonic, period (Plate 5 7)



Plate 5.7: Pearling luggers at low tide in Mangrove Harbour Source Hardie 1988

In the 1870s, however, a more disreputable element of society entered the pearling business - unprincipled ticket-of-leavers, ex-Royal Navy personnel and other adventurers who ranged far inland for crews among the Aborigines. Blackbirding was

prevalent (Taylor 1987). Hundreds of Aborigines died from diving too deep and from the harsh conditions on board the vessels. Beri-beri was rife and pneumonia also took lives (Webb 1983). By 1878 a Justice of the Peace from Roebourne was riding around the stations, selecting and signing up Aborigines for the next pearling season to help alleviate the blackbirding problem (Edgar 1987). Action by the Colonial Government, including the Pearl Fisheries Act (1871) and the Aborigines Protection Act (1886), helped to prevent further atrocities against the Aborigines, at least outwardly (Green 1981).

Pearling was a profitable business, providing the capital without which many grassmen, and corporate leaseholders, would not have developed their leases as quickly as they did, and aiding the flagging economy of the colony. Between 1870 and 1884 £140 000 worth of pearls were sold, with £560 000 worth of pearl shell collected (Crowley 1960). Pearl buyers, Malays and Aborigines crowded the coastal settlements, particularly the newly-gazetted town of Broome (Durack 1969). In the mid-1880s, a young Jew, Mark Rubin, made his appearance in Broome's pearling industry as a pearl buyer. He was to later have a powerful influence on the pastoral industry in the DeGrey basin (O'Grady 1995).

5.6 The Indigenous Population

European pastoral activities in the river basins eventually destroyed Aboriginal tribal life, and caused disputes over the rangelands which lasted for nearly 30 years (Webb 1983). The Aborigines objected to the stealing of their women and the loss of their hunting grounds and acted accordingly, which brought swift white retaliation. Before long however, with their previously sustainable resources dwindling under the grazing pressures of foraging stock, and in response to the grassmen's and corporatism's need for cheap labour, Aborigines were progressively incorporated into the station workforce. The transition, however, was not without conflict. In the Ashburton, Gascoyne and Fitzroy, the violence was continuous as the pastoralists spread through the basins. Many of the indigenous people who retaliated against the encroachment on their lands, lost their lives at the hands of the police and the leaseholders who carried out punitive expeditions (Kolig 1987). In the Gascoyne some Aborigines worked on the leases whilst others speared stock and fought against losing their women to a second wave of leaseholders, who arrived during the 1880s in an endeavour to establish sheep runs (Webb 1983, Kolig 1987). The Aboriginal employees, under some callous leaseholders were whipped and beaten if they

ignored their work or performed in a manner not pleasing to their bosses. The Shaw brothers, who took over the O'Gradys' Erravilla in the Gascoyne in 1885, were notorious for their cruelty (McDonald 1991).

Not all the Aborigines worked for the leaseholders in the basins. Families congregated around the waterholes where the homesteads were constructed, usually on the opposite bank of a river or creek. Initially they survived partly on traditional resources and rations from the station people. Both male and female Aborigines worked on the leases as the musterers, shearers, stockmen, fencers, wood-choppers, gardeners and cooks. Others were involved in communications, carrying the pastoralists' letters on message sticks (Lee-Steere 1996). The women also cared for the white children, had domestic responsibilities in the homestead and accomplished many other necessary tasks that were part of the station infrastructure, whether in the homestead, around the complex, or out in the paddock (Green 1981). In some cases Aboriginal women carried water in jars upon their heads from wells or waterholes (Nixon and Lefroy 1989). According to Lee-Steere (1996) the Aboriginal people were very efficient and, in most cases, they were also very loyal to their station, having a real affection for the white families, a feeling which was mutual. Despite being seemingly domesticated to European standards, the station Aborigines maintained some aspects of their traditional way of life as did the DeGrey Station people (Plate 5.8).



Plate 5.8: Aborigines of DeGrey Station in ceremonial dress. Source Edwards 1993.

By the 1880s, however, and with the arrival of the goldrushes and the introduction of fencing, changes were occurring. The need for shepherds disappeared and indentured Chinese were replacing the domestics in the homesteads and gardens.

Furthermore, the ensuing generation of Aborigines had lost most of the old ways and refused to listen to the elders, but were not incorporated into the European way of life. (Taylor 1987). These changes did not occur at the same time in all the river basins. In the Murchison (Nixon and Lefroy 1989), the Gascoyne (Memory 1967) and the DeGrey (Hardie 1988) the Aborigines remained very much a part of the work force. The coastal Aborigines in the Roebourne area were the ones to experience the loss of employment and of a sense of place (Taylor 1987).

Introduced diseases also had a devastating effect on the Aborigines. During the early 1860s, after settlement at Tien Tsin Harbour and Roebourne, they were dying from illnesses such as measles. During the drought of 1864 and 1865 in the Roebourne area they died of starvation as their natural food and water resources dwindled (Forrest 1996). In the same area in 1866 thousands died along the pearling coast from smallpox introduced by the Malay divers (Taylor 1987). They died by the hundreds through maltreatment and neglect in the pearling industry (Forrest 1996). It was apparent that the captains of the luggers never issued lime juice to the crew to combat the lack of fresh food, a standard procedure on British vessels (McLaren 1996).

Those Aborigines not incorporated into the work force and living on the fringes of the settled leases were the most troublesome with their spearing of stock, pilfering and taking the lives of the Europeans. These events culminated into punitive expeditions and the development of police depots and patrols (Webb 1983). Such occurrences led to the formation of the Aborigines Protection Board, which was devised under The Aborigines Protection Act, 1886. The Act was ostensibly introduced for the protection of the Aborigines, who were considered to be a dying race at the time. Duties required of the Board and the protectors included distributing rations and blankets and other relief to the Aborigines, protecting them against ill-treatment and fraud, seeing to the welfare and education of the children, and managing the reserves set apart for Aboriginal use. Furthermore, the law required the employment of Aboriginal labour under a contract that required payment in form of rations, medicines and blankets (Aborigines Protection Act 1886). The vast distance from the governmental control in the South West, and the difficulties of travelling through the harsh environment, no doubt made it virtually impossible to enforce the Act in the North West.

Attempts to alleviate the distressed state of the Aborigines were made by the clergy of the colony who desired to instruct and protect the Aborigines from white exploitation (Hawtrey 1947). In a move towards establishing a mission in the Gascoyne in 1885, Governor Broome set aside a reserve on Yanget Pool in the Gascoyne River (Memory 1967). A further reserve 598A of 60 000 hectares on Dalgety Brook, a tributary of the Gascoyne River south of Mount Dalgety, was also set aside for an Aboriginal mission (SROWA 1881, PWD 2135 9). The missionary was the Reverend John Gribble from New South Wales. Within 11 months, the mission had closed because of the antipathy between the pastoralists and Gribble, who was outspoken about the inhumane treatment of the Aboriginal people (Hawtrey 1947). The resultant furore over Gribble's condemnation of the leaseholders was a further incentive for the proclamation of The Aborigines Protection Act, 1886.

5.7 Police Outposts and the Indigenous Population

The Aboriginal resistance to the invasion of Europeans resulted in the establishment of the first police outposts. A lone policeman patrolled the Murchison and Gascoyne in the 1870s from the main base at Geraldton. At that time the areas were relatively trouble-free with the occasional spearing of stock the only problem (Nixon and Lefroy 1989). However, as the natural resources dwindled under the onslaught of foraging stock, retaliation by the Aborigines through sheep stealing and attacks on the shepherds and stockmen increased, which outraged the leaseholders who demanded police protection (McDonald 1991). Mount Wittenoom police depot in the Murchison was gazetted in 1879 on the newly-developed Meka Station (Nixon and Lefroy 1989). There was a police station at Roebourne, and a patrolman was based at Condon with a small lockup for his charges (Edgar 1987). Patrolmen rounded up Aborigines, some guilty, some not, chaining them together for a forced walk to the lockup (Plate 5.9). A police outpost was established at the junction of the Gascoyne and Lyons Rivers and appropriately named The Junction by 1885. Gribble was to record the Aborigines accused of sheep stealing and stock spearing being chained up in a stockyard-type enclosure at this outpost (Memory 1967). Other police outposts were to follow in the next decade after the commencement of the Murchison goldrush (Nixon and Lefroy 1989).



Plate 5.9: Aboriginal prisoners in the Gascoyne. Source: Memory 1967.

5.8 Droughts, Floods and Cyclones

The settlers in the new environment of the North West were faced almost immediately by adverse weather conditions which disrupted lease development and played havoc with the pearling industry. However, some related events such as the periodic flooding of the rivers in the basins, were of benefit. In 1857, a torrent of brown water came down the lower end of the Murchison River, flooding the Geraldine Mine after heavy rain was experienced 190 kilometres eastwards of the mine. Gregory reported on the remarkable change in the country after the rain, compared to Austin's report of the rangelands during the drought of 1854 (Gregory 1846-1858). In 1867 a cyclone sank Padbury's vessel *Emma* resulting in the abandonment of DeGrey Station and a shortage of food in Roebourne (Nairn 1985). Dry seasons were also evident. A drought during 1864 and 1865, plagued the grassmen in the Ashburton and Fortescue basins. Stock losses were reportedly high, though no numbers were available (Webb 1983). Another drought in the Fortescue basin in 1869 forced the Victorian grassmen, attempting to travel south, to take over the DeGrey lease (O'Grady 1995).

In 1872 Roebourne was almost destroyed by a cyclone and the grassmen in the region again suffered high stock losses. Richardson on Pyramid Station lost 1100 sheep and 200 rams, Andover Station lost 300 sheep, Millstream Station 500 sheep, Venn on the Nickol lease (later Karratha Station) lost all but 50 of his 2200 sheep, Withnell on the Sherlock River lost 600 wethers, and McKay on Mundabullangana Station lease lost

1500 sheep. Homes, woolsheds, wool clips, and station plant were destroyed or severely damaged. The rivers rose all along the coast from the Harding to the Fortescue (Taylor 1987).

In the DeGrey basin in 1873 Warburton (1875), as we have seen, recorded the Oakover in flood. In January 1875 a flood came down the DeGrey and the water was almost up to the DeGrey Station homestead. Julius Brockman, temporarily working on DeGrey, reported that the country was too boggy for the horses and so he had to walk everywhere. The insect life, particularly the mosquito, was abundant. Following the flood the grasses grew prolifically and were up to the saddleflaps of the horses (Brockman 1987).

In the 1881-1882 summer, further cyclones damaged Roebourne, and torrential rain fell in the lower Ashburton River basin (Crowley 1960). Another cyclone in 1882 destroyed the decking of the jetty at Cossack, blew off the mast of the vessel *Clarence Packet* in the harbour, demolished the customs house and further disabled the *Rob Roy* in Tien Tsin Harbour. A further cyclone in February 1883 resulted in stock losses in the Fortescue basin (Webb 1983). In 1883 also a high tidal wave associated with the Krakatoa volcanic eruption washed Yeeda's wool clip off the small jetty at Derby and out to sea (Shire Clerk Derby 1996). In 1885 further drought along the Ashburton River prevailed and the waterholes dried up. Dried-up feed was swept away by the winds and the skeletons of dead stock littered the countryside. The country was a desert between Uaroo and Ashburton Downs Stations. The government well between Balmoral and Karratha Stations also dried up and between Mardie Station and Roebourne there was no water for 70 kilometres. Other wells also failed. They fell into disrepair with their windlasses broken, and the ropes stolen by unsympathetic passers-by (Forrest 1996). On the 22nd of April 1887 a cyclone along the Eighty Mile Beach sank 18 pearling luggers and drowned 200 men (Crowley 1960). Droughts and cyclonic conditions were to become a part of the way of life to the new settlers, affecting their livelihood through livestock losses, rangeland deterioration and rejuvenation, dried-out waterholes or flooded countryside. Despite such vagaries, the pastoral industry continued to develop and stock numbers grew as the leases spread further into the basins. By then the grassmen well-knew the importance of moving stock from the river frontages during the cyclone seasons.

5.9 Conclusion

In nearly 30 years from 1858 to 1885 the leases in the river basins achieved, albeit slowly, a means of progress, stability and expansion that in many cases was aided by profits from the pearling industry. The rangelands underwent change with the development of homestead complexes, wells, windmills, troughing, tanks and fences, with large paddocks beginning to spread out from river floodplains, and with stockmen replacing shepherds. Influential grassmen in the Legislative Council, as well as taking matters into their own hands, fought to limit the isolation of the North West. Their efforts resulted in the provision of rudimentary infrastructure as ports, roads and stock routes made their imprint upon the landscape. The Aboriginal culture of pre-settlement years also radically changed, with many incorporated into station life while maintaining some traditional values. Others fought a losing battle against the invaders, resulting in the rough beginnings of law enforcement in the basins. Many were subjected to tyranny and many fell prey to the white man's diseases.

The grassmen who, confronted with dry spells and perceiving them initially as unseasonable droughts, came to understand that such weather was a normal feature of the climate in the North West. It would not be long however, before they would experience the effects of real drought in between 1890 and 1892. The selective destructiveness of tropical cyclones was now appreciated, as was their importance in regenerating the rangelands and recharging the water supplies. In this respect, cyclonic activity provided moisture for the natural vegetation, a feature lacking in the settlement problems of the Warrego country of New South Wales and Queensland (Heathcote 1965), of Western Victoria, and even the development of new agricultural lands in South Australia (Meinig 1965). Analogous to the North West with these settlements though, was the variability of rainfall.

Chapter Six

Pastoral Expansion and Agricultural Experiments 1885-1920

6.1 Introduction

In the processes of landscape change following settlement of the river basins in the North West, most of the leaseholders involved were grassmen of varying experience as discussed in Chapter Two. The 1890-1892 drought, however, caused severe stock losses, dried-up the waterholes and killed-off the foraging grasses, issuing a warning, even to the careful operators, of how the vagaries of climate could, and did, affect their industry. Furthermore, as a result of the drought, erosion occurred along the river frontages and yet-to-be gazetted stock routes. The goldrushes, however, provided the impetus and finances needed to spread further into the river basins and more fully develop drought-ravaged leases. The exploration of the Kimberley Plateau by Frank Hann was the genesis of the development of a cattle industry in the upper reaches of the Fitzroy basin, initially creating a rush by speculators who eventually relinquished the land.

Tropical agriculture was also considered, but with its isolation problem and unfavourable climatic conditions, failed in the Fitzroy basin, with success assured only at the mouth of the Gascoyne River. In the other basins, various factors, mostly climatic, were cited as reasons why such ventures were not possible. Responsible Government in 1890 enabled the leaseholders to be more fully active in politics and to promote North West development. Under the Land Act of 1898, for example, lease tenure was extended to 30 years, which provided a further incentive to the development of the pastoral industry. The regulations allowed for the excising of leases for wood and roads, and control of soil by the government. Lease forfeiture was introduced for non-stocking within five years. The Land Act Amendment Act 1917 curtailed lease size in the hands of one individual to prevent monopolisation. Unfortunately, the accompanying improvement conditions and rigid but unrealistic required stocking rates were to have far-reaching, and devastating effects on the rangelands and pastoral industry in later years.

6.2 The Established Grassmen

From 1864 to 1890, the grassmen of the North West river basins enjoyed being identified as tough and stern men, willing to bend their backs in the harsh environment to establish a profitable livestock industry (Plate 6.1). Having accomplished the initial task some, such as Ernest Lee-Steere of Bebele (Lee-Steere 1996) and the Burts



Plate 6.1: Grassmen relaxing on board ship. From left Tom Anderson of Mulyie Station, Alexander Edgar of DeGrey Station and Charles Higham of Nanaturra.
Source: Hardie 1988.

of Brick House (Brick House Station Diaries 1900-1959), packed their trunks, donned their best clothing and sailed off to the Old Country to mingle with their families and the British aristocracy, to show off the wealth that they had made in that harsh environment. They also moved south to build mansions in Claremont, Peppermint Grove, and Adelaide Terrace and Mount Street in Perth, as did Everard Darlot and Ernest Lee-Steere (Lee-Steere 1996). From here they were to enter into politics, while managers or family members ran the stations. Some were dedicated to their work, carefully nurturing the land and its resources as their predecessors did. Others, including managers of most company-owned leases, cared little for the rangelands or their Aboriginal workers, to the detriment of both, being more concerned about generating high dividends for their masters (SROWA 1872-1935, ACC 4445A, MN 149/2, Item 1).

6.2 The 1890-1892 Drought

The 1890-1892 drought was severe in all the river basins under study. Indeed it was so widespread, that it affected an area stretching from the agricultural South West to the pastoral West Kimberley. In the Murchison and Upper Gascoyne it was reported that stock were dying everywhere from lack of water and that there was not a vestige of grass to be seen. In the district surrounding Onslow and in the Upper Ashburton

the same situation was apparent up to 1894. On the commons around Cossack and Roebourne, horses and domestic stock had no feed. Rain was greatly needed at Derby (Bureau of Meteorology 1927). At the onset of the drought, sheep numbers on DeGrey Station were 74 106. By 1891 they had dropped to 58 039, then down to 33 084 by 1892. Further losses were avoided as the flocks were spread into fenced paddocks with watering points (Edgar 1987).

In the Gascoyne basin where fencing was still in the future and most of the sheep were still being shepherded, struggling grassmen lost most of their stock, which severely handicapped the progress of lease development (*Pastoral Review* 1927). Battye (1985) records the devastation during this period, when thousands of lambs were killed to save the ewes. He writes 'On two stations alone 10 000 lambs were immolated to this end, and 26 000 sheep died of starvation.' (1985:45). During this period only the experienced grassmen with available capital for restocking, such as Anderson and Edgar on DeGrey Station, with their wells, mills and fences, were able to survive (SROWA 1872-1907, ACC 1973A MN 94 Item 2). Lee-Steere had just purchased Belele in the Murchison from Frank Wittenoom and, to save his flock of 6000, sank various wells along the Hope River to alleviate the pressure on the grasses around the dried-up waterholes. At the end of the drought Lee-Steere was down to 3000 sheep but was able to rebuild his stock numbers (Lee-Steere 1996). Many others walked off their leases when their whole flocks perished through lack of water and foraging grasses (Battye 1985).

The grasses on the river frontages where the waterholes dried up were under extreme pressure at this time, causing rangeland degradation and river frontage erosion, and exacerbating the erosion along routes used by travelling stock and teamsters (Webb 1983). During this period the grassmen and the managers of corporate holdings were unable to remove their stock to more congenial rangelands, or south to the farming regions. There were no roads, and vehicles for transporting stock were still far into the future. This difficult period no doubt taught the conservative grassmen the difference between a dry season, and a real drought, a common-enough occurrence throughout arid Australia, but little understood in the North West at the time (Heathcote 1994). In 1890 there were 2 524 913 sheep in the colony. By the time the drought broke over one million sheep had been lost. Pastoral lease expansion and development were seriously checked and it was not until after 1900 that the numbers again reached above the two million mark. Events occurred with the onset of the goldrushes, that enabled the pastoralists to

begin the arduous task of restocking their leases, with land in the upper reaches of the river basins also being selected, and enterprising individuals taking up leases along the tracks that were emerging as stock routes (SROWA 1891, PWD 2135).

6.4 Goldrushes, Mortgages, Loans and the Spread of Leases

The discovery of gold and other minerals was to provide economic relief for the struggling pastoral industry. Rich gold-bearing country was found in the Murchison basin and the Murchison Goldfield was proclaimed on the 24th of September 1891 (Heydon 1986). In the Ashburton basin gold was dug out in the Nanutarra Hills, whilst other minerals were found at Uaroo (Webb 1983) and copper at Ilgarrie at the headwaters (Barker 1977). In the De Grey basin gold was found and worked at Bamboo Creek, Talga Talga, and on the Nullagine, Coongan and Shaw Rivers. Gold was also found at Mallina and Whim Creek near the coast and outside the basin area (Hardie 1988).

Following the goldrushes, leases were quickly taken up throughout the river basins by a number of successful prospectors such as Beaton of Nullagine, who purchased several sheep stations after winning gold from the harsh environment (Edwards 1993). Enterprising businessmen, quick to sense good investments, included the butcher, South West farmer, and businessman Charles Smith (Barker 1994), and the grassmen-cum-businessmen Isador and Sydney Emmanuel of the Fitzroy basin. The latter selected blocks along tracks for spelling stock being droved from their Fitzroy leases to the goldfields (SROWA 1904-1913, Cons 4567, Item 080/1904-1913). Vacant Crown land (VCL) straddling and adjacent to the still unsurveyed stock routes was selected by them and others. They reaped the rewards from sales, as well as the butchering of animals, to hungry men in expanding mining towns such as Nannine, Cue, Day Dawn, Peak Hill and later Meekatharra in the Murchison, and Marble Bar and Nullagine in the De Grey (SROWA 1904-1913, Cons 4567, Item 080/1904 to 1913). Smaller mining centres were also catered for as other minerals were discovered and mined (Webb 1983).

Smith, with an eye for profit and not for grasses, was quick to seize the opportunity to make money from the goldrushes. His holdings were spread along the Peak Hill-DeGrey Stock Route 9700 and the Fortescue Stock Route 9698. They were to become the nucleus of Bulloo Downs and Ilgarrie Stations in the Ashburton basin (PLAP 93/300 1925), and the Marsh and Ethel Creek Stations in the Fortescue basin, which were later to experience problems through neglect (PLAP 80/300 1928) (Figures

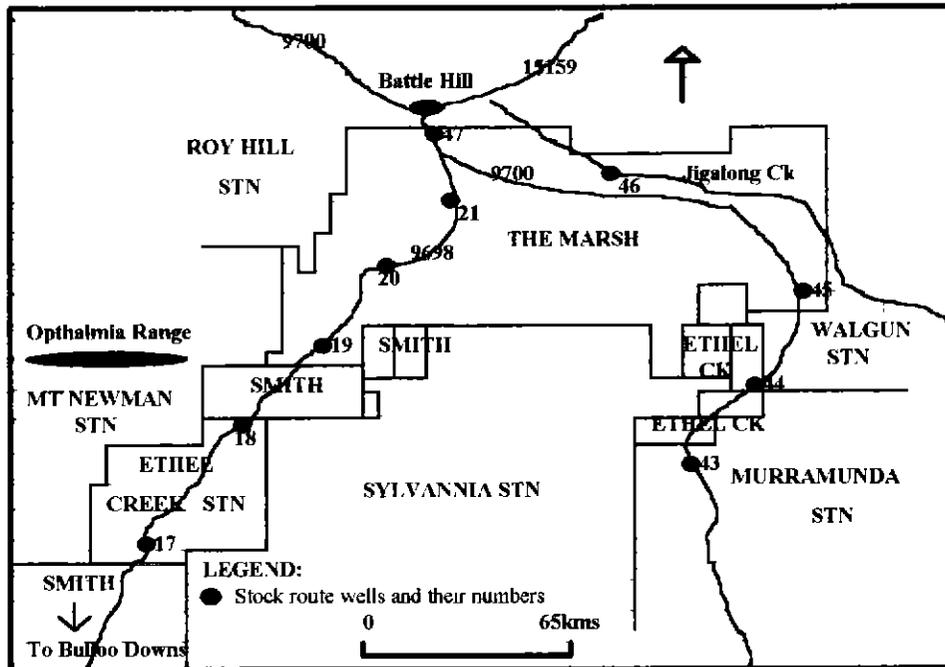


Figure 6.1: Smith's leases in the Fortescue basin. Source: PLAP 93/300 1925.

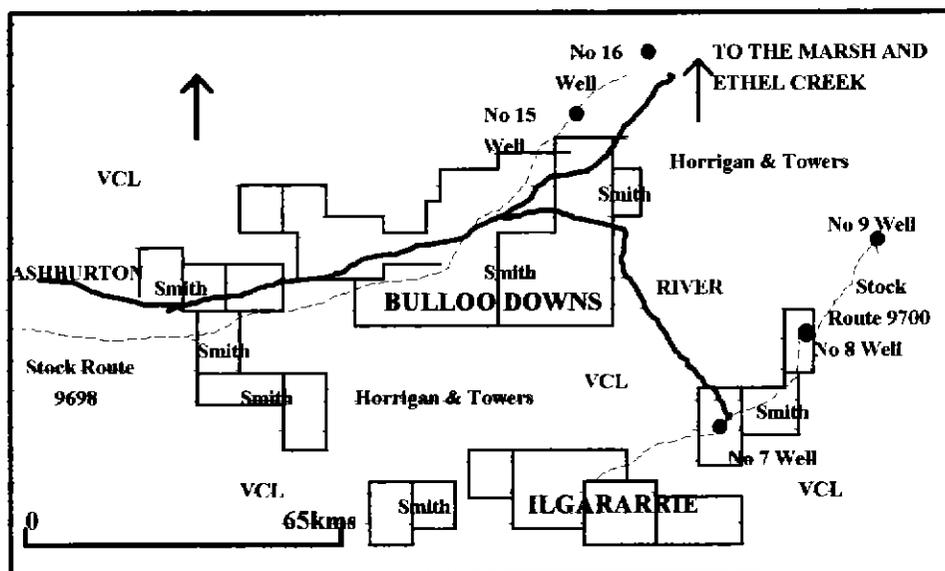


Figure 6.2: Smith's leases in the Ashburton basin. Source: PLAP 80/300 1928.

6.1 and 6.2), and Meekatharra Station near the town of the same name. The leases were astride the stock routes and, incorporating several wells, strategic locations for fattening, and spelling stock already enroute for the goldfields markets. Smith also held leases along the Gascoyne River, blocks in the goldfields towns, land in Geraldton, Bunbury and

Perth, a farm at the Greenough, and a sumptuous home in Guildford. After his death in 1912, they were inherited by his wife and sons, with the leases run by managers which had serious consequences in the future (SROWA 1914, Cons 3403, 345/13-50/14, Item 122).

Others followed Smith's example of purchasing leases astride the stock routes. In 1896 the Edgar family, after twenty-seven years of hard work, sold their leases on Muccanoo Station (later named Warrawagine) to the Darlot brothers. The brothers made full use of the DeGrey-Peak Hill Stock Route 9700 to drove cattle to Cue and their butchering business, as well as to their stations Berringarra and Byro in the Murchison (O'Grady 1995). Ernest Lee-Steere of Belele in the Murchison took up leases that incorporated the junction of four stock routes at Bilyuin south of Peak Hill. At first this was Innisfall Station, later amalgamated with Narracoota, then developed as Mount Padbury by returned World War I soldier William Martin (PLAP 73/300 1928). To the east Lee-Steere took up blocks after the construction of the Rabbit Proof Fence in 1905 and the Canning Stock Route in 1910, no doubt for spelling stock droved down from his Fitzroy basin Luluigui Station, which he held in partnership with others (SROWA 1904-1914, Cons 4567, Item 071/1). Though these leases would appear to be on the less congenial areas of the basins, the grasses were excellent. Water had been the problem to earlier settlement but technological advancement, combined with the profits gained from livestock sales on the goldfields, plus the development of windmills enabled these areas to be stocked.

Established grassmen on drought-ravaged leases, however, such as the McRaes of Coolawanya Station in the Fortescue basin, continued to rebuild and restock their leases, and to expand their operations with amalgamation of the original 41 000 -hectare blocks into large holdings complete with watering points, fencing, outcamps and homestead complexes (SROWA 1899, ACC 1384, AN3/9, Item 2619). After 30 or more years of development, some established stations were sold at a profit and their owners moved to more congenial climates as advancing years caught up with them. In 1912 Mark Rubin, a Broome pearl-buyer of some fame, purchased DeGrey Station from the Edgars, who had farms in the south near Gingin, and thus ended the association of the Victorian grassmen with the DeGrey basin (Edgar 1987). Rubin also purchased Warrawagine from the Darlot brothers who were holding leases in the Murchison basin, though they were based in Perth. The leases on the DeGrey, despite the ravages of drought and dry seasons, were well-grassed, denoting the care the previous grassmen had taken of the natural

resources. Rubin foresaw that the pearling business would decline and wool would become more profitable. He and his future general manager John Lyal Stewart, with Stone, a relative of Rubin's, had jackarooed during the early part of the century on Livennga Station in the Fitzroy Basin, and gained pastoral experience that was to benefit the further development of the DeGrey and Warrawagine leases (O'Grady 1995).

Apart from the goldrushes and technological advancement, another boon to the development of the leases was the availability of loans, more freely obtained since 1897 when lease tenure was extended to 30 years, which enabled the grassmen and corporate leaseholders to mortgage their blocks. Among the mortgage institutions available was the Western Australian Mortgage and Agency Company with which Robert Bush's leases were entailed to develop his large holdings in the Gascoyne. Dalgety and Company was a stock and station agency that also issued loans (SROWA 1891, PWD 2135). The KPC obtained a loan from that source in 1900 to finance the development of Livennga Station in the Fitzroy Basin (SROWA 1872-1935, ACC 4445A, MN149/2, Item 2). Walter Padbury, pioneer of the North West pastoral industry, with his partner Loton held mortgages over large areas of leases, including John Bernard Fitzpatrick's Daurie (later Dairy) Creek and Dalgety Downs Stations in the Gascoyne (Naim 1985, SROWA 1891, PWD 2135). PWD plans record dozens of blocks under mortgage throughout the North West. With the introduction of fencing wire, boring machinery and windmills as part of recent technological development and with funding increasingly available, leases spread throughout the river basins and beyond their boundaries and, except for the upper reaches of the Fitzroy River on the Kimberley Plateau, pastoral development had begun in earnest. By 1900 leases had spread in all river basins, with only the more arid areas of the DeGrey basin, the Hamersley and Ophthalmia Ranges in the Fortescue and Ashburton basins, and the upper reaches of the Fitzroy basin to be penetrated (Fitzroy 6.3). The more congenial locations along the river frontages, however, were still mostly held by the established grassmen and corporations. These were the first areas selected at settlement because, as discussed previously, of the availability of water.

6.5 Opening up the Kimberley Plateau

Frank Hann, in a bid to 'take up and stock any good country' (Hann 1896.9) explored the lands east of the Oakover River and the desert country south of the Fitzroy River. He was also the first to explore the Kimberley Plateau, travelling across the rugged King Leopold Ranges during 1986. He reported on the rich grasses that

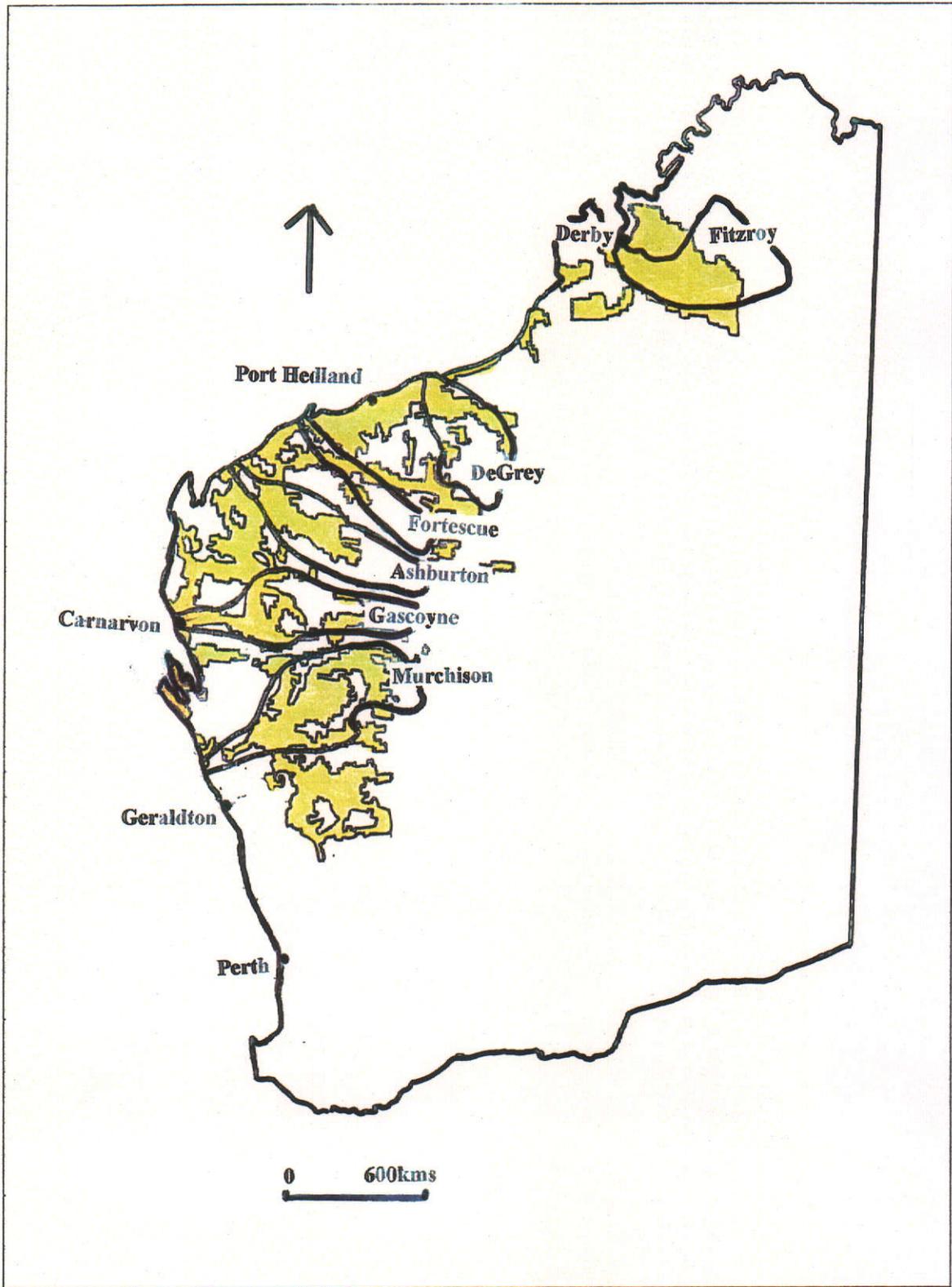


Figure 6.3: The spread of pastoral leases in the river basins to 1900. After Western Australia 1829-1979.

surrounded the flat-top mesa Mount House, in the valleys and on the small plains. Throughout his traverse, Hann noted that the plateau was good cattle country, well-watered with its numerous rivers and creeks, and well-timbered with coolibah, plum gum, bloodwoods, bauhinias, currajong, ironbark and baobs, whilst acacia dominated on the plains. He named the Adcock River, Bell Creek, Mount House, Mount Clifton, Sir John Forrest Ranges and the Lady Forrest Ranges and other topographical features. Hann also noted the fires that raged north of the plateau, a common feature in the river basin. With patriarchal perception he thought this land was too good for the Aboriginal people.

Another land rush commenced and, by 1901, all the Kimberley Plateau, plus the King Leopold Ranges, had been taken up by absentee owners including the Fitzroy River grassmen and companies. Only one individual, Joseph Blythe, appeared to be actually developing his leases, the rest being just lines on paper. Blythe had the Derby Hotel and other businesses, plus six sons and was desirous of taking up land for them (Battye 1985). Blythe at the time was managing the Emmanuels' Noonkanbah Station on the Fitzroy River floodplains. The Emmanuels, among the first overlanders from the Eastern Colonies, also held Margaret Downs, later GoGo, at the junction of the Margaret and Fitzroy Rivers (Bolton and Pederson 1980). At about that time as well, the country was traversed with great difficulty by surveyors Daly and Connors in an endeavour to map the ranges and the plateau (SROWA 1901, PWD 13199). Due to the rugged nature of the country, and the difficulty of droving stock over the ranges, other leases were not to be developed until well into the twentieth century. Aggressive Aborigines were also a deterrent to settlement on the plateau (Idriess 1951).

Upon the suggestion of Hann, Blythe took up leases surrounding Mount House in 1898 for breeding cattle. At the same time he took up Fairfield in the Oscar Ranges to fatten them (Battye 1985). He named his station on the plateau after the mountain and built a dwelling on the banks of the Adcock River, where a deep, permanent pool was available for fresh water. Blythe commenced his operation as a cattle unit, the formidable barrier of the King Leopolds preventing the movement of sheep (McAlary 1997). Sheep were mainly pastured on the Mitchell grass plains of the Lower Fitzroy River. Blythe's leases were taken over by his four sons Charles Christopher, Joseph William, Arthur and Mervyn in 1910. Having established the leases he then retired south, leaving Mervyn running Mount House, Charles responsible for the other leases, and the other two brothers with the businesses in Derby (Plate 6.2), (Pilmer 1998, Battye 1985).



Plate 6.2: The Blythes of the Fitzroy basin. Standing L-R: Arthur, Joseph William and Mervyn. Seated L-R: Joseph senior and Charles Christopher. Source: Pilmer 1998.

The westward-neighbouring Mount Hart was pioneered by Bill Chalmers and Felix Edgar in the early 1900s, whilst to the east cattle king Sydney Kidman had settled a manager, Tommy Fitzpatrick, on Glenroy (Idriess 1951). The station was later taken over by the Blythe family and run in conjunction with Mount House (McAlary 1997).

William Collins was the first to select leases in the Oscar Ranges at the foot of the King Leopolds in 1889. These leases became Oscar Range Station. A year later his cattle-droving brother John took them over and stocked them with cattle and horses. In 1897 the leases were sold to Alexander Edgar of DeGrey Station, with Collins purchasing a third-share in 1900 (Clement and Bridge 1991). In 1905 Collins died and Edgar continued to improve the leases until 1912, when he sold the DeGrey leases to Mark Rubin, and Oscar Range Station to Charles Blythe, then running a sheep-run on Brooking Springs Station (Edgar 1987). Blythe had also taken over the leases of Millywindy in the King Leopold Ranges in 1911 and was developing them into a cattle run (Battye 1985). The brothers were to remain in control of the plateau leases for a number of years.

6.6 Tropical Agriculture and Pastoral Leases

As railways and agriculture spread across the South West under the initiation of the Moore-Mitchell government (Crowley 1960), land was set aside, some of it being excised from established leases, in the North West river basins for tropical agricultural experiments and research stations. The government of the day harboured

hopes that some areas of the region would be suitable for agricultural development. Their misperception was astonishing, seeing that John Forrest had frequently traversed the country in earlier years and would have reported its poor potential for cropping. Furthermore, Forrest who owned pastoral leases, was supposedly well-versed in the natural resources of the rangelands. Be that as it may, in 1912, experienced Chief Inspector Alex Crawford from the Rabbit Branch of the Department of Agriculture was sent to examine country that might be suitable for agricultural experiments between Carnarvon and Roebourne. He was to take in the Gascoyne, Minilya, Lyndon, Cane, Ashburton, Robe, Fortescue and Maitland Rivers, and Duck Creek on the Ashburton. His report was far from encouraging.

Crawford considered that the soils in some parts of the Minilya River frontages were excellent but unfortunately the underlying artesian water was salty. The Lyndon River he recorded as emptying into a large salt marsh, as did the Minilya, and no fresh water was available. The land around the Yanarrie branch of the Ashburton was suitable and some water was available, but the distances from any port would make marketing problematic. There was good land either side of the Ashburton River upstream from the river mouth and some large river pools that could be utilised. The ground water, as the small population of the nearby town of Onslow well knew, was salty. He suggested that the pool at Upper Crossing, five kilometres from Onslow, and beyond tidal reach, could be dammed for around £2000. Subsequently the authorities considered that such an expense could not be justified, given the dubious ability of the land to support tropical agriculture and the vagaries of the climate (SROWA 1910, ACC 1778, AN3/24, Item 4790).

Crawford was to further state that the Cane River country was too rough and the Robe subject to much flooding on the good flats. There was some promising land about a kilometre from the Fortescue River's mouth, where a landing was available that was used by the grassmen for their wool shipments, though the area was small. The Maitland had good water reserves that could be enlarged, plus suitable land for agricultural experiments, and there were small areas on the Harding, with about 12 to 16ha near the Balla Balla River mouth, where the port for the Whim Creek mine was situated. The final river, the Wooramel south of Carnarvon, had suitable land for vegetable-growing, which one enterprising person was attempting, but after three years the artesian water had turned salty (SROWA 1910, ACC 1778, AN3/24, Item 4792.10).

Of all the rivers visited, Crawford considered the area on the Ashburton the most suitable, though there was no discussion on the aridity to which that area was subject, compared to the other basins, which suggests that little was known of the rainfall patterns at the time.

Crawford's trip thus failed to find suitable locations for the hoped-for agricultural experimental stations. Consequently the belief at the time that the floodplains of the North West could provide great opportunities for intensive agriculture was challenged but not forgotten (SROWA 1910, ACC 1778, AN3/24, Item 4790). No examination was done on the DeGrey River which was surprising considering Gregory's 1861 exploration report and his remarks pertaining to areas suitable for cotton. At the time of Crawford's visit to the North West however, DeGrey Station was in the process of being sold and thus an examination may have been difficult due to no leaseholder being on the lease. In Crawford's opinion the delta of the Gascoyne River would prove to be the most reliable area.

Such was the interest in developing tropical agriculture, however, that in 1913 land on the Gascoyne delta was excised from the Brick House lease and divided into lots. The Surveyor General at the time, Harry Johnston, reported that the climate was beneficial, where men could work all year without being inconvenienced by the weather. He was, however, opposed to large resumptions of land from Brick House Station due to the infrequency of the rainfall and the limited water resources for irrigation. He also made incidental reference to the indigenous saltbush which the settlers and Department of Agriculture had not learnt to utilise, unlike the ranchers of the western states of America, where it was planted and harvested into a fine quality hay. (SROWA 1910, ACC 1788, AN3/24, Item 4790). At Carnarvon, however, some tropical agriculture had commenced by private individuals and further land had been excised from Brick House Station by 1918, with 1230ha of saltbush pastures permanently reserved for the Department of Agriculture to use for irrigation experiments. On the northern side of the river a further 82ha fronting the stream were for garden plots (Figure 6.4), (SROWA 1910, ACC 1778, AN3/24, Item 4792.10). Private enterprise involving banana-growing in Carnarvon was proving satisfactory. Angelo and Angelo had been conducting such a business for several years and successfully grown bananas, all citrus, tomatoes, lucerne and maize on land originally part of the Brick House lease (SROWA 1910, ACC 1788, AN3/24, Item 4790). Reg Burt, diarist of Brick House, recorded the painting of the Angelo premises by the station employees, and his visits to the homestead, the name of the Angelo farm Leura,

and the purchasing of the company's vegetables (Brick House Station Diaries 1900-1959). In 1917 local MLA Edward Angelo, worried about the closeness of the Asian neighbours, lobbied to have more land opened up for tropical agriculture for returned servicemen (SROWA 1910, ACC 1788, AN3/24, Item 4790). In this he was partially successful (SROWA 1918, Cons 1384, AN3/9, Item 1049).

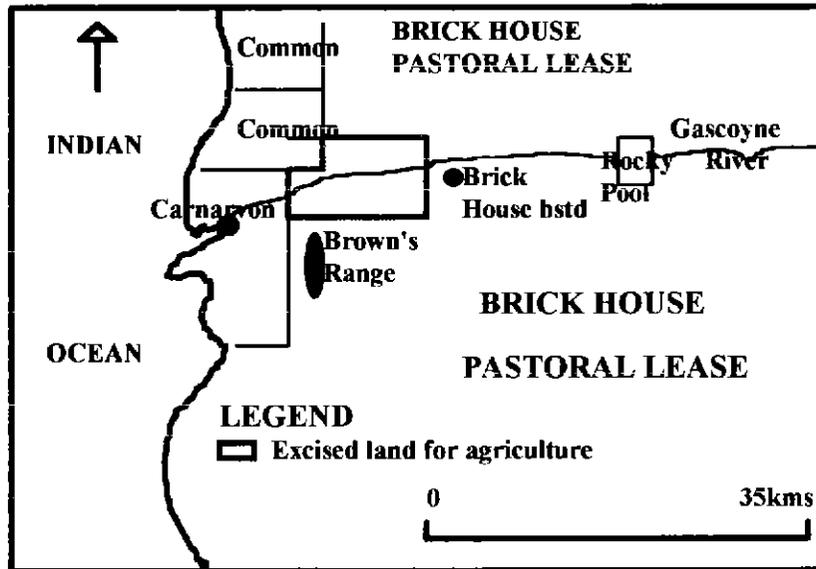


Figure 6.4: Excised land from the Brick House lease and Rocky Pool on the Gascoyne River. Source: SROWA 1918, Cons 1384, AN3/9, Item 1049.

Further investigations were conducted to develop the industry and ensure water supplies. James F. Moody, the State Fruit Industries Commissioner inspected the market gardens in Carnarvon, and land along the Gascoyne River east to Rocky Pool in 1917 (Plate 6.3) (SROWA 1910, ACC 1788, AN3/24, Item 4970). Rocky Pool at the time was reserved as a camping and watering place for drovers on the stock route (SROWA 1950, Cons 1755, AN3/9 Item 2908). He suggested that the large pool, 65 kilometres east of Brick House Station, would make an excellent storage reservoir, whilst Crawford suggested that a dam could be constructed at the Shipka or Kyber Pass in the Kennedy Ranges eastward at the river's junction with the Lyons River, and piped for irrigation purposes. Neither suggestion was carried out, as such schemes were considered too expensive and risky (SROWA 1910, ACC 1788, AN3/24, Item 4970).

The Brick House grassmen were to experience many excisions from their leases as the port of Carnarvon grew and the demand for public and private land, as well

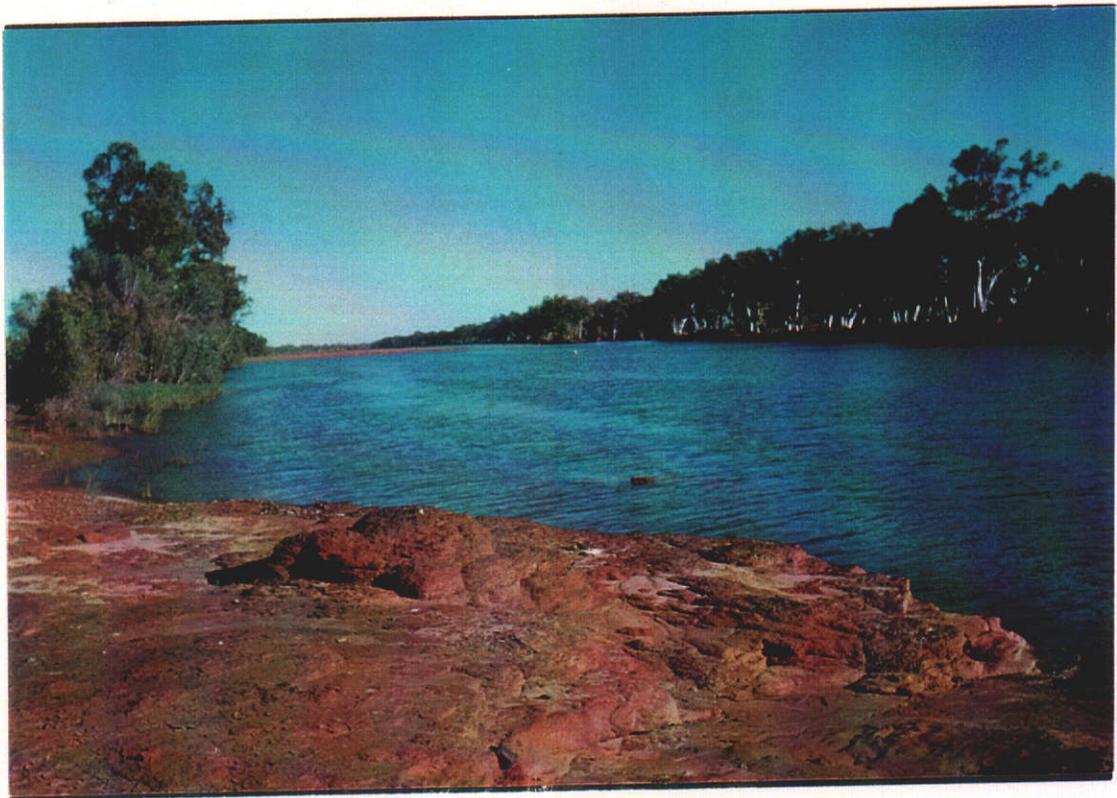


Plate 6.3: Rocky Pool, a permanent waterhole in the Gascoyne River and once part of the Brick House lease. 5th July 1996.

as for agriculture, continued in the ensuing years (SROWA 1918, Cons 1384, AN3/9, Item 1049). By 1928 there were about five small market gardens operating on the south bank of the Gascoyne River (Buzolic 1928).

Moody, however, was to complain that the Department of Agriculture was slow in taking up the land recommended by Crawford as suitable for agricultural experimental stations in the other areas of the North West. He was informed that the reasons for this neglect were that the climate was not congenial, despite Harry Johnston's earlier report, that it was impossible to conserve water from the rivers, that the hot winds were too severe, that the double-gees had taken possession of the river frontages, that the country was subject to long periods of drought, that termites were too destructive, and that resumption of river frontage land would ruin the grassmen (SROWA 1910, ACC 1788, AN3/24, Item 4790). Such was the voice of doom for experimental stations.

Nevertheless, land was excised from pastoral leases in the Fitzroy basin for tropical agriculture experiments in 1907. A 1230-hectare block was defined and

withdrawn from part of JA Game's lease and that of Sparke and Emmanuel (Luluigui Station) (Figure 6.5). The block was given the title of Lyveringa Agricultural Area and gazetted on the 19th of June 1907. Repeated requests for blocks from three people at nearby Myroodah Station drew perplexed letters from Clifton, the Under Secretary for Lands, who could not find the land in question, which, in any case, had not been thrown open for selection. Confusion in the Lands Department as to the exact whereabouts of the

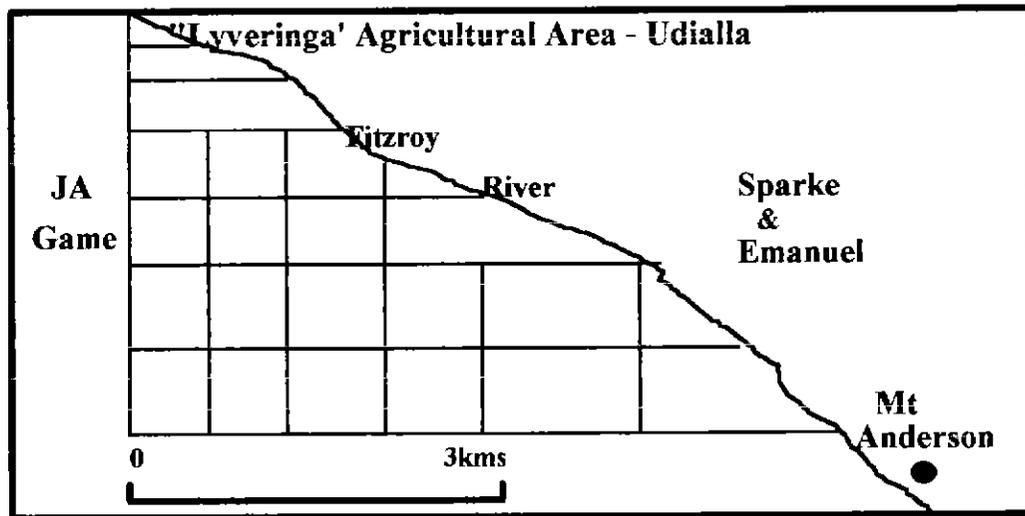


Figure 6.5: The surveyed blocks for agricultural purposes at Udialla in the Fitzroy basin. Source: SROWA 1907, ACC 1788, AN3/24, Item 3767.07, VI.

land requested by the people from Myroodah and requests from Clifton for lithographs to be marked and sent back were not carried out. The land in question was known locally as Udialla Springs and not found on any of the Department of Agriculture's maps. Furthermore, the Lands Department had spelt Liveringa with a 'y', whilst applicants had spelt it with an 'i', causing further bafflement. Surveyors were unable to make the trip north to survey the area into 41-hectare blocks and alleviate the problem, due to the lateness of the season and the irregularity of the vessels leaving the south. Surveyor Harry Johnston eventually was able to survey the land in 1912 (SROWA 1907, ACC 1778, Item 3767.07). He was to partially survey and explore the Fitzroy and DeGrey River basins at this time also under extremely trying conditions (Johnston 1962). Johnston suggested the area be known as the locally-named Udialla, leaving Liveringa reserved for the KPC's leases further upstream. He also reported that Charles Norman of Myroodah Station had already started a small farm on the site and was growing pumpkins, varieties of melons and rearing pigs, feeding the latter on the pandanus palms which were plentiful. He also

suggested that if agriculture was a failure, then the land could be set aside for teamsters, kangaroo shooters and shearers, stating that they could establish a home there and develop gardens during the wet season (SROWA 1907, ACC 1778, Item 3767.07). Unfortunately, during the wet season the area was subjected to flooding (Anderson 1997).

By 1914 Bickley and Bower attempted to purchase blocks, but their money was refunded as the lots still had not been declared available for selection in the Government Gazette. The Surveyor General's Office and the Under Secretary for Lands were reluctant to throw open Udialla as the blocks had not been priced pending the excision of further land along the Fitzroy. Meanwhile, Bower and Bickley were already in residence on their chosen blocks but had to wait until the 4th of December 1914 when they were able to officially apply for their land. As far ahead as 1922 further applications were received by people willing to try growing cotton and tropical food production on Udialla. Norman's farm was flourishing then, with a small brush house and sties for the pigs. The latter were to prove troublesome in the years ahead when they went feral. Some date palms had been planted also. Most of the other lots however, had not been improved and thus were cancelled. This agricultural attempt was therefore abandoned despite Norman's apparent success (SROWA 1907, ACC 1778, Item 3767.07). Presumably the venture was a failure through the difficulties of transporting the produce to markets in a saleable condition, and of seasonal inundation rendering land difficult to work.

Vacant Crown land on the pindan country on the northwestern rim of the Fitzroy basin was also set aside, and land excised from the northern boundary of Yeeda Station for agricultural experiments in 1910 (Figure 6.6). The area was surveyed by Harry Johnston and the Derby district surveyor A.W. Canning in 1912. Part of the surveyed area included Reserve 11607. At the time also, the West Kimberley Cotton Company attempted to grow cotton in the area. The seeds unfortunately were planted in an unfavourably hot and dry period. When the seedlings withered in the heat and died, the company abandoned the experiment. Fifty lots were surveyed on the land, which fronted a huge salt marsh. Grass on the lots was reported to be like a corn field, very coarse and like a wheat grass. Local grassmen were cutting it for chaff. A well was sunk on one lot and the water proved suitable for all uses. In view of the failure of the cotton venture, Johnston did not approve the land being sold to private individuals, preferring instead to have a research station set up for experiments, which was a more realistic perception. He also observed that during the wet season the land was inundated, and in the dry there were

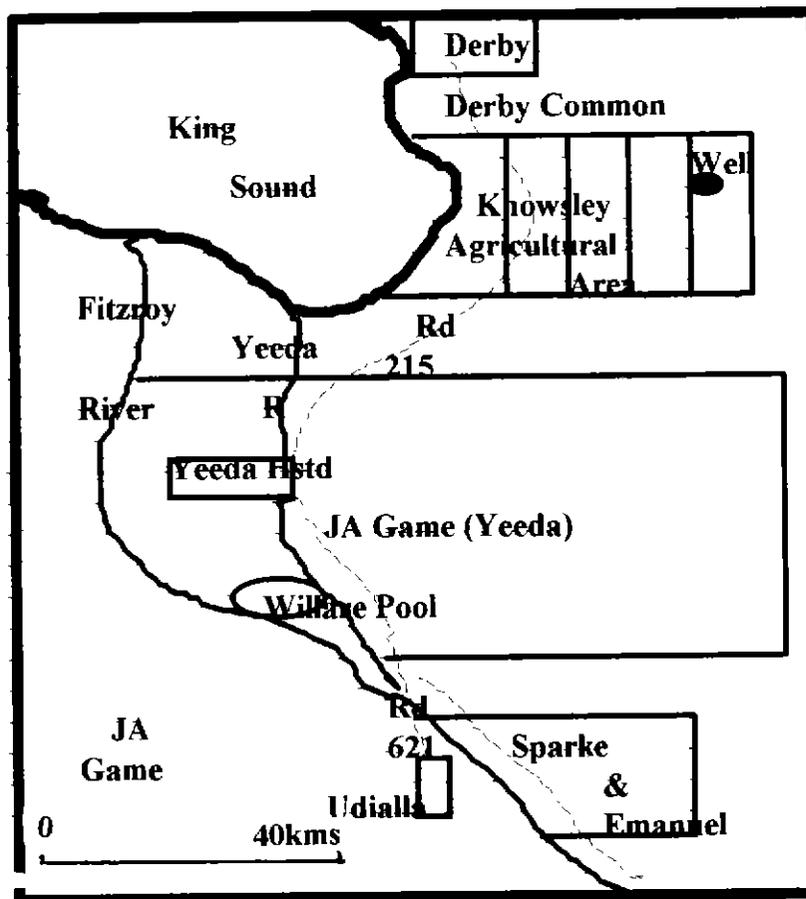


Figure 6.6: The Knowsley Agricultural Area in the West Kimberley and Udialla.
 Source: SROWA 1907 and 1910, ACC 1788, AN3/24, Items 3767.07 V1 and 4792.10.
 surveyed blocks for agricultural purposes at Udialla.

eight months without rainfall of any kind, with irrigation from wells impossible. Despite Johnston's recommendations the area was named the Knowsley Agricultural Area and was opened for selection in June 1915. In 1918, a man called Winter attempted to grow cotton but failed and another, Hughes, had taken up a lot, but it was not recorded what his land was used for (SROWA 1910, ACC 1778, AN3/24, Item 4792.10). Other cotton ventures were attempted in 1922 and 1923 and were also failures (Crowley 1960). Unfortunately investigation by the Department of Agriculture into soil types and their suitability for agriculture was still far in the future. Thus interest in agricultural experimental areas and in private irrigated agriculture dwindled in the Fitzroy basin, and was never commenced in any of the other areas. Only the Gascoyne River delta was to prove viable.

6.7 Land Regulations and Land Legislation

In 1890 the long-awaited Responsible Government was finally achieved with rural development its principal aim. The grassmen from the North West were active in the changeover and in the new Government, with some receiving knighthoods for services to the former colony. Its favourite son, explorer and grassman Premier John Forrest was knighted in 1892. Some of the first members of the new Legislative Assembly were the grassmen Septimus Burt of Brick House Station in the Gascoyne, who left his leases in the hands of a manager, then later his sons, to enter politics and represent the Ashburton; Everand Darlot, at the time holding Warrawagine in the DeGrey, and Byro and Berringarra in the Murchison; and Alexander Forrest, with interests in the Fitzroy basin, represented the West Kimberley. A fair number were also in the Legislative Council including Robert Bush, Edward Hamersley, Edmund Brockman, George Leake and James Morrison. Busy Septimus Burt was appointed Attorney General (Battye 1912). Thus the pastoral fraternity was well represented and its members used their position to lobby for longer lease tenure, ports, roads and other necessary services needed in their respective areas (Webb 1983). They, and the Government they were part of, as well as those they represented, hoped for better conditions in the North West. The Government also had plans for a viable, sustainable and lucrative industry governed by equitable laws, with a well-settled and thriving North West. The distance problem they appeared to ignore.

To prevent land speculation, control the soil and timber on the leases, extend lease tenure, and encourage lease development The Land Act of 1898 was devised (Land Act 1898). The penalty of lease-forfeiture for non-stocking within five years was a very important inclusion. The leaseholders were not granted rights to the timber or soil, though they could sell a portion of their leases back to the Crown for roads and timber, with the DL&S deciding which area of the lease was to be excised. Timber areas were excised from leases in the basins and the wood cut and used in developing towns and mine sites (All PLAPs). The uniform lease extension to 1928 was an incentive towards further development of stocking, fencing, and watering points. The leaseholders had to meet half the cost of the survey of their leases, a frustratingly slow and expensive operation, and to reside on their leases for six months for the first year and nine months for the second year. One-tenth of a lease was to be fenced within the first year and the entire lease enclosed within five years. After 15 years of holding the lease, expenditure improvements were to be at least the same as the purchase price (Land Act 1898).

Further land acts were proclaimed in 1906 and 1915. During this period land in the Kimberley, which included the Fitzroy basin, the North West, which then comprised the DeGrey and Fortescue basins, and the Gascoyne Division, which included the Ashburton, was available for leasing in blocks of 42 000 hectares for 10 shillings per 820 hectares annually. Pastoral leases within mining districts were obtained on the same terms, except the block size could not exceed 41 000 hectares or be less than 820 hectares (W.A. Yearbook 1906). Later provisions included in the Pastoral Lease, a precious document held by mortgagees, banks and the few lucky debt-free grassmen, stipulated that leases were held subject to the provisions of the Mining Act, 1904, and the Forests Act, 1918, which gave the right to the Minister for Lands to excise land from any lease for mineral exploration and extraction, and for timber purposes (Pastoral Lease 394/414, 1934). This inclusion continued into the modern era.

The Land Act Amendment Act 1917 was the most important to the grassmen of the North West river basins, however, and for the subsequent effect it had on the leaseholders, particularly the corporations. They were forced to reorganise their leases to comply with Section 30 (2) that stated 'The maximum area held by one person in the same Division shall be One million acres' (410 000ha) (Land Act Amendment Act 1917). The regulation affected leaseholders such as Robert Bush of Upper and Lower Clifton Downs and Bidgiemia in the Gascoyne, Charles Smith with his many leases that straddled the stock routes, and the grassman Mark Rubin with his DeGrey basin stations. They were required to dispose of land to conform to the new regulation or, as was the case with Rubin, form family companies. The 1917 Act also provided for VCL to be opened for the returned soldiers, and lease tenure was extended to 1948 (Land Act Amendment Act 1917).

As a result a number of ex-servicemen tried their hand at extensive pastoralism under the terms of the newly-devised Discharged Soldier Settlement Act, 1918. Evan Bain and his partner received a grant of £1000 each to take up new leases in the Upper Gascoyne basin which had to be stocked within two years at the rate of ten sheep or two head of large stock per 410 hectares (1000 acres). Later, Bain and two new partners were developing the leases into Woodland Station, and the two years swiftly passed with well-sinking and the constant search for suitable watering points. They had to hurriedly purchase 200 head of mixed cattle from Lee-Steere's Annean Station in the Murchison in order to meet improvement conditions (Bain 1990).

Some of the leases taken up by returned soldiers were already partly developed. In the DeGrey basin Abraham Davis and Maurice Aaron, relatives of Mark Rubin of the Warrawagine and DeGrey leases, had in 1912 occupied the DeVahl Station, situated near the desert on the northern boundary of Warrawagine. Davis died when the *Koombana* went down during a cyclone in 1912, cutting off his brief ownership, and Aarons continued to develop the lease until the Great War, when he left to serve in France. He died there in 1915. The station was managed by Archie Swan for their estate, with Rubin being the Executor of the Will. At Rubin's death in 1919, also in France, DeVahl was taken over by returned soldier Raife Darlington who renamed it Callawa (O'Grady 1995). Thus, while leases spread into the unoccupied areas of the headwaters of the river basins, other relinquished leases were re-allotted to soldier settlers. Though some of the leases were located in the more arid areas of the basins, along the upper reaches of the rivers, and thus were more prone to dry seasons, grasses were good and well-sinking was an increasingly important part of station management.

The 1917 Act required leaseholders to increase their stock numbers to 20 head of sheep per 410 hectares (1000 acres) or the equivalent of large stock within five years and then to 30 head of sheep or large stock equivalent per 410 hectares for the remaining term of the lease. The compulsory increase of stock numbers was to have far-reaching consequences for the rangelands. It was at this stage that the stocking rate applied to all leases, whether in the more congenial river front locations, or the arid upper reaches of the basins, whether the lease be a large, well-grassed one, or a small, sparse lease bordering the deserts. This constraint was to have a devastating impact on lease development and the pastoral industry in the future when a major drought occurred. The Act demonstrated the ignorance of the Perth-based Government and its agencies of the types, conditions and relative fragility of the rangelands in the North West.

By 1930 pastoral leases had spread beyond most of the river basins except into the inhospitable Hamersley, Chichester and Ophthalmia ranges of the Pilbara. Other areas free of leases included mining regions, and the sand plains between the Murchison and Wooramel Rivers (Figure 6.7). Lease development and amalgamation was a continual process and the Government, its agencies, and the grassmen themselves had, at that time, high hopes of a settled North West and a sustainable and productive industry.

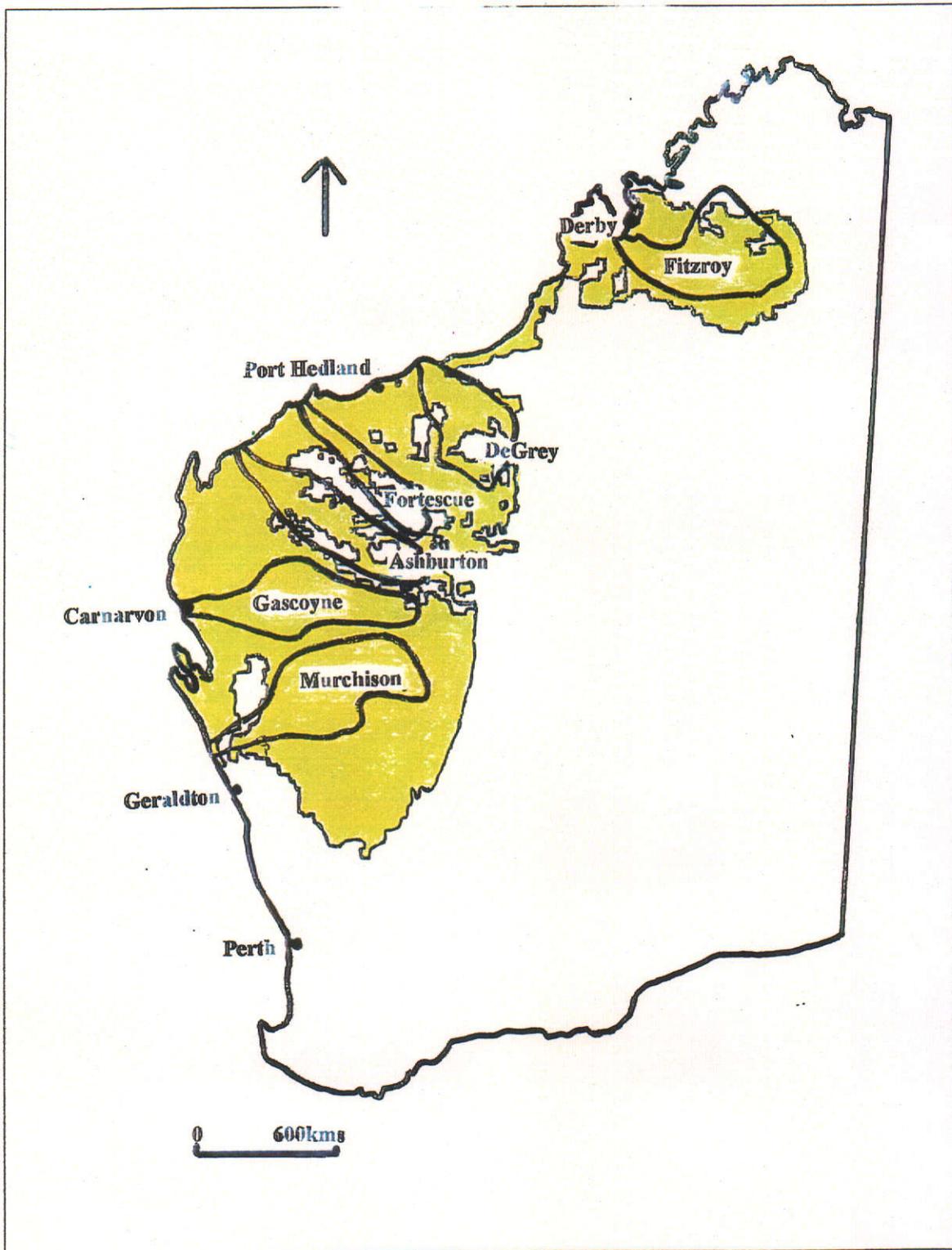


Figure 6.7: The spread of pastoral leases from 1901 to 1930. After Western Australia 1829-1979.

6.9 Conclusion

It was during these turbulent years that were assisted by the major gold discoveries, that leases in the river basins under study were more fully developed, amalgamated, and sold. Grassmen expanded and intensified their operations until homestead complexes eventually resembled small villages, with housing for the necessary white and Aboriginal workers, and buildings to accommodate the essential station plant and equipment. Government agencies, with their ideas of lease development in place pursuant of the Land Acts and marked on their plans, envisioned a settled North West, with well-stocked amalgamated leases, sufficient watering points, and fenced paddocks. They expected viable, profitable units that would fill the empty land, requiring only maintenance on behalf of the grassmen and the corporate managers, and the minimum of input from themselves, except to collect the rents and excise land where necessary. Accompanying the expansion however, was the intensification required by the Land Act which would cause problems in the future. The official expectation of increased stock numbers and intensified leases paid no heed to the limited and geographically varied sustainability of the rangelands' natural resources. Attempts at tropical agriculture also were largely unsuccessful, except at the mouth of the Gascoyne River, where the intermittent flooding of the Delta land system provided the necessary environment to establish the beginnings of the banana plantations and market gardens.

Chapter Seven

Mineral Fields, Infrastructure and Services to the Mid 1930s

7.1 Introduction

The half-century after 1890 was a major growth period for the pastoral industry and the services which supported it. Revenue from the goldrushes and a much improved financial standing enabled the Government of Western Australia to provide a greatly expanded, albeit limited due to vast distances, program of public works, with the hope that closer settlement would follow. In association with the goldrushes, which aided the development of grazing enterprises in the six river basins in the North West, nearby pastoral properties were quick to use the initiative to establish services that assisted travellers, and to supply a ready and accessible market for meat. The rushes provided important infrastructure and growth for the tiny ports and ushered in a system of law and order in the outback. Goldrushes however, were an element of risk, and the townships which flourished at the onset, mostly waned as the mineral resources declined. A boon to the pastoral industry during this period however, were the railways constructed through the Murchison basin to the goldfields, and later from Port Hedland to Marble Bar in the DeGrey basin, though isolation confined the service to particular regions. Travellers were also more common as technological advances were accomplished with the introduction of the motor car, the lorry and the aeroplane. Radio during this period was still in its infancy.

7.2 Goldrushes and Law and Order in the Outback.

With the decline of the Halls Creek rush in the East Kimberley and the finding of gold in the DeGrey basin and the upper Murchison in the late 1880s and early 1890s, miners set out by the hundreds for the new fields which were mainly situated on the headwaters of creeks and rivers. In the Fitzroy basin the Liveringa Station diarist was to record the men passing through the station on the river road, with some seeking work whilst others were anxious to keep travelling to the new fields (SROWA 1899-1935, Cons 1240A, MN149, Items 1-13). From the Halls Creek fields Camilleri and his party travelled down the Madman's Track, a notorious waterless stretch from the West Kimberley following the Eighty Mile Beach, passing through Wallal and Pardoo Stations to DeGrey Station in the DeGrey basin. He reported on the stores which he purchased at the station homestead, and on the hospitality extended by the Coppins of Yarrie Station further inland along the DeGrey River, on his journey to Marble Bar and the Nullagine

fields (Cammilleri 1986:24-25). Tracks leading inland from the little ports to the diggings were pounded into rough roads by the drovers, miners and teamsters. At the diggings themselves the grassmen and station managers were able to provide meat, take up carting, run coach lines and open stores, as did the Darlot brothers with their leases in the DeGrey and Murchison, Ernest Lee-Steere with leases in the Murchison and Gascoyne (O'Grady 1995), Townshend of the Coodardy lease in the Murchison (Heydon 1990), and the manager of Robert Bush's Bidgiemia Station near the Junction in the Gascoyne (McDonald 1991).

Money from the rushes provided the required law and order for the goldfields, and police depots and wardens' offices were established. The grassmen, particularly in the Fitzroy, Ashburton (Webb 1983) and Gascoyne (McDonald 1991) basins, had long lobbied for police protection against marauding and warlike Aborigines, and the rushes provided a further incentive for the progress of this important service. In the North West basins, policemen were based in the towns and at isolated depots. The police searched for miners when they were lost, kept a census of strangers passing through, helped miners when they were ill and buried them when they died (Forrest 1996). They also apprehended the Aborigines for the spearing of stock, pilfering of goods and patrolled their areas in the attempt to prevent blackbirding by the coastal-based pearlers (Neville 1935). They also pursued horse thieves (Pilmer 1998), searched among the prospectors for those without miner's rights (Heydon 1990), and accumulated Aboriginal artifacts, abandoned for the European's tools, for museums and private collectors (Forrest 1996).

The rivers and creeks of the Murchison basin's headwaters were dotted with mining camps. The first finds were at Lake Annean, on Cruickshank's Annean Station (Heydon 1990). Other finds were Day Dawn, Cue, Cuddingwarra, and the Lake Austin islands (Heydon 1986). Luke's Creek grew into the township of Meekatharra, with smaller mining fields at Abbots near the Yalgar River and Peak Hill on the Murchison River headwaters (Figure 7.1), (Heydon 1991, PLAP 1928, 78/300). A government-owned battery had been operating at Peak Hill as early as 1896. Despite the establishment of timber reserves, miners were not averse to getting wood from other sources. In Peak Hill a privately-owned 10-stamper battery was constructed using timber cut from the trees edging the Gascoyne River 50 kilometres to the north (Heydon 1991)

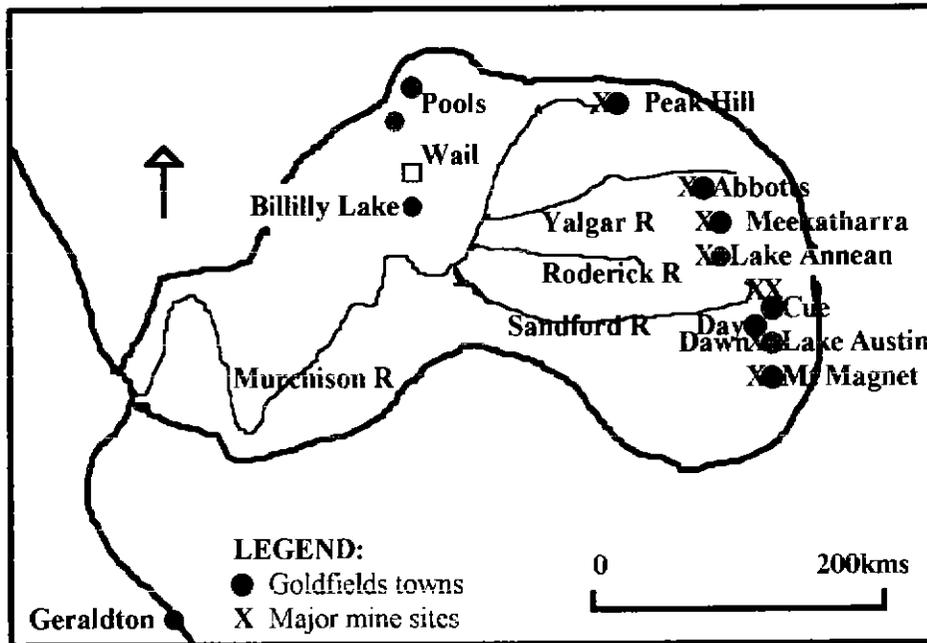


Figure 7.1: Goldfields towns and some mining sites in the Murchison basin.

In 1913, despite dwindling mineral resources in some centres and in the belief that the Day Dawn gold would continue, further land was excised from Townshend's Coodardy lease for a rifle range (Government Gazette 1913). Day Dawn was already a booming town with hotels, boarding houses, business houses, an assayer's office and private dwellings.

The previous isolated police depots were closed and officers were relocated to the new mining towns. Mount Gould, formerly Berringarra Police Station on Location 1412 (SROWA 1905-1909, Cons 4567, Item 072/1), was closed in 1903 (McDonald 1991), later followed by Mount Labouchere. Inspector Paddy Troy was based at Nannine to check the men for their miners rights (Heydon 1990).

In the Gascoyne basin the Horseshoe goldmining fields were north of Peak Hill in the vicinity of the river's headwaters (SROWA Cancelled Public Plans). Mining was also carried out at Bangemall on Edithana Pool near the Lyons (Figure 7.2) (Pilmer 1998). In the central Gascoyne the Junction depot had been operating since the 1880s, the police quarters located on an island on the north side of the Gascoyne River (Upper Gascoyne Shire 1996) The land on which it stood was gazetted as Police Reserve 731 (PLAP 1928, 77/300). Because Stock Routes 9701 and 22338, and the Road 3612 (PLAP 1928,

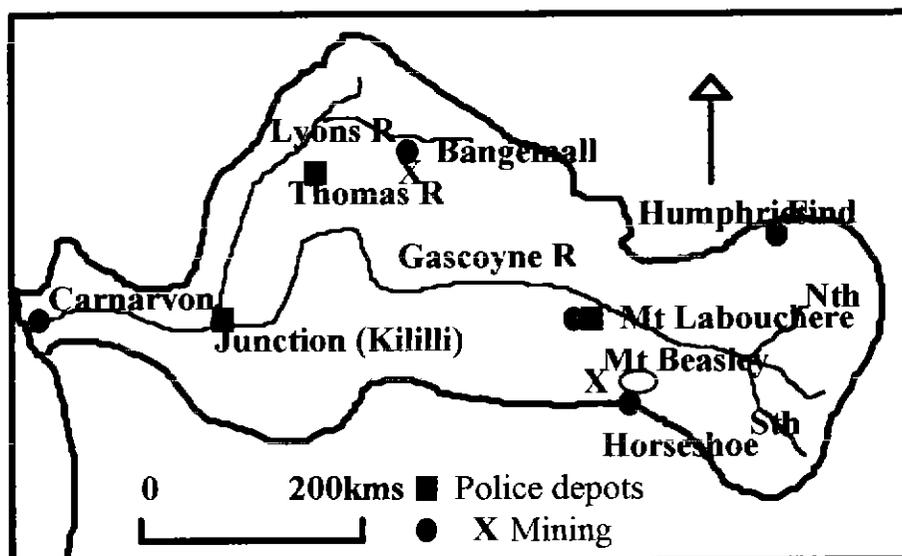


Figure 7.2: Police depots and mine sites in the Gascoyne basin.

78/300), and part of the Roebourne Road following the Lyons River northward all converged at the Junction, the site was an obvious choice. The depot was manned by two mounted constables and two Aboriginal assistants. The Junction was gazetted as a town and given the name of Killilli in 1913. It would later become Gascoyne Junction (McDonald 1991). The Gascoyne leaseholders had long demanded police aid and had finally received it. The depots of the Murchison and Gascoyne however, were still part of the huge Geraldton Police District. To reduce the distances travelled and to further facilitate police control in 1912, the Junction, Shark Bay, Carnarvon and Onslow were hived-off, to become part of the Gascoyne District (Upper Gascoyne Shire 1996). A depot was also located on the Thomas River in the basin, on the Yinnietharra lease, and manned by an ubiquitous officer named Pilmer! Like the Mount Gould depot, and as the indigenous troublemakers were brought under control, Thomas River closed in 1903 but the Junction depot remained operational (McDonald 1991).

The Pilbara Goldfield included small mines on Mallina Station and the nearby Whim Creek, and the Towerana and Astor mines owned by the Withnell family (Edwards 1993). In the DeGrey basin there were the Bamboo Creek Mines, plus Talga Talga and Woodie Woodie on the Oakover River. Marble Bar, gazetted as a town in 1893, was on the Coongan River headwaters (Hardie 1988). The Lalla Rhook mine was

developed on the station of the same name on the Shaw River (PLAP 1929, 109/300). Southeast of Marble Bar the rich Nullagine fields were worked on the upper reaches of the Nullagine River (Figure 7.3) (Hardie 1988, PLAP 1924, 110/300). On Warrawagine a lead

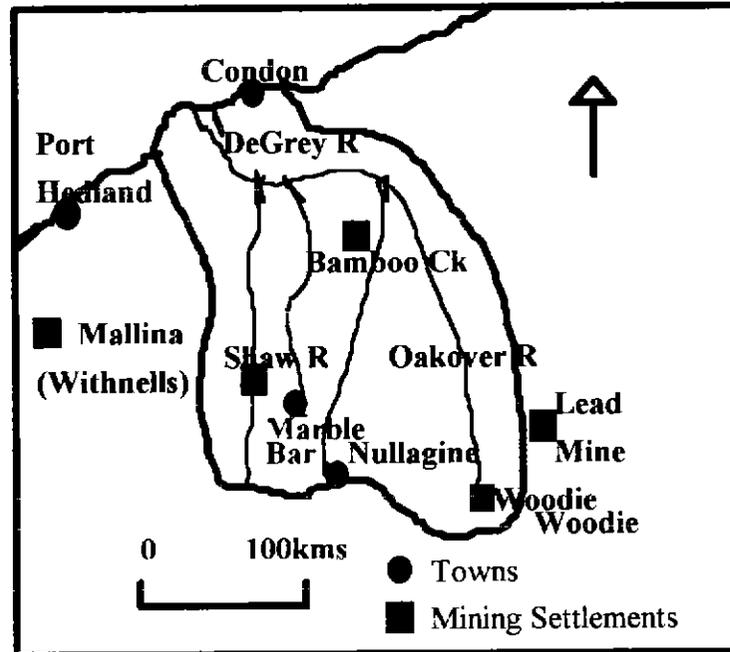


Figure 7.3: Mining settlements and towns in the DeGrey basin and outer regions.

mine was opened outside the DeGrey basin but within the station lease (O'Grady 1995). There were police depots at Mallina and Bamboo Creek by 1906. In the Fortescue basin, due to skirmishes with Aborigines, an itinerant policeman was sent to patrol the Hamersley Ranges. Police Constable Finucane was to suffer great privations with starving horses and shortage of rations while based there (Forrest 1996).

Mineral exploration and the development of the pastoral industry encouraged the growth of the small ports. In the DeGrey, Condon was re-gazetted as Shellborough and a new town plan developed, with a new bonded store constructed by 1896 (SROWA 1894-1896, PWD 4225, 3&4). Port Hedland, gazetted in the same year, began its life as a deepwater port to serve the inland mines and the pastoral industry (Hardie 1988). The growth of the town eventually resulted in the demise of Condon.

The Ashburton basin experienced a brief goldrush during the 1890s, which was curtailed by the severe drought and the departure of men leaving for the

newly-opened and more promising Murchison fields (Figure 7.4). Mining recommenced in a later period and included the Uaroo silver and later copper mines (Webb 1983), the

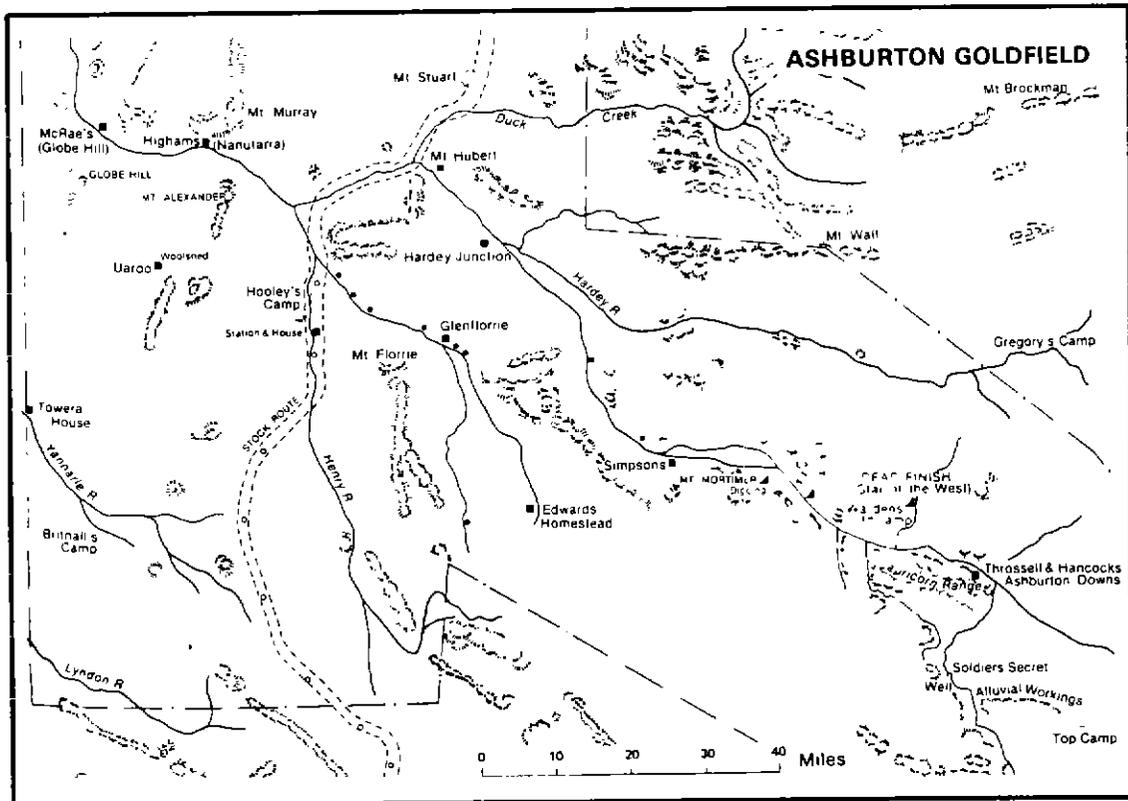


Figure 7.4: The Ashburton Goldfield. Source: Webb 1983

Taranadgie silver patch at Yanrie, and the Peake amethyst mine (Forrest 1996). Other diggings included the Mount Mortimer mining area, the alluvial fields on Wandarray Creek, the Dead Finish mine at O'Grady's Creek, and mines on Irragully Creek (Figure 7.4) (Webb 1983). Further east the Ilgararrie copper mine was operating within Charles Smith's lease of the same name (Barker 1977) Throssell and Hancock on the Ashburton Downs lease took advantage of the mining camps by selling meat and stores to the men (Forrest 1996). The Mount Mortimer police depot was opened in 1890 near O'Grady's Creek on the future Kooline Station. It was central to the five main diggings (PLAP 1925, 93/300). The police patrolled 130 kilometres in each direction, visiting more than 600 men (Forrest 1996). In 1893 due to the drought and the consequent shortage of water, the police depot was moved to Onlso. Constable Pilmer, formerly of the Thomas River depot, was based there for a season (Webb 1983). After the miners had left, a policeman and his tracker patrolled the remaining mining areas (Forrest 1996). A policeman was

based on the Roebourne Tablelands near the Coorara Store at the junction of Duck Creek and the Ashburton River, to deal with the troublesome Aborigines in that area (Webb 1983).

Most of the first men on the mineral fields were fossickers gathering alluvial gold, and therefore of little long-term benefit to the pastoral industry in the river basins. Deep mining followed however, when the rich reefs were discovered and companies were floated by groups of men seeking capital to develop their mineral leases. When gold was discovered in the Murchison, the newly-formed State Batteries Branch of the Mines Department had the responsibility for providing batteries to crush the ore of the fossickers and small companies on the goldfields. Eighteen state batteries were constructed throughout the region (Abraham 1958). Such was the faith in the Bamboo Creek gold in the DeGrey basin that a state battery was constructed and gazetted in 1913 on Reserve 15156 (Government Gazette 1913), when other mining areas were already in decline. The thump, thump of the batteries crushing the ore reverberated across the neighbouring rangelands that had only known silence before.

By the 1920s, however, only a few isolated mineral fields were operating in the river basins, whilst the population of mining towns such as Day Dawn, Cue, Peak Hill, Nullagine and Marble Bar had dwindled. Many of the smaller settlements had been abandoned. In 1910 most of the few hardy souls at Peak Hill remained only because the town was on the Meekatharra-Marble Bar mailrun. Horseshoe, to the north of Peak Hill, was abandoned about the same time (Heydon 1986). Nannine's population declined, though mining was to continue on a small scale for a number of years (Heydon 1990). The remaining towns in the river basins owed their continued existence to the pastoral industry and the few hardy prospectors. Only Meekatharra, with its deep mining, was experiencing a boom of growth at the time (Edwards 1994).

Although there was no mining in the Fitzroy basin, police depots were established to apprehend Aborigines for murder, pilfering and spearing of stock (Figure 7.5). Such was the resistance of the Aborigines to the leaseholders in the Lower Fitzroy basin, that several depots were established within close proximity to each other. Constable Pilmer was transferred from the Mount Mortimer depot in the Ashburton to Derby in 1894. In the same year Pilmer was directed to establish a police station at Fitzroy Crossing, which at that time had only a telegraph station (Pilmer 1998). The Mount

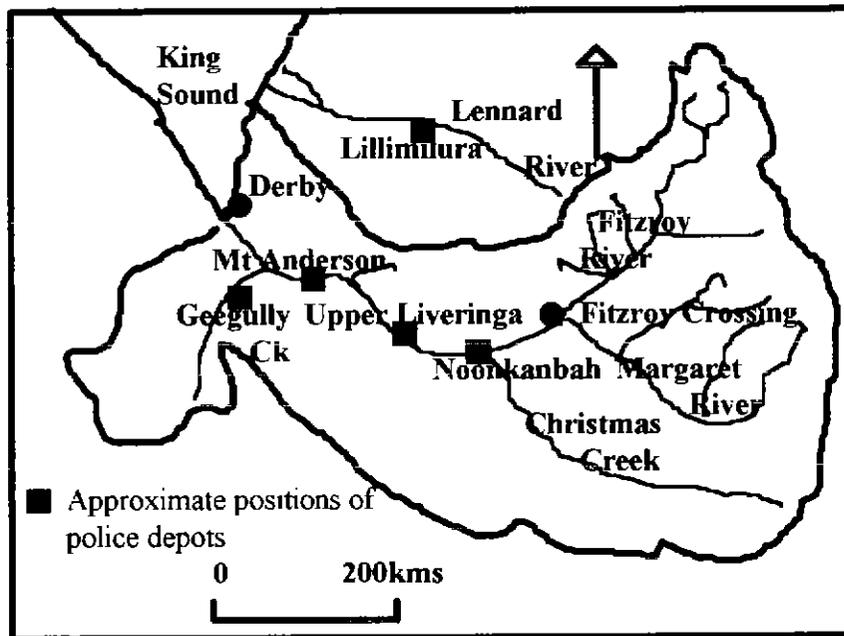


Figure 7.5: Police depots of the Fitzroy basin.

Abbott depot, labelled Police Camp, had been established on Noonkanbah Station. A police outpost was also established on a hill between Upper Liveringa and Mount Anderson Stations. It too, was locally known as Police Camp. The Aborigines called it jirrup (Anderson 1997). Across the Fitzroy River from this point was another police camp at Geegully Creek on Luluigui Station. Lillimilura, an abandoned cattle and sheep station at the foot of the Oscar Ranges in the Lennard River basin, also contained a police depot manned by Constable William Richardson. In 1894 Richardson was killed by the Aboriginal outlaw Pigeon. It was the eventual death of Pigeon in 1897 after a long manhunt that marked the end of Aboriginal resistance in the Lower Fitzroy basin (Pilmer 1998). Across the King Leopolds on the rugged Kimberley Plateau, however, Aboriginal skirmishes and police punitive expeditions continued well into the 1930s (Idriess 1951).

It was the pastoral industry that saved the declining goldfields towns which became both social and service centres for the local rural population. Typical inland towns were Marble Bar in the DeGrey and Meekatharra and Cue in the Murchison, while Carnarvon in the Gascoyne, Derby in the Fitzroy and Port Hedland near the DeGrey were ports providing vital linkages with the outside world. Killilli, or Junction, in the central Gascoyne basin existed on a very small scale. In the process of landscape change however, the ruins of mining activities and police depots dotted the landscape, whilst the pastoral

industry continued to endure, expand and grow, adapting to, and using, whatever goods and services could be provided, which also included abandoned materials from the goldfields for station development, and creating its own cultural landscape in the process.

7.3 The Development and Usage of Stock Routes

Hopes of officialdom that the goldrushes in the North West would be followed by a wave of closer rural settlement were not realised, however. In reality, with the dwindling mineral resources the pastoral emptiness remained, visited by trundling wagon teams, flying Cobb and Co mail coaches, droving teams, gold-seekers, police patrols, wandering tradesmen, hawkers and occasional motor cars travelling over existing rough and hazardous tracks mostly located in the centre of the stock routes, which were relatively busy and troublesome thoroughfares a kilometre-and-a-half wide. The tracks were to be a source of contention between government road officials, leaseholders and townsmen for many years, particularly after the arrival of motor vehicles. The stock routes of the North West were the major linkages for the grassmen in the river basins. The routes enabled larger mobs of stock, compared to the small consignments shipped out at the ports, to be driven from anywhere within the basins to the southern markets (Figure 7.6).

North of the DeGrey basin the notoriously sandy Madman's Track along the Eighty Mile Beach was a deterrent to bringing stock down from the Fitzroy basin and other parts of the Kimberley to the goldfields or markets in the South West. The government constructed wells along this inhospitable stretch of pindan country after the drover Nat Buchanan (Plate 7.1) pioneered the route in 1892, by droving 900 bullocks to

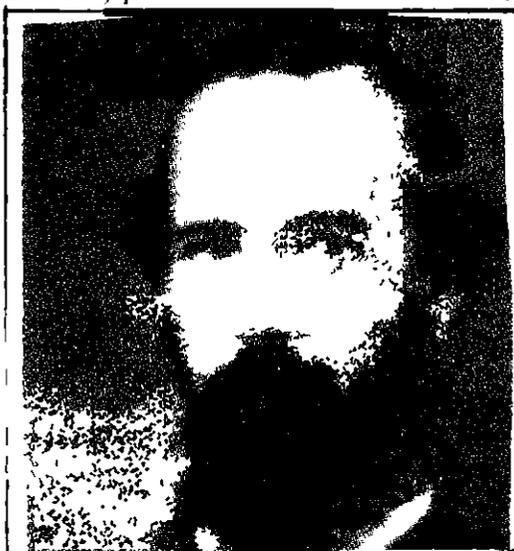


Plate 7.1: Nat Buchanan Source: Barker 1994.

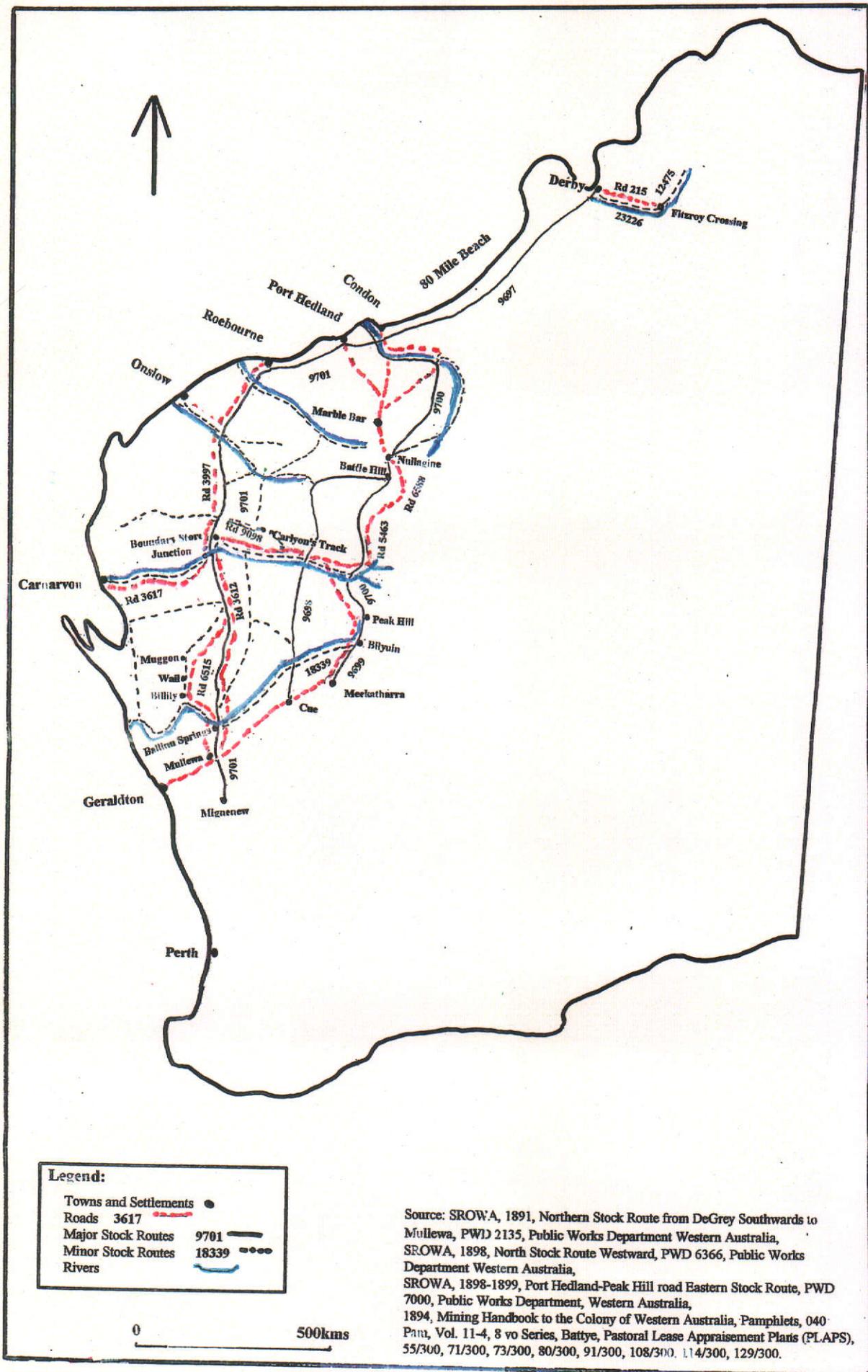


FIGURE 7.6: Stock routes, roads, towns and settlements to 1935

the goldfields (Barker 1994). The route was gazetted as Stock Route 9697 (SROWA 1898-1899, PWD 7000). The wells in 1896 were approximately 6 metres deep with reasonably fair water which unfortunately, according to Hann (1896) became stagnant for want of consistent usage and a better route was needed. Whilst on the same journey, Buchanan was also credited with pioneering the route from the Fortescue headwaters to the Murchison goldfields, a distance of 240 kilometres. He reported on the plentiful feed of saltbush and mulga from Roy Hill Station in the Fortescue basin, through to Meekatharra in the Murchison (Barker 1994). This section was developed as Stock Route 9700 (PLAP /300 Plans). To further enable the movement of stock, routes were surveyed and gazetted from Port Hedland to Peak Hill by R.H.B. Downes in 1898 and 1899 (SROWA 1898-1899, PWD 7000). The PWD acquired land at strategic locations on the routes and put down wells (PLAP /300 Plans). Linking routes branched out to provide access for the isolated leases in the basins, such as Stock Route 9698 from Battle Hill to Cue, branching westwards off Stock Route 9700 (Figure 7.6) (Government Gazette 1913). Minor thoroughfares were also evident along the river frontages, providing linkage across the rivers to major routes within the basins, with some gazetted but too numerous to mention here.

Shortage of feed was a normal occurrence on the stock routes. In Mullewa, where regular stock sales were held after the arrival of the railway, sheep were coming down the routes in large numbers. It was not unusual for Dalgety and Company to sell around 10 000 sheep at one sale and sales were held on a fairly regular fortnightly basis. In 1911 30 000 sheep were droved south at the same time on the Mullewa-DeGrey Stock Route 9701. In the six months from January to June in 1924, 80 000 sheep and 800 head of cattle passed Boundary Store on Stock Route 9701 in the Gascoyne. The year before there had been a shortage of feed on the stock route, which held up 100 000 sheep waiting to be droved south (Keeffe 1994). Thus even before the mid-1930s drought, the routes were suffering from an onslaught already exacerbated by conditions experienced during the 1890-1892 drought.

7.4 Drovers and their Teams

Drovers were of primary importance to the pastoral industry, providing the necessary skills needed for the movement of the stock from the stations to markets and vice-versa. Most grassmen had their own drovers among their stockmen, shifting large mobs of stock. Expert drovers were employed who had their own plants. Barker

(1994:1) states that a droving plant moving 10 000 sheep normally consisted of a cook, horsetailer, the boss drover, five men, 20 to 30 horses and a drover's cart, which was loaded with:

swags, tents, tucker, cooking gear, camp ovens,
shoeing tools - including a small anvil - calico
strip for making a yard for the sheep at night and
wooden pegs to drive into the ground to hold it up

Such plants were common on the stock routes through the river basins prior to the 1930s drought. Cattle were mostly driven in mobs of 1200 where there was plenty of surface water. A cattle droving plant had up to 80 horses and mules, plus camels, to move 600 or more head of cattle down the stock routes. On the Canning route the journey from Hall's Creek to Wiluna took up to nine months (Edwards 1993). If the stock route had only wells, the animals went in mobs of 500, as watering them was a lengthy process. Even then, however, feed along the stock routes was often scarce and Barker (1994:50-51) recorded that most stock routes followed the rivers and creeks, thus placing the grasses along the river frontages under extreme pressure. Stock routes passed through pastoral leases and, though land was excised for the routes, the rangeland was still in use by the station stock until the surface waters dried up, as it was illegal for leaseholders to use the stock route wells. Thus their sheep often ate the grasses out and the drovers passing through the leases had difficulty finding enough forage for their stock. A drover might also find the grasses eaten out by the sheep of previous droving journeys.

Primary sources and biographies indicate that droving teams passing through the stations on the major and minor stock routes were always escorted by the grassman or one of his employees to ensure that the stock did not eat the precious grasses of his lease. On the minor stock routes the concern was for water. Grassmen and managers alike would not allow a passing drover to water his stock from the station watering points (Bain 1990). Neither were drovers able to depasture their stock beyond the route's gazetted boundary. In the Gascoyne basin Frank and Reg Burt carefully recorded details of the drovers escorted through their Brick House lease on Stock Route 3617 to Carnarvon. In January 1913 for example, Dairy Creek sheep were driven through on the stock route, and in February the same year Bidgiemia sheep came through. On December the 16th and 17th, there were two drovers camped at Rocky Pool with a mob of 4000 sheep each (Brick House Diaries 1900-1959).

Grassmen also went droving to supplement their income and help develop their stations. Returned servicemen William (Billy) Martin of Mount Padbury in the Murchison basin (Edwards 1994) and Evan (Enie) Bain of Woodlands in the Gascoyne basin (Bain 1990), as well as Brumby Leake of Prairie Downs Station in the Upper Ashburton, were typical examples (Barker 1994). In 1913 Harry Farber, a renowned horsebreaker and later a leaseholder near Marble Bar in the DeGrey basin, droved cattle from the Fitzroy basin to Meekatharra. A flamboyant figure, Farber (Plate 7.2) later droved throughout the DeGrey, Fortescue, Ashburton, Gascoyne and Murchison basins. On a droving trip Farber averaged 11 to 12 kilometres daily, watering the cattle at the river pools and wells along the various routes. (Baulch 1969). In 1922 he was droving stock for DeGrey Station, bringing them through Warrawagine (SROWA 1922-19023, ACC 2564A).



Plate 7.2: Drover and horsebreaker Harry Farber.

Source: Baulch 1969.

7.5 The Development of Roads and Bridges

Roads and bridges of the North West and the Fitzroy basin were unreliable, though a very important service after the initial settlement. They mostly evolved from shepherds' tracks, teamsters' tracks, stock routes and station access tracks.

Their frightful condition was to be a source of contention between the leaseholders, and the local roads boards. The arrival of motor vehicles caused further problems. The State Government at the time had little control over the local authorities whose early duties were to develop watering points and maintain roads. The costs of constructing and maintaining the North West river basin road networks were shared by the fledgling roads boards and the stations along the route (Lee-Steere 1905-1930). The situation was rectified somewhat when the Commonwealth Government's Main Roads Development Act, 1923 was devised, which provided funding towards the development of the state's roads under the Roads and Bridges Branch of the PWD. It was followed by the Commonwealth's Main Roads Act, 1925 that provided further Commonwealth grants and after 1926, the State Department of Main Roads. The Department of Main Roads was responsible for the construction of main roads, with the State contributing 15s.0d for each Commonwealth pound (Edmunds 1996). The outcome was some improvement on the previously appalling roads in the river basins.

Until the mid 1920s, however, road construction in the North West was carried out under extreme hardship, with shortage of funds and inadequate road-making machinery making durable roadwork virtually an impossibility. Most roads were made by the grassmen who dragged a heavy iron rim from a wagon wheel behind a team of camels or horses. Similar equipment was used by the local roads boards (Johnston 1962). Light trucks and steel-tyred graders made their appearance after World War I, though it was some years before they appeared in the North West (Main Roads 1947-1954). Important construction work, however, was accomplished after 1926. For example the Ballinu (sometimes spelt Ballinoo) Bridge across the Murchison River at Ballinu Springs on the Gascoyne-Mullewa Road near Billabalong Station was completed in 1930 (Plate 7.3). Designed to accommodate the heavy wool wagons that operated in the district, it was a reinforced concrete structure 80 metres long and 4 metres wide. The work was carried out by Henry Martin and Company under the supervision of a Department of Main Roads official at a cost of £9400. The Gascoyne-Minilya Bridge across the Gascoyne River near Brick House Station and another across the Ashburton River on Minderoo Station where the Carnarvon-Onslow Road passed through, were completed in 1931. These bridges replaced former causeways which were impassable and frequently totally destroyed during the periodic floods. Causeways in various modes of construction were used across all rivers in the North West. Road-work also was accomplished, though on a small scale, and included two major and important roads through the river basins (Glendinning 1956).



Plate 7.3: The Ballinu Bridge in the Murchison basin and a line up of vehicles waiting to cross. Source: Nixon and Iefroy 1989.

The road to Roebourne in the early 20th century was an abysmal thoroughfare that passed through the Murchison, Gascoyne, Ashburton and Fortescue basins. It stretched from Mullewa in the south, where it followed Stock Route 9700 as far as Ballinu Springs (Figure 7.6). As Road 6515 it meandered along the Murchison River, up through Billilly Lake, past Drage's Wail Station, and through the string of pools on the Muggon lease, following the earlier stock route and teamsters' tracks. It continued out of the Murchison and into the Gascoyne basin to the locality of Boundary Store. The road followed the Gascoyne River to the Junction, then north along the Lyons River to the Ashburton River. At Boundary Store, the track linked with the Gascoyne River Road Number 9098 and further east Carlyon's Track from the Three Rivers Station, passing through Mount Clere. From the West, Road 3617 linked it with Carnarvon.

The numbered roads were used both by teamsters and motor traffic during the 1920s (Maitland 1907), much to the annoyance of the latter motoring fraternity when their vehicles had to negotiate the wagon-ruts (Lee-Steere 1905-1937). Grassmen from the Murchison basin to the Fitzroy basin lobbied their respective parliamentarians for motor roads separate from the teamsters' tracks which, for the most part, followed the stock routes (Keeffe 1994). Road 3997, which followed the western side of the Lyons River, was constructed as a motor road through their efforts (Maitland 1907). Of

importance during the early 20th century, however, the Roebourne Road provided access to the Ashburton Goldfield (PAM 1894, 160/21, 040) linking the more southern parts of the State with Roebourne for many years as the coastal region was too sandy and waterless. Construction began on a new road from Mullewa following Stock Route 9701 during the late 1920s. It was partially completed when the Ballinu Bridge was built. The new road was much more direct than the meandering old track.

In the Fitzroy basin, the Fitzroy River Road 215, surveyed in 1885, was another appalling track with its many gates and impassable conditions during the wet season, made more troublesome by the fact that it was on Stock Route 23226 following the river frontage. It too, came under condemnation from the motoring leaseholders and other travellers. The road was eventually moved further north of the river (SROWA 1899-1935, Cons 1240A, MN149, Items 1-13).

7.6 Teamsters, Mechanisation and Mailruns

Camels, oxen and donkeys were used to pull the heavily-loaded wagons of wool and other goods in the North West. Afghan teamsters and their camels however, were to prove their worth in the river basins before motor vehicles made their appearance. With the onset of the goldrush in the Murchison, the Mahomet brothers Faiz and Tagh, from Hergott Springs in South Australia, arrived in Mullewa in 1892. They were to cart much of the heavy mining equipment from that base to the goldfields (Keeffe 1994). The track they and others used left deep impressions on the landscape that are still evident in the modern era (Officer 1996b). They eventually had their bases in Marble Bar in the DeGrey basin, Port Hedland in the Pilbara, Onslow and Carnarvon near the mouths of the Ashburton and Gascoyne Rivers respectively, and Meekatharra in the Murchison. The Afghans had their own camps on the commons on the outskirts of these towns (Edwards 1993). Some grassmen owned their own camel teams, which were used to transport their wool to the ports, returning with a variety of needed goods. Due to the remoteness of the stations, it was often a year between visits to the port and return, thus very heavy loads were carried with a year's supply of stores and equipment on the return load (O'Grady 1995)

As well as carting, camel teams were also used for the mailruns. Mail services provided important contact for the isolated leaseholders in the river basins, and Government mail collectors had regular runs. In the Gascoyne, Bidgiemia Station near the

junction of the Gascoyne and Lyons Rivers was a depot until Killilli was established (McDonald 1991) In the DeGrey basin until the late 1920s, mail was carried successfully from Marble Bar by the camel teams which could travel up to 720 kilometres in five days carrying a 10-tonne load, compared to the previous 30 donkeys pulling a five-tonne load and taking three weeks (Plate 7.4) (Edwards 1993).



Plate 7.4: A camel team waiting to be unloaded at Warrawagine Station in the DeGrey basin. Source: Hardie 1988

The earliest change from coaches and mail teams to mechanisation was Cobb and Co's motorised passenger service in 1906 in the Murchison basin, which linked Peak Hill with the other goldfields towns and Mullewa (Plate 7.5). Motor lorries, however, began replacing the mail teams by 1924 (Plate 7.6) (Heydon 1991). They were not able to carry the load of the wagon teams, but were able to make regular and more frequent visits to the stations.



Plate 7.5: Cobb and Co's motorised coach at Peak Hill
Source: Heydon 1991.

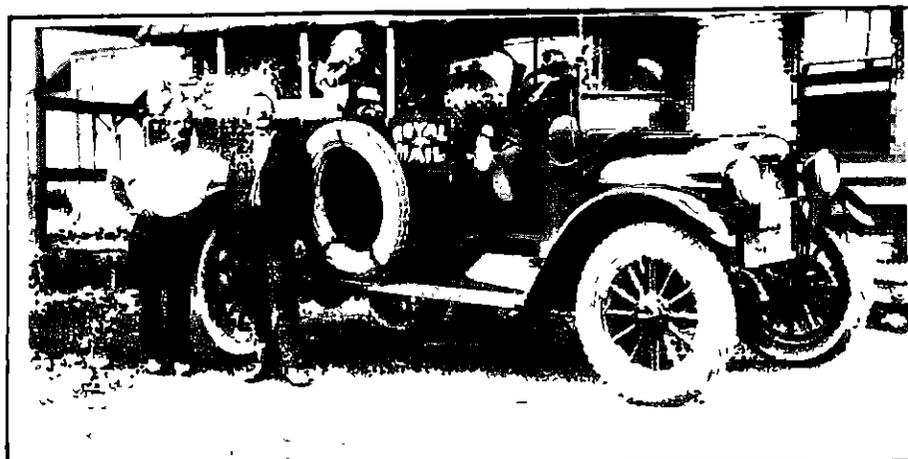


Plate 7.6: Frank Maloney's Royal Mail lorry at Peak Hill. Source: Heydon 1991.

An enterprising individual, Bill Price, used the initiative to conduct a taxi service from Broome, travelling to Derby and through the Fitzroy basin to Fitzroy Crossing with passengers and their luggage (Plate 7.7) (Price 1979). Motor cars were hired in the Murchison basin in 1920 to transport employees from Mullewa to Woolgorong Station (Lee-Steere 1920).



Plate 7.7: Bill Price's taxi being towed across the Fitzroy River by a donkey team near Fitzroy Crossing, 1920 Source: Weller 1979.

The increase in mechanisation was responsible for the eventual demise of the teams. With lorries making frequent deliveries of mail and stores from ports, railheads

and small, isolated towns such as Marble Bar and Peak Hill, the Afghans with their teams found work increasingly hard to procure. Towards the end of 1927 the Afghans in Marble Bar took their 100 camels out of town, sending some to the East Kimberley where the country was too rough for motor vehicles, and letting the rest run feral (Barker 1977), to later become a threat to pastoralists by destroying fences and competing for the forage plants (Mills 1997b). Mailruns soon became a lucrative industry throughout the 1920s.

Aviator Charles Kingsford Smith established the long-lived firm Gascoyne Traders in 1924 (Davis 1977). Its mailrun went from Carnarvon to Gascoyne Junction (Killilli), then down to Mullewa, dropping off mail and goods to stations on the way (Keeffe 1994). Bell and Co of Meekatharra was an established business that had several mailruns to the surrounding stations and further north into the Gascoyne basin (Heydon 1986). In the Pilbara, Major Norman Brearley's top pilot Len Taplin left the fledgling West Australian Airways in the early 1920s to develop a trucking business in Port Hedland. His motorised mailruns to the DeGrey stations replaced the camel teams (Hardie 1988).

The grassmen were quick to adapt to vehicular movement. The first to own a motor car was Frank Wittenoom of Nookawarra Station in the Murchison basin, purchasing his vehicle in 1903 (Nixon and Lefroy 1989). Septimus Burt shipped a vehicle to Carnarvon by the *Koombana* in 1910 and drove it out to his Brick House Station in the Gascoyne. The vehicle was used to drive to the Burt's other leases Minnie Creek and Yinnietharra, to visit the McLeods at Minilya Station, to the Vermin Board meetings in Carnarvon and to collect stores and the mail, and even to drive to Perth (Brick House Diaries 1900-1959). In the DeGrey basin in 1914 Mark Rubin purchased vehicles for his manager Gerald Taylor on Warrawagine Station and his general manager John Lyal Stewart on DeGrey Station (O'Grady 1995). In the same year, Corbett from the neighbouring Muccan Station, with a group of friends, proudly drove his vehicle from Port Hedland across the Abydos Plain to Marble Bar (Edwards 1993).

7.7 Ports, Shipping, Railways and Air Services

Other public works were accomplished in the North West that were of vital importance to the pastoral industry. For the Gascoyne basin and surrounding district the Carnarvon stockyards were constructed in 1895. To facilitate the ease of loading wool, jetties and landings were renewed and extended at Carnarvon, Maud's Landing,

Fortescue, Balla Balla, Port Hedland, Broome and Derby (Plate 7.8, Figure 7.7) Each had its yards and ramps for loading stock. Roebourne's original port of Cossack, being too shallow with the larger ships now plying the North West route, was abandoned and replaced by a jetty at Point Samson (LePage 1986)

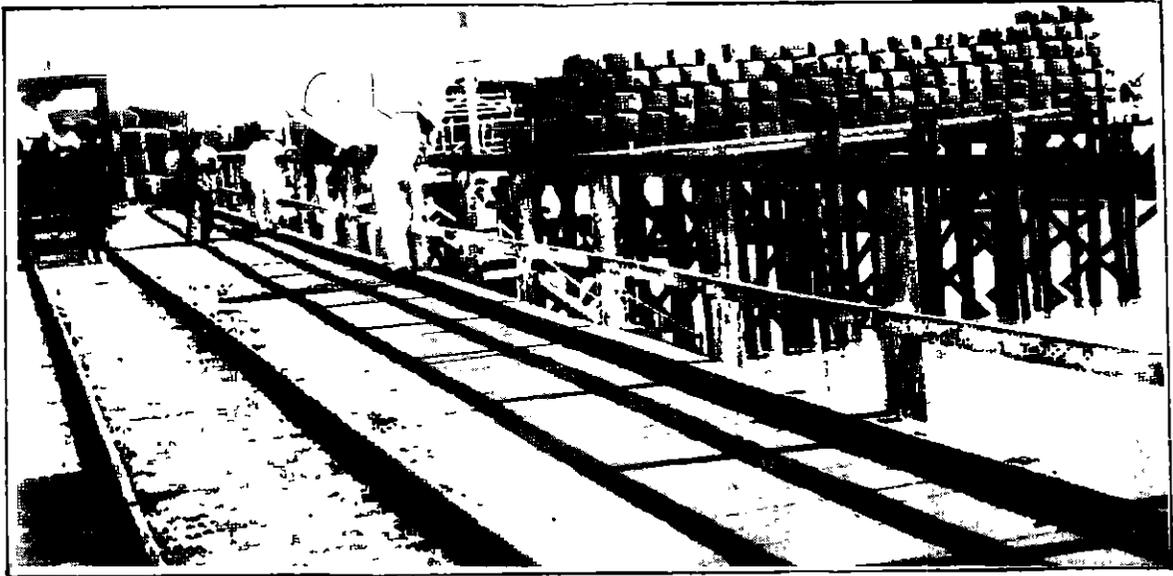


Plate 7.8: Wool awaiting shipment at the Derby jetty in 1910. Source LePage 1986.

Similarly the Onslow townsite was shifted to Beadon Creek. A new channel formed by flood waters from cyclonic activity had relocated the mouth of the Ashburton River and it had silted up. Furthermore, the shoreline was too exposed for a sea jetty to be constructed. By contrast Beadon Creek offered sheltered deep water. In 1925 homes and other buildings were either jinkered or taken down and transported to the new site where a jetty and landing were constructed (Webb 1983). The removal of buildings for use elsewhere was not an uncommon practice in all the river basins.

In the early years of the ports there were livestock shipments overseas and to the southern markets, with wool shipped out to Singapore and Great Britain. The Ocean Steamship Company and the West Australian Steam Navigation Company were a combined service that carried wool, ore from the copper and tin mines, pearl shell, other types of cargo and passengers to and from the North West ports on a fortnightly voyage to Fremantle and Singapore. Occasional ore-carrying ships sailed from the North West for Glasgow, Genoa, Liverpool, London, and Swansea where the cargo was sold. Ships that sailed for these companies included the *Gorgon*, *Charon*, *Munderoo* and *Paroo* (Dalgety & Co. Limited 1926). To improve transport and communication to and from the North

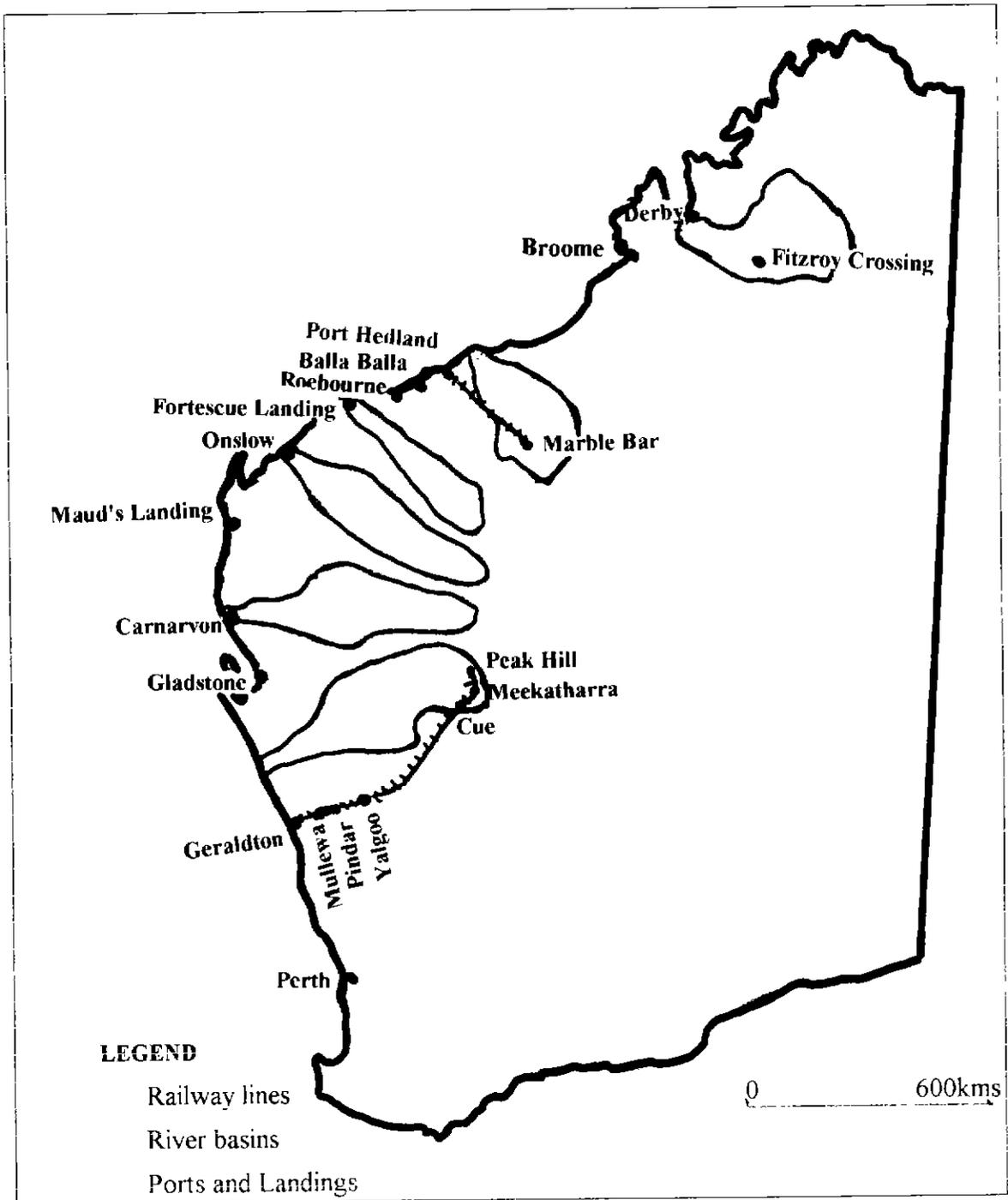


Figure 7.7: Ports, landings and railways in the North West

West and Kimberley ports the State Shipping Service was inaugurated in 1912 under the Scaddan Labor Government. One outcome was the sale of live Kimberley cattle in the southern markets and the Eastern States. The State Shipping Service helped to keep

freight prices low and enabled the smaller pastoral enterprises to transport stock to the markets. Leaseholders were also able to breed and sell fat lambs for the Fremantle market. The Fitzroy basin beef was sent south to Fremantle, and to Singapore and Manila. Due to the inhospitable terrain that divided the Ord and Fitzroy basins, however, the Fitzroy basin cattlemen were unable to benefit by droving their cattle to the 1919 government-owned Wyndham Meat Works (Crowley 1960).

Mail services were provided by the Adelaide Steamship Company Limited under contract with the Federal Government. The company's steamers were also suitable for stock-carrying and made regular runs to and from Fremantle and the Eastern States. One of the company's steamships was the *Bullarra* (Hall 1926) which survived the cyclone of 1912 (*The Hedland Advocate* 1912). Most ships were able to berth at the jetties to load and unload, though sitting on the mud at low tide. Some, however, still waited out at sea for a lighter to ferry out the wool bales from landings such as Gladstone, Fortescue and Balla Balla.

Railways were a great blessing to the grassmen in the Murchison and DeGrey basins, and to those in the headwaters of the Gascoyne, Ashburton and Fortescue basins, who droved their stock to the railheads. The railway reached Cue in 1897 and Meekatharra in 1910 (Figure 7.7) (Heydon 1986). The siding at Pindar, 28 kilometres east of Mullewa, and the railway station at Yalgoo handled stores, stock and wool loading for the Murchison leaseholders (Plate 7.9) (Lee-Steere 1905-1937). Meekatharra was the major stock and wool-loading centre, not only for the local pastoral industry but also for stations in the Gascoyne and Ashburton basins (Heydon 1986). The Port Hedland-Marble Bar railway was constructed by Smith and Timms in 1910 at a cost of £123,212.12s.6d and was fully operational by New Year's Eve 1911, with official stops at Pippingarra, Strelley, Carlindi, Shaw River, Shaw Tanks, Waralong, and Eginbah Stations, and at Poondinoo and Coongan where there were also refreshment rooms (Edwards 1993). Drivers of the trains, accustomed to hazardous conditions, were not averse to tackling flooded creeks and rivers when the tracks were under water. As in the Murchison, the 'Spinifex Express' was a boon to the pastoralists for carting their wool, and to the mining companies (Plates 7.10 and 7.11) (Hardie 1988).



Plate 7.9: An ox team leaving Byro Station in the Murchison basin for Pinda 345 kilometres to the south. Source: Nixon and Lefroy 1989.



Plate 7.10: A loaded 'Spinifex Express' - front end. Source: Hardie 1988.

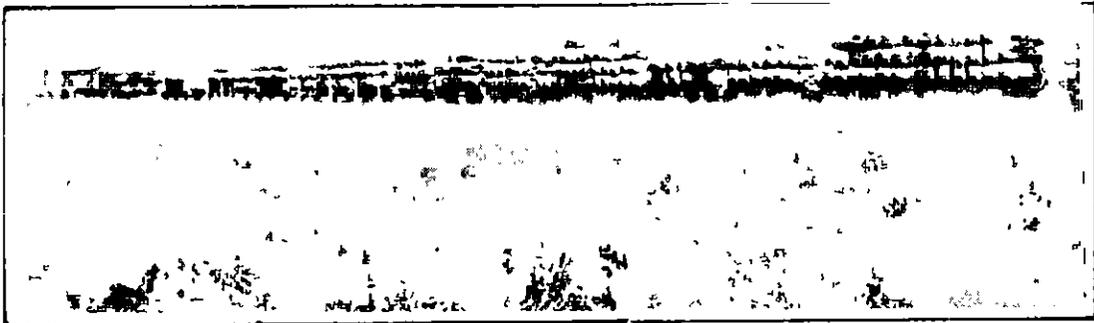


Plate 7.11: The 'Spinifex Express' -rear end. Source: Hardie 1988

Air services to the North West began soon after World War I. A reconnaissance of the expected route was made by the Royal Australian Air Force (RAAF). Following this, Surveyor General Johnston was given the task of surveying appropriate areas for landing grounds. The new aerodromes, just over half a square kilometre in size, were constructed by the various local authorities. They were based at Hamelin Pool, Carnarvon, Winning Pool, Onslow, Roebourne, Port Hedland, Wallal,

Broome and Derby (Johnston 1962). Major Norman Brearley was responsible for founding West Australian Airways (WAA) and inaugurating airmail and passenger flights to the river basins (Plate 7.12) (Davis 1977). The service was subsidised by the Commonwealth Government. Three Bristol Tourers left Perth on the 4th of December 1921. After leaving Geraldton the next day, engine trouble forced one pilot, Len Taplin, to land in a small paddock near the Murchison House homestead. Major Brearley, in another

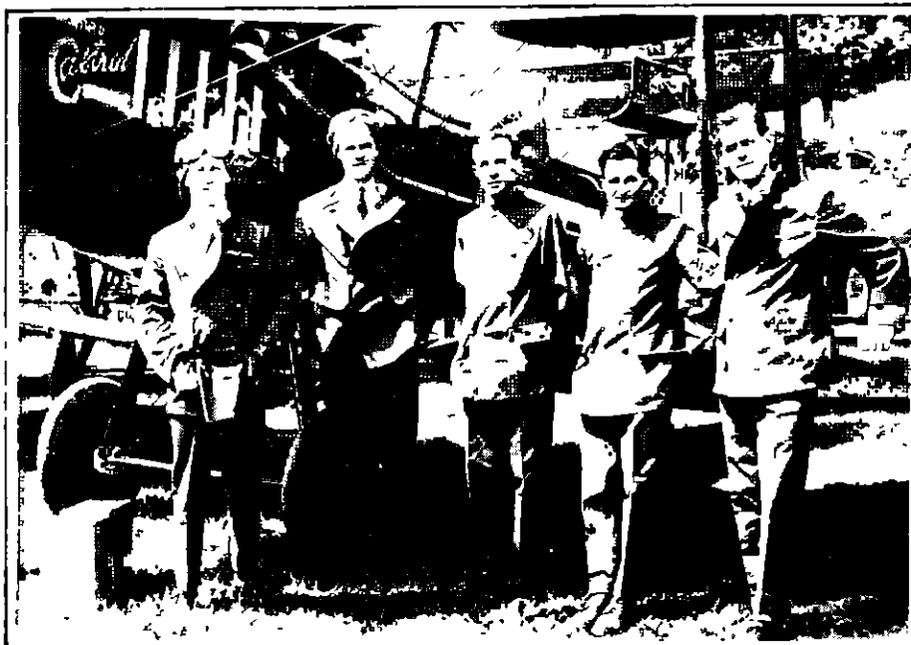


Plate 7.12: From left to right - Charles Kingsford Smith, Major Norman Brearley, Robert Fawcett, Len Taplin and Val Abbott at Geraldton prior to Fawcett's fateful accident on Murchison House Station, 4-5th December 1921 Source: Davis 1977.

Bristol landed also. The third Bristol crashed nearby, killing the pilot Robert Fawcett and his mechanic Edward Broad (Johnston 1962). They were buried in the station's small cemetery (Plate 7.13). Undaunted by the tragedy and danger of this fledgling new method for mail-delivery, WAA continued the mail service for the next 13 years (Edwards 1991). Agents for the company were based in Carnarvon, Onslow, Roebourne, Port Hedland, Broome and Derby. The company advertised the use of the new mailrun and urged leaseholders to construct landing grounds near their dwellings to receive the full benefit of home delivery and passenger service (Bardwell 1926). The pilots were resourceful, popular and daredevil. Prior to the development of proper landing grounds in the towns and later on the stations, they landed their machines on dirt roads, station tracks, cricket grounds, beaches, the Derby mudflats, horse paddocks and racetracks (Edwards 1991).



Plate 7.13: The graves of Robert Fawcett and Edward Broad in the small Murchison House Station cemetery. 24th June 1996.

The airmail contract was taken over by MacRobertson Miller Airlines (MMA) in 1934. The new company developed the station runs, or 'milk runs' as they were locally termed, and for many years their DC3s and Ansons landed on the small, graded airstrips of the stations (Hardie 1988, *General Correspondence 1920-1960*).

7.8 Telecommunications

From the 1890s on, telegraph lines spread north and northeastwards from Geraldton to the coastal and goldfields towns. Each lineman was accommodated in a small hut on a grassed area of sufficient size to feed his horse or camel. Land for this purpose was excised from the pastoral leases (O'Grady 1995). Each day he traversed his section of the line to check for breakages often caused by roaming Aboriginal hunters who stole the insulators to be chipped into spearheads (Crowley 1960). One such lineman's camp was situated close to the DeGrey River on Warrawagine Station (O'Grady 1995).

7.9 Other Services

Remarkably few wayside inns were constructed on the stock routes to service the drovers and other passing wayfarers. Boundary Store, on the boundary of

Dairy Creek and Bidgiemia Stations, was opened by J Jordon on the 1st of November 1917 (McDonald 1991) The store was located on eight hectares of land on Stock Route 9701 (PLAP 1928, 73/300). The Bilyuin Hotel (Plate 7 14) was situated at the junction of



Plate 7.14: Bilyuin Hotel on the Murchison River south of Peak Hill.
Source Heydon 1991.

Stock Routes 9700 from the DeGrey, 18339 westward along the Murchison River, and the Peak Hill-Meekatharra 9699 route (Figure 7.6) (PLAP 1926, 72/300). This was also the centre for Ernest Lee-Steere's coach mailrun, and his Innisfall Station. Heydon (1991:177, 192) reports that the noted prospector Russian Jack settled there to establish a garden that included citrus trees, run a small eating house, and operate the change station for Lee-Steere's coach line from Cue to Peak Hill. Later it was taken over by a man named Broad.

In the Gascoyne basin, where 20 years before there were only a few isolated stations, the Brick House diarist recorded some of the visitors in the 1920s, who included woolbrokers, stock and station agents, pastoral inspectors, Vacuum Oil Company representatives and people passing through to other stations, along with drovers, teamsters and family members from other Gascoyne stations, and, in 1926, the Governor General. He also recorded the digging-out of bogged vehicles from the Gascoyne River (Brick House Diaries 1900-1959). In the Murchison basin, Wooleen Station had a visit from the Governor (Pollock 1996a). Hubert Lee-Steere on Woolgorong Station was another who recorded, among other visitors, travelling saddlers and blacksmiths, and Afghan hawkers. The tradesmen camped at the station until their work was completed. The hawkers provided curtain material, ropes, trousers, cotton shirts, girls' dresses, petticoats, flannelettes and other necessities. They purchased supplies from the station store in return (Lee-Steere 1905-1937) They helped provide a vision of a busy landscape in an isolated wilderness.

7.10 Conclusion

During the first three decades of the 20th century, landscape change in the generally harsh and arid environment of the North West and West Kimberley involved more than pastoral depletion and degradation of the river frontages. In addition, the goldfields settlements and their infrastructure opened up markets for meat and enabled the development of some important services for the pastoral industry, including the control of aggressive Aborigines. Port facilities were provided, and the shipping service was enhanced by the introduction of faster steamers. The survey and gazettal of stock routes and construction of wells were of major significance in facilitating the movement of stock to markets, ports and railheads, but would also have far-reaching negative consequences as the routes were subject to the frequently unsustainable grazing and watering pressures of large numbers of stock. As technology slowly progressed, the Afghan camel teams disappeared from the tracks and stock routes, and motor cars, lorries and aircraft enabled the swifter movement of goods, people and mail deliveries. The introduction of the railway, though limited to the Murchison and DeGrey goldfields, was of great benefit to the pastoral industry in those areas and beyond. Furthermore, despite the poor condition of the roads, other services followed, with the introduction of general stores and wayside inns, the relatively prompt and regular delivery of mail, and the visits of officials, itinerant tradesmen, company representatives and travelling salesmen. All such progress, however limited, helped reduce the isolation of the pastoral industry in the river basins. Unfortunately for the hopes of the Government of the day, closer settlement failed to follow the goldrushes, but further pastoral leases were taken up in the headwaters of the basins. Therefore, with the exception of a thin scattering of former mining towns now serving as pastoral central places, the comparatively empty cultural landscape of extensive grazing still prevailed.

Chapter Eight

Pastoral Expansion to 1935

8.1 Introduction

Fifty years had wrought ecological changes on the rangelands in the river basins. This process continued as the grassmen improved their leases and, with the development of a rudimentary public works infrastructure in place, the pastoral industry extended its activities into the less hospitable portions of the river basins. By 1935, there had been an exceptional growth in livestock numbers as leaseholders mostly complied with the PB's required capacity of 10 sheep or two large stock per 410ha (1000 acres). The grassmen on the established leases in the basins had installed fencing, watering points and stockyards, with land divided into paddocks typically 6000 hectares in area. The purchasing of the necessary material for such improvements was continuous and expensive. Leases expanded and were amalgamated into large holdings, and homestead complexes grew. By contrast, the newer leases were in the hands of men from the goldrushes and returned soldiers. For them station development was much slower, hampered by the lack of Aboriginal labour, which was concentrated almost exclusively on the established leases. The vermin problem had also become a significant issue. Between 1900 and 1935 also, dry seasons were followed by periods of beneficial rainfall, and spasmodic cyclonic activity wrought devastation to stock and property, requiring costly stocking and repairs, whilst rejuvenating the parched rangelands

8.2 Stock Husbandry

An important aspect of station development and management was the purchasing and selling of stock. Sheep were purchased by grassmen who desired to improve their flocks, or sold after culling (Lee-Steere 1905-1930, SROWA 1899-1935, ACC 4445A, MN149/2, Item 5) The Campbells of Billabalong in the Murchison introduced Peppin rams (Officer 1996a), whilst their neighbours the Sharpes of Wooleen favoured the Bungaree breed (Battye 1985). In 1920 the Campbells received a prize from London for the best wool which sold for 25d a pound (Maher 1920). Eight days later they were informed that their wool was selling for 70d per pound (Kelly 1920), almost five times the 1916 price (Maisey 1979). In 1935 Yallalong's sheep numbers were 89 732 on a lease of over two-and-a-half million hectares. The number included 627 rams and 7834 lambs (SROWA 1936, ACC 541, AN3/6, Item 2370). By 1934 the Sharpe family of Wooleen in the Murchison, were also running 52 000 sheep on their Mardie lease, which

straddled the Fortescue River near its mouth. Shearing that year resulted in 1280 bales of wool (Sharpe 1979)

The Burt family of Brick House in the Gascoyne basin purchased a number of Broabale rams in 1910 to improve their flock. They furthered their income by selling wethers at £1 per head, their own rams for £2.2s.0d each to other stations, and bullocks on the hoof at £7 each, plus dressed bullocks at threepence per pound to the Carnarvon butcher (Brick House Diaries 1900-1959).

When Mark Rubin purchased the Warrawagine and DeGrey leases in the DeGrey basin, with the latter carrying 72 430 sheep and Warrawagine cattle, he changed Warrawagine from cattle to sheep. To aid the changeover he purchased 250 Kadlung rams in 1912, 250 Glen Turret rams from South Australia in 1913, 1914 and 1915, and 250 J.R. Hay rams from Gingin in the South West. There were 250 rams purchased from local sources as well. The total cost of the purchases exceeded £7000. By 1918 Warrawagine was carrying nearly 30 000 sheep (O'Grady 1995) The Holthouse family of Muccan Station (formerly part of Muccanoo) who purchased the lease from the Darlot brothers during the 1920s, imported the Bungaree and Murray rams from South Australia (Holthouse 1987).

In the Fitzroy basin members of the KPC corporation used Canowrie rams to improve their Liveringa flock. They also purchased a stud Shorthorn bull to improve their small herd of cattle (SROWA 1899-1935, ACC 4445A, MN149/2, Item 3) Liveringa held the distinction of running the largest flock with an astronomical 89 000 head of sheep, of which approximately 40 000 were ewes, 24 000 were lambs and over a 1000 were rams. They were depastured on the black soil, Mitchell grass-blue grass plains of the leases adjacent to the river (SROWA 1899-1935, ACC 1240A, MN149, Item 5). In the early 1930s, with the river frontages suffering from the onslaught of the sheep, paddocks were finally developed in the pindan country, and the company purchased rams from Collinsville in South Australia (SROWA 1899-1935, ACC 4445A, MN149/2, Item 5). Further east along the river the Emmanuels on Noonkanbah Station blade-shore 85 000 sheep in 1903 and were running the second-largest flock in Australia (Bolton and Pederson 1980). In 1912 they were selling 6 000 fat lambs for 10s.0d each to stock and station agent John McGlew of Derby (SROWA 1899-1935, ACC 4445A, MN149/2, Item 3). McGlew was the local agent for the Forrest, Emmanuel and Company's agency in

Derby for various shipping lines, and for many other leaseholders in the Fitzroy Valley (Battye 1985). Another stock-buyer who was based in a town was Alfred Neave who lived in Roebourne in 1918 (SROWA 1917-1935, ACC 1683, AN 3/15, Item 5000/18).

There were no sheep on the Kimberley Plateau where building-up a cattle herd was a gradual task. Bill Chalmers and Felix Edgar faced a slow process of herd development that took several years to reach a viable size of 500 on their Mount Hart lease. For marketing they had the difficulty of droving cattle over the western rim of the inhospitable King Leopold Ranges to Derby for shipment. One enterprising individual, Fred Merry, held leases on the plateau outside the basin's headwaters on the Sale River, which flowed into Doubtful Bay. He successfully grew peanuts as a cash crop until his herd was large enough to market a surplus. Merry used camels to carry the harvested peanuts across the King Leopold Ranges to Walcott Inlet to be shipped south to Perth (Idriess 1950). This source of income was not tried in the Fitzroy basin. Merry's place later became Pantijan Station and bordered the Munja Aboriginal Reserve. The small lease was surrounded by the Synnot and Edkins Ranges, a deterrent for access to the Kimberley Plateau and the Mount Hart and Mount House leases (Department of Defence 1983).

Stock numbers drawn from the Statistical Register are the best indicator of the growth of the pastoral industry (Table 8.1). In 1903 sheep numbers for the North West

	1903		1935
Murchison	192 316	Murchison	799 805
Gascoyne	420 530	Upper Gascoyne	511 595
		Gascoyne-Minilya	725 728
Ashburton	226 804	Ashburton	596 550
Roebourne	261 904	Roebourne	323 240
Pilbara	205 880	Hamersley Tableland	161 933
		Marble Bar	300 007
		Nullagine	145 138
West Kimberley	320 751	West Kimberley	245 523
TOTAL	1 411 381		3 083 924

Table 8.1: Growth of sheep numbers in the North West and West Kimberley from 1903 to 1935. Source: *W.A. Statistical Register* (1903, 1935)

Division, which included the Gascoyne, Murchison, Ashburton, Roebourne, Pilbara and West Kimberley, ranged from a large 420 530 in the Gascoyne to 192 316 in the

Murchison The Ashburton was supporting 226 804 sheep. By far the largest number was located on the chenopod pastures and wanderie grasses of the Gascoyne (*W.A. Statistical Register* 1903). Sheep numbers continued to escalate despite World War I, the Depression, spasmodic rainfall and dry seasons (*W.A. Statistical Register* 1935). The numbers continued to climb as leases were amalgamated, paddocks were fenced and adequate watering points installed. By 1935, the flocks had more than doubled, the most significant growth being in the Murchison with 799 805 sheep. At the same time West Kimberley flocks had declined by one-third, in a region which the climate was less hostile to cattle, and where the encroaching poverty bush was replacing the Mitchell Grass along the depleted Fitzroy River frontage.

8.3 Fencing and Watering Points

To facilitate the depasturing of sheep, leases were divided into fenced paddocks equipped with watering points. The blackheart and mulga trees were cut for stockyards, fence-posts and building materials. The Burts of Brick House in the Gascoyne paid post cutters £2 per 100 for posts and £3 per 100 strainers for the construction of their fences (Brick House Diaries 1900-1959). Taylor, manager of Rubin's Warrawagine in the DeGrey, had men employed cutting down the blackheart off the banks of the rivers for new sheep yards and sheep paddocks (O'Grady 1995). Cattle mostly grazed from watering point to watering point in unfenced country, with holding yards constructed for mustering purposes.

Adequate water supply was imperative for the increasing stock numbers and the dispersal of stock across the rangelands. A boost to water resources was the discovery of the North-West Artesian Basin, later renamed the Carnarvon Basin. Free-flowing bores were sunk up to depths of between 480 and 550 metres into the basin on the Brick House, Boolathana (Plate 8.1), Cardabia and Beejalling leases in the coastal



Plate 8.1: The free-flowing Boolathana bore. Source: Battye (1985)

region of the Gascoyne, incorporating a portion of the basin. On Brick House there were several of these bores, including No. 4 (Plate 8.2), Wanarie, Wangie, Callatharra and East Moolooloo. No. 4 was a popular picnic area for the townsfolk of Carnarvon (*Pastoral Review* 1927). The bore tank, a small reservoir surrounding the bore, held the water which



Plate 8.2: No 4 bore in the Boodalia Paddock of Brick House Station.
Source: *Pastoral Review* (1927).

then flowed into the specially prepared drains and diverted across the paddocks (Brick House Diaries 1900-1959). The most common of the watering points put down by the grassmen, however, were the less-wasteful wells and bores with their windmills, tanks and troughing.

Most well-sinking was accomplished under contract and just as many duffers were sunk as those with good supply, or were salty, or heavily mineralised. In 1922, a bore, costing £33.2s.4d was sunk by Archie Swan on Warrawagine Station in the DeGrey to a depth of 25 metres and yielded nothing. The following year, at a cost of only £18.0s.0d, fellow-workers Billy Orchard and Higgins sunk a bore to 120 metres to reach water that pumped up to 13 638 litres daily. High-yielding wells and bores were connected to reticulation piping that carried water to tanks and troughing in adjacent paddocks. Wells were lined with timber cut from the blackheart trees along watercourses or corrugated iron, as was the case with Desert Well on Warrawagine, where an old men's hut was pulled down and the iron roof and walls used to line the well (Carey 1920-1936). Grassmen and their employees were very adept at constructing their own tanks and troughings. Cement was used extensively on the leases. To plaster a 45 000-litre tank 30 bags of cement were needed (Landor Station 1949). Existing wells on leases were

deepened in the constant search for good water, with Aboriginal and European employees carrying out the necessary work. Repair and maintenance of the watering points and fencing was a constant task as the rangelands were transformed from Aboriginal hunting and gathering grounds to a European-pastoral landscape.

8.4 Station Work and Employees

Mustering sheep and cattle was a yearly event, entailing some months of preparation and requiring high levels of skill from the horsemen and their mounts. It was at this time that stock were counted, unwanted animals culled from the flock or herd and mobs assembled for sale. Calves and cleanskin cattle were branded. Mustering plants were part of the station infrastructure and included a string of horses varying in numbers depending on the numbers of stock. A wagon or cart was pulled by a team of donkeys or horses or camels, for the carrying of supplies and swags. Mustering camps were set up seasonally at selected watering points and at the outcamps (Plate 8.3) (Carey 1920-1936).



Plate 8.3: A musterer's camp amongst white everlastings at Wooleen Station in 1918. Note the corner of the bough shed for shelter in the right hand corner of the photograph. Photograph WN 18, Murchison Museum, Murchison.

A station could carry up to 300 horses which, of course, competed with other stock for the foraging plants (Steadman 1996b).

With sheep, the yearly mustering event culminated in the shearing. Shearing sheds and shearers' quarters were an important part of the station complex, most being

constructed of either corrugated iron and timber, or local stone. They were located either close to the homestead complex, or central to the location of the sheep paddocks (Plate 8.4)



Plate 8.4: Billabalong Station's shearing shed in 1907
Photograph B1.2, Murchison Museum, Murchison.

Prior to 1907 the Aborigines did most of the blade shearing. There were sometimes 26 or 27 Aboriginal men and women on the boards during that time. White shearers came from Geraldton, Perth, Carnarvon, the Fortescue, Derby and New Zealand, arriving at the station on foot, on a pushbike, or on horseback. As motor vehicles made their appearance shearers arrived together in a truck, bumping over the rough roads or crossing swollen rivers (Plate 8.5) Shearing expenses were an important part of financial outlay in station management. Shearers' rates were 25s.0d per hundred and the cook received 6s.0d per man per week (SROWA 1899-1935, ACC 1240A, MN149, Items 1-13). Other expenses included food and days lost through rain. In the Murchison shearers were paid 17s.6d a day as compensation for rainy days (Lee-Steere 1905-1930).

In 1907 the Australian Workers Union (AWU) lobbied to have Aboriginal shearers removed in favour of whites (Battye 1985). In response to the AWU, working and retired grassmen formed the Pastoralists' Association (PA) in Perth in the same year. Some of its first members were also members of parliament (Maisey 1979). Nevertheless the AWU was successful, except in the Fitzroy basin where the Emmanuels of Noonkanbah and the KPC of Liveringa continued to employ Aboriginal shearers for several more years (Bolton and Pederson 1980). The PA went to Arbitration with the AWU to stabilize the shearers' pay rates and conditions (Maisey 1979). Problems continued to exist however, in the Fitzroy basin. A team on Myroodah was paid 27s.6d



Plate 8.5. A shearing team pulls their loaded truck across a swollen river.

Source: Hardie (1988).

per hundred per shearer and expected to receive the same rate on Liveringa. The KPC objected to the rate which was higher than the contract. When the white shearers refused to work for less, the company reverted to Aboriginal labour (SROWA 1899-1935, ACC 4445A, MN149/2, Item 3).

Blade shearing was gradually replaced by electric plants powered by the Moffat Virtue (Webb 1983), Wolseley, Lister and other diesel engines. A Lister was purchased by Lee-Steere of Woolgorong in the Murchison in 1920 for £188 17s. 3d. He bought in timber and other miscellaneous goods for the erection of an engine room. Jarrah was used for most of the woodwork, with other types of timber and a miscellaneous assortment of nuts and bolts completing the work. The material, arrived in July at a cost of £97 10s. 0d. (Lee-Steere 1905-1930).

Ships, wagons and railways transported wool, fencing material and other necessary goods to the North West and West Kimberley, and contributed to the expenses of running a station with their freight charges. In 1920 Lee Steere had two tonnes of No. 12 black wire worth £91 0s. 0d. railed from Geraldton to Pindar. The freight cost was £2 5s. 10d. To freight 277 bales of wool cost an astronomical £100 4s. 9d. compared with the shipping cost of £7 16s. 0d. on the *Gorgon* from Geraldton to Fremantle (Lee-Steere 1906-1937). On Glenroy on the Kimberley Plateau in 1922 Tommy Fitzpatrick paid £25 per tonne for having stores transported from Derby and £1 per head to have cattle droved to Derby (Inspector's Report 1922). The KPC of Liveringa down in the valley were paying £5 10s. 0d to freight goods out from Derby (Warnsborough 1965). In the Fitzroy basin in 1921 the shipping charge for a bale of wool to Fremantle was £2 1s. 1d., with the cost of

overland carriage £7 per tonne (Brockman et al 1921-1975). Liveringa shipped out between 600 and 1000 bales of wool after each shearing, at a cost of £1200 to £2000 each season (SROWA, 1899-1935, Cons 1240A, MN149, Items 1-13). Freight concessions were eventually granted, however, with the amendment of the Land Act in 1931 (SROWA 1937, ACC 541, AN3/6, Item 190).

Other areas of station work included boundary and windmill runs. The boundary run, a lonely occupation which could take up to two or three weeks, entailed riding the boundary of the lease checking the fences for breaks, usually caused by emus, kangaroos and wild camels, and repairing them. A windmill run was a regular weekly event which entailed riding to selected watering points, checking to see if they were functioning and the tanks filled. Each watering point was checked with the troughs cleaned out at the same time. This part of station work continues into the modern era (Barndon 1996b, Steadman 1996b). Thus tracks, usually made by the grassmen in a manner mentioned in a previous chapter, cut across the rangelands from mill to mill, and around the boundary fence. As mechanisation advanced, horses were replaced by the motor cycles. Lee-Steere was one of the pioneers of this change, purchasing a Triumph motor cycle for £125.0s.0d in 1920 (Lee Steere 1920).

Grassmen on some leases preferred camel teams to horses, bullocks or donkeys, finding them tractable, easy to keep and mostly quiet. Berringarra Station in the Murchison basin had the first station camels by 1911 (Barker 1977). Warrawagine Station in the DeGrey basin had two camel teams after Rubin's takeover in 1912 (O'Grady 1995). Herbert Barker (1977:129) of Barramine Station east of Warrawagine claimed camels to be more suited to the saltbush-mulga country than any other animals used for packing goods or towing drays. The camel's hoof had little impact on the fragile soils of the mulga woodlands

The native grasses were regularly cut from the 1890s to 1935, to provide dry-season feed for stud and breeding stock and the horses, with lucerne grown and cut as a further dry-season feed resource. In 1935, despite the encroaching poverty bushes, Liveringa cut enough hay from the natural grasses on the black soil plains of the river frontages to last it and the neighbouring Luluigui for two seasons (SROWA 1899-1935, ACC 4445A, MN149/2, Item 5). On Brick House in the winter months lucerne patches

were planted in several paddocks. The Burt family reticulated its lucerne patches with an overhead sprinkler system. The patches were also regularly top-dressed with sheep manure (Brick House Diaries 1900-1959)

The Aborigines played an important part in station development. In 1903 in the Gascoyne there were 198 white males and 22 white females, whilst Aboriginal males numbered 401 and females 314. One Oriental was also recorded. The Roebourne pastoral industry employed a mere 81 white males and four females compared to 294 Aboriginal males and 198 females. Similarly, in the West Kimberley there were 108 white males and three white females, whilst the bulk of the employees were 276 Aboriginal males and 201 females. The Pilbara pastoral industry provided work for 90 white males and 10 white females, whilst Aboriginal males numbered 349 and females 295. In the Ashburton pastoral industry there were 76 white males and 1 hardy white female, whilst the male Aborigines numbered 182 and the females 174. On the Murchison stations there were 45 white and 45 Aboriginal males, with three white and 37 Aboriginal females (*W.A. Statistical Register* 1903).

The 1903 Statistical Register recorded European wages for the North West, which did not change for the next twenty-odd years or more. Married couples received £2 a week plus keep. Stockmen drew £1 to £3 per week, depending on their skills, boundary riders 18s.0d to £1.12s.0d per week, bullock drivers £1.7s.6d to £2.10s.0d per week. Bush carpenters received the highest amount depending on their skills, ranging from £1.7s.6d to £3.10s.0d per week. Sheep drovers followed with a range from £1.0s.0d to £3.0s.0d, all including keep. Shepherds' wages were small with 16s.0d to £1.10s.0d per week and keep, with a hut-keeper bringing in 18s.0d to £2.17s.6d per week (*W.A. Statistical Register* 1903). In the mid 1920s on Brick House Station, a Chinese employee J. Ah Coon was receiving £2.10s.0d per week for gardening, boundary riders were employed from £1 to £2 per week, and an Aboriginal Neddy Crow started work on the 26th of October 1926 at £2.0s.0d per week. The Burts often paid their Aboriginal employees wages. In 1935, Biscaya, an overseer, was receiving £3.10s.0d per week plus keep (Brick House Diaries 1900-1959). By comparison, the first Commonwealth Basic Wage was set at £2.2s.0d in 1907, and the first Western Australian Basic Wage at £4.5s.0d in 1926. It was reduced to below £3.10s.0d during the Depression and did not return to the 1926 figure until 1940 (*Western Australian Statistical Register*, various).

8.5 Amalgamation of Leases

Amalgamation of leases was an ongoing process as development continued. In 1894 in the Murchison basin the Drage brothers held many blocks along the river. James Mitchell held blocks to the east and south of the Drage locations (Figure 8.1). By 1927, Mitchell had taken over all the Drage blocks and the intervening VCL, further developing the blocks into paddocks with fencing and watering points sufficient for them to be amalgamated almost into one unit. Other blocks were relinquished pursuant to the requirements of the Land Act, 1917 (SROWA 1894, No's 1&2, 505 455/456; PLAP 1927, 55/300).

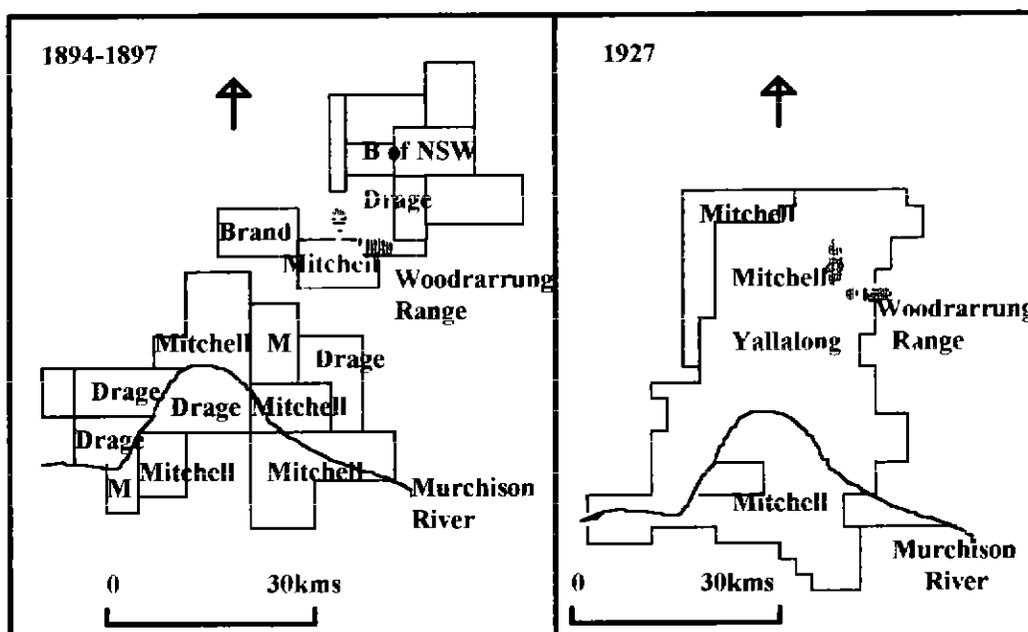


Figure 8.1: Sketch portraying the many blocks held by the Drage brothers and James Mitchell in 1894 in the Murchison basin and the subsequent amalgamation after lease development and requirements of the Land Act, 1917.

In 1899 Coolawanyah on the central Fortescue River and held by Duncan Kenneth McRae, consisted of 12 separate leases. By 1934, when held by Cusack and Ferguson, and before its sale to Roy Parson, the leases had been amalgamated into eight units with 22 000 sheep, 112 large stock, 624 kilometres of fencing, two cattle yards, five sheep yards, shearers' quarters and shed, outbuildings and a homestead (SROWA 1899, ACC1384, Item 2619). On Mount Edgar, a neighbour of Warrawagine Station in the DeGrey, intensification was in progress by 1903. There were 10 000 sheep, 100 large

stock, 250 kilometres of five and six-wire fencing, and 23 fully-equipped wells with tanks and troughing spread over four units. Stockyards had been constructed for both cattle and sheep (SROWA 1903, ACC 1384, AN3/9, Item 11840/03).

During these years some stations were run by the grassmen as owner-operators, such as Lee-Steere on Woolgorong. Others were in the charge of managers who varied greatly in effectiveness. In the Gascoyne basin Robert E Bush's large leases, Upper and Lower Clifton Downs, were run by managers after Bush and his family returned to England in 1904. By that time the properties were fenced into paddocks with strategically placed watering points. Subsequent managers carried out expansion and maintenance work. Under the terms of the Land Act, 1917, Upper Clifton Downs was divided, with the western half being first known as Aurillia, then later Landor Station. The eastern half, together with part of Charles Smith's leases, took on the name Mount Clere (McDonald 1991, SROWA 1901, Cons 1672, AN3/4, Item 8782/1901; PLAP 1926, 72/300). On the headwaters of the Ashburton and in the Gascoyne the rest of Charles Smith's partially-developed leases were in the hands of so-called 'verandah' managers, who allegedly spent their days on their verandahs sipping whisky and ordering their staff. Such men were held in contempt by the grassmen (Barndon, 1996b, Officer 1996b, Steadman 1996b) and showed no regard for the welfare of the land. After Smith's death at Nannine in 1912, the properties fell into a state of disrepair and were not amalgamated until many years later (SROWA 1901, Cons 1672, AN3/4, Item 8782/1901).

There were also managers of leases in the Fitzroy basin who gave little thought for the rangelands for which they were responsible, and whose owners were slow to develop their leases. Whether it was through the high cost of cartage for fencing materials or in the belief that the grasses would continue to recuperate after grazing, fencing away from the black soil plains of the river frontage was slower than on the leases of the North West. The sheep were still shepherded along the rivers and billabongs after the turn of the century with the resultant destruction of the foraging grasses and encroachment of poverty bush onto the best lands. By 1927 on Liveringa this invasion was a cause for concern for the South West-based KPC directors. It was not until the 1930s that Kimberley Rose, a member of the company and an experienced grassman, endeavoured to open the surrounding pindan country for grazing, though he battled with the KPC for funding (SROWA 1899-1935, ACC 4445A, MN149/2, Items 1-12). The cost of fencing wire at that time was prohibitive. Although wire was sold at nominal prices by

the DL&S to encourage the fencing of the leases it was still expensive. In the late 1920s a tonne of barbed wire cost £24, and plain wire £23.10s.0d, before freight charges were added (SROWA 1915-1967, ACC1777, AN3/23, File 227.15). Grassmen and corporations in the river basins faced other difficulties as well.

8.6 Stock Diseases, Cattle Duffing and the Vermin Problem

For those in the Fitzroy basin who ran cattle, redwater fever, a disease transmitted by cattle tick (*Boophilus microphus*) was a constant problem. The tick was introduced into the Northern Territory by South African Zebu cattle and swiftly spread to the Kimberley (Edwards 1991). It reached epidemic proportions during the 1890s and continued to plague cattlemen from that time on (Bolton and Pederson, 1980). In 1909 a Tick Line was gazetted, effectively isolating the East Kimberley and the eastern portion of the Fitzroy basin. Restrictions were also placed on the export of Fitzroy cattle (SROWA 1908, ACC 1778, AN3/24, Item 1421.08). Dipping was the remedy, with cattle on the stock route having to be dipped at Wallal Station on the Eighty Mile Beach before continuing their long journey south (Lacy 1979). Other ailments that decimated the herds were pleuropneumonia and buffalo fly infestation. Scab in sheep was another problem of the early years and present in the coastal regions of the basins. Dipping sheep in a tobacco water before and after shearing was a requirement towards eradication (Bain 1975). The Scab Act 1893-1894 was introduced in an endeavour to prevent the disease from spreading into unaffected regions (Crowley 1960).

Cattle duffing was practised by unscrupulous leaseholders who rounded up unbranded animals from neighbouring leases. Brumby Leake of Prairie Downs on the Ashburton headwaters was one noted individual in the early 1900s (Edwards 1994). On the Kimberley Plateau duffing was rife. During the 1920s and 1930s cattle-duffer Mick O'Connor systematically acquired his neighbours' cleanskins (Idriess 1950) In the DeGrey aviator Kingsford Smith, at the suggestion of his father-in-law Morris (or Maurice) McKenna of Meentheena, took up leases at the foot of the giant Warrawagine Station. McKenna used these leases for his cattle-duffing exploits during the 1920s (O'Grady 1995).

Vermin was troublesome to the grassmen endeavouring to increase their stock numbers to meet the requirements of the Land Act. The early PA was successful in parliament with the passing of the 1909 Vermin Act. Local vermin boards were established

to implement control measures on a district basis (Maisey 1979). Foxes were particularly active during the lambing season, and emus destroyed the fences. Rabbits ate out the grasses, and their warrens were dangerous for men on horseback. The vermin boards issued bounties for emu beaks, dingo scalps, fox pelts and rabbit skins for many years. Eradication programs provided a source of income for grassmen, their employees, itinerant workers and even roaming Aborigines. Dingoes, for example, were fetching up to £5.0s.0d per scalp in the lower Murchison (Keeffe 1994). An Aboriginal dingo hunter in the Murchison known as Dingo Jim worked on Yallalong Station baiting and trapping (Officer 1996a, Dingo 1997). Dingo trappers and baiters regularly patrolled the countryside seeking that elusive animal in the Gascoyne (Brick House Diaries 1900-1959). In the early 1930s in that region, Jack Bain, brother of Evan Bain of Woodlands, was a successful dingo trapper for the Vermin Board (Bain 1990). Grassmen and their stockmen in the DeGrey set traps and laid poison baits in an endeavour to eradicate dingoes (Cousens 1991). Dingoes were also a problem in the Camballin Paddock of Liveringa Station in the Fitzroy basin, where the ewes and lambs were depastured (SROWA 1899-1935, ACC 4445A, MN149, Items 1-12). Astonishingly, it was the rabbit-proof fences that helped control the dingoes by preventing them from entering the pastoral regions from the deserts (Broomhall 1991).

The fences had been constructed as a barrier against the hordes of rabbits that were crossing into the Western Australian agricultural regions and pastoral zones (Figure 8.2). Rabbit Proof Fence No. 1, surveyed by Arthur W. Canning from 1901 to 1903 and completed in 1907, extended nearly 2000 kilometres and had the distinction of being the longest fence in the world. Its DeGrey basin boundary was constructed using fence posts of bloodwood and blackheart cut from the trees along the banks of the Oakover River (Broomhall 1991), thus helping to denude the landscape further in that area. The fence was more effective against the dingoes and emus than against rabbits (Crowley 1960). In an attempt to further protect the agricultural areas of the South West from rabbit infestation, the Number 2 fence was built, commencing from the Number 1 fence near Wiluna and passing through the Murchison to the sea north of Murchison House Station. From its mid-point, a second arm ran south through Cunderdin, then south-east to meet the coast at Bremer Bay (The West Australian Museum). Grassmen and corporations were charged a rental for the portion of the fence that passed through their leases. Lee-Steere of Woolgorong in the Murchison paid an annual rent of £8 15s.0d for a portion of Number 2 fence (Lee-Steere 1905-1930). Despite the fences, however,

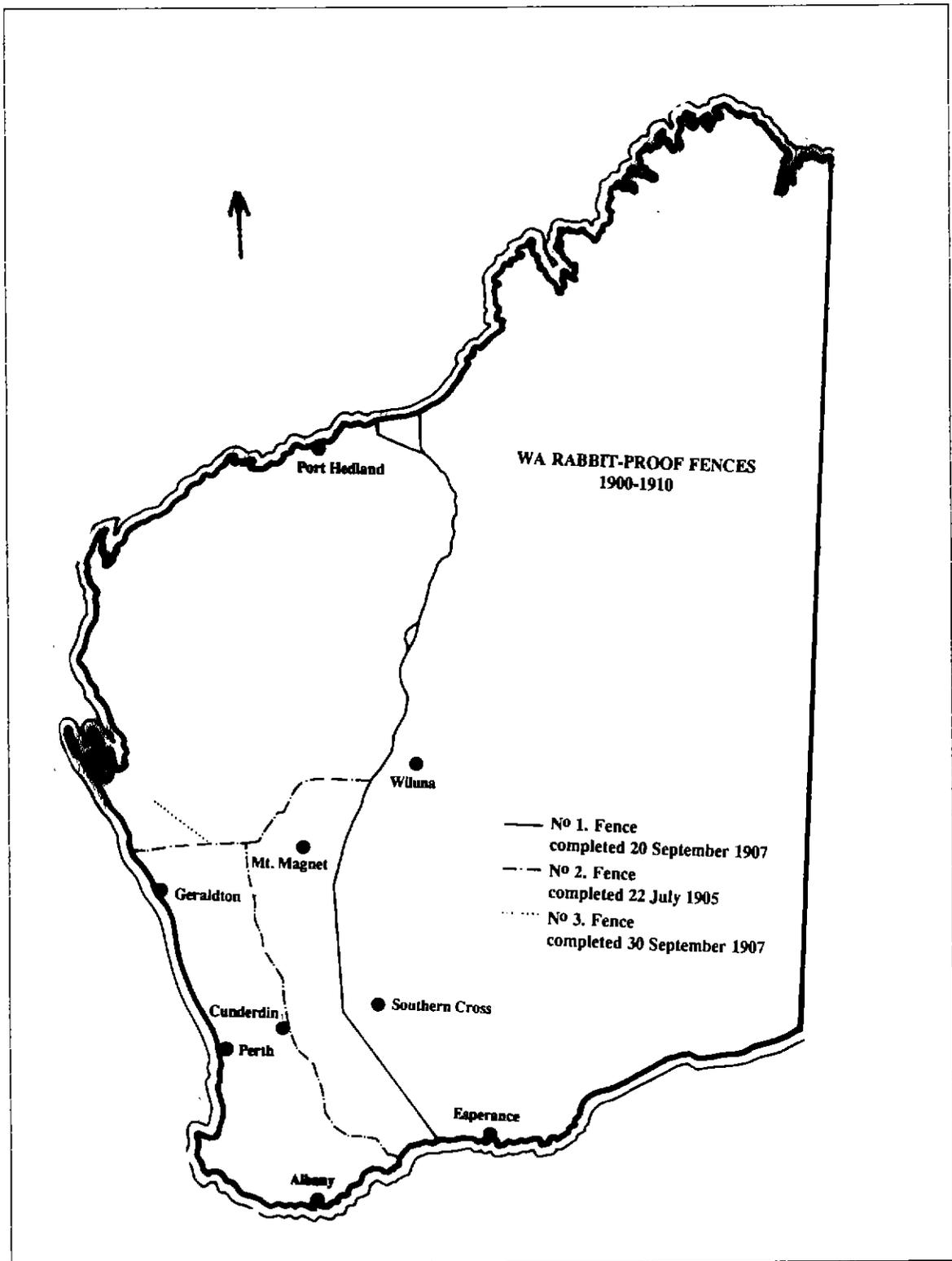


Figure 8.2: The Rabbit Proof Fences, Source: *The Rabbit Problem*, Information, The Western Australian Museum.

rabbits had invaded the Ashburton basin by 1910. Their destruction of the forage grasses caused some concern and the Ashburton Roads Board paid a bounty of 5s.0d for each rabbit caught (Webb 1983). Local authorities also paid bounties on euros. The Marble Bar Roads Board paid a fixed bounty per scalp for poisoned euros in the DeGrey basin (Holthouse 1987). According to contemporary local Aborigines, the euros were destroyed by leaseholders along the Fitzroy River because they competed with the sheep for the foraging grasses (Marshall 1988).

8.7 A Seemingly Stable Environment

The grassmen on the newer leases progressed at a far slower rate than the earlier, established grassmen. Evan Bain took up undeveloped country east of Mount Augustus Station after he returned from World War I. In 1935 his sheep numbers were only 4000, and he also had 1600 head of cattle. For 18 years he had struggled without the assistance of a large Aboriginal workforce to develop his lease before the Big Drought, with droving providing a major part of the income needed. Indeed, much of his land was considered by DL&S to be unproductive and remained underdeveloped (SROWA 1937, ACC 541, AN3/6, Item 233). A similar situation existed on other leases taken up after the turn of the century, such as Darlington's Callawa (formerly DeVahl) and Barker's Barramine on the edge of the DeGrey basin (O'Grady 1995), and Stalley and Nalder's Peak Hill Station on the Murchison headwaters (SROWA 1936, ACC 541, AN3/6, Item 2607).

Apart from amalgamation of leases, the growth of established stations was reflected in the sprawl of complexes. The small, existing dwellings that first housed the grassmen's families and the corporations' managers were replaced by more substantial homesteads in the early 1900s, by the Burts on Brick House (Brick House Diaries 1900-1959), the Darlots on Warrawagine (O'Grady 1995), the KPC on Liveringa (SROWA 1899-1935, ACC 4445A, MN149, Items 1-12) and the Sharpes on Wooleen (Nixon and Lefroy 1989) (Plate 8.6). Homesteads were surrounded by outbuildings that included a kitchen, a laundry, a storehouse, several workshops, and quarters for the white and Aboriginal workforce. Some stations such as Warrawagine had a separate kitchen and mess for the Aborigines (O'Grady 1995). Shearing sheds, shearers' quarters, blacksmith's shops, wagon sheds, harness rooms and windmill rooms all had their place (Brick House Diaries 1900-1959). On Mount Edgar, a developing lease in the DeGrey, there was a homestead, wool shed, shearers' quarters, men's quarters, blacksmith shop, a store, and a

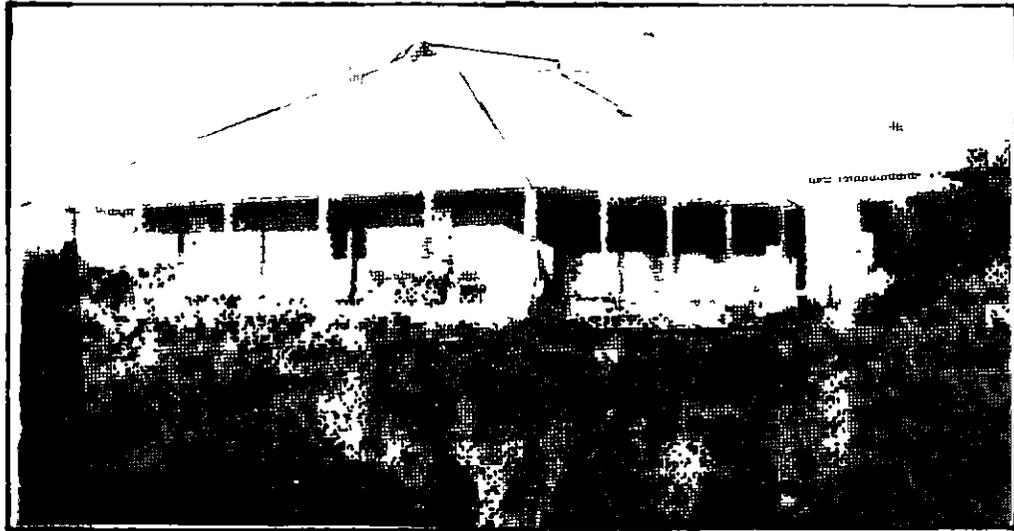


Plate 8.6: A new homestead almost completed on Ben Sharpe's Wooleen in the Murchison, Photograph WN 35, Murchison Museum, Murchison.

manager's dwelling. The shearing shed had an eight-stand Wolseley plant. The estimated cost of these improvements was £8892 (SROWA 1903, ACC 1384, AN3/9, Item 11840/03). From the Murchison basin to the Fitzroy basin established grassmen's homesteads resembled small villages (Plate 8.7).



Plate 8.7: A sprawling homestead complex on Hubert Lee-Steere's Woolgorong in the 1920s Photograph WA 7, Murchison Museum, Murchison.

Due to the distances and the cost of freighting heavy materials, the grassmen had to be resourceful to cut their costs. Buildings from the declining and

abandoned goldfields and ports were quickly requisitioned and re-used on the stations. In 1901 an hotel on O'Grady's Creek in the declining Ashburton goldfield on Ashburton Downs was taken over by the new owners, the Hancocks, and used as a shearing shed (Webb 1983). Returned soldier Evan Bain was to jinker by camel team two abandoned hotels from the declining towns of Peak Hill and Meekatharra for his homestead at Woodlands in the Upper Gascoyne (Bain 1990). In the Fortescue basin the Sharpes of Mardie Station near the river mouth acquired the goods shed from the abandoned Cossack-to-Roebourne tramway terminus and re-erected it for their shearing shed (Sharpe 1979)

Outcamps were established on strategic locations on the leases. Livinga in the Fitzroy had Paradise and other locations where the sheep were shepherded (SROWA 1899-1935, ACC 4445A, MN149, Items 1-12), Bidgiemia in the Gascoyne had Minginoo (McDonald 1991), Ernest Lee-Steere's former Innisfall Station homestead site became Mount Padbury's Wya Outcamp in the Murchison (Garrity 1996). Brick House in the Gascoyne had outcamps at No 4 bore at Boodalia, as well as at Uandoo and Square Tank (Brick House Diaries 1900-1959). Warrawagine in the DeGrey developed Warburton's abandoned Braeside Station and Sheep Camp as outcamps, with another outcamp located on a lease that eventually became part of Balfour Downs Station (O'Grady 1995) These important bases were manned by stockmen to watch over the stock and the watering points in each locality

At the beginning of each year and on wet days, employees worked around the established homestead complexes whitewashing buildings, concreting floors of the wagon sheds, blacksmith's shops, windmill shops and other outbuildings, re-building fowl runs, manuring gardens and doing other general repair and maintenance work (Brick House Diaries 1900-1959). In the Fitzroy basin an arsenic mixture was spread around shearing sheds and other buildings as a white ant deterrent (SROWA 1899-1935, ACC 4445A, MN149/2, Items 1-12) Vehicles and wagons were painted and varnished annually at Brick House (Brick House Diaries 1900-1959). On the Kimberley Plateau a different situation was evident on the developing stations with their small, corrugated iron homesteads with few outbuildings Edgar and the Blythe brothers and most of their employees moved to Derby for the duration of the wet season. For the return journey they carried enough stores on their packhorses to see them through the dry season. Mail was

also brought in by packhorse to Mount House Station, then delivered by Aboriginal runners to Glenroy (Idriess 1950).

Corrugated iron mangles were an important item of machinery on most stations. Much of the flat iron was corrugated on the lease either by the grassman and his workers, or by an experienced man hired for the job, as happened on Billabalong when the huge, curved, corrugated iron roofing was made and put in place over the homestead buildings during the 1920s (Jeffries 1996b). The iron was also used for making tanks, lining wells, and covering the roofs and walls of huts around the homestead and at the outcamps. Some grassmen also had ripple iron mangles which produced a finer corrugated iron used to line walls and ceilings, as was the case with the Landor homestead during the 1920s (Halleen 1996).

With a ready Aboriginal workforce available on the isolated stations, flower and vegetable gardens flourished during the winter months in all basins. Liveringa's vegetable patch was cared for by Aboriginal workers (SROWA 1899-1935, ACC 4445A, MN149/2, Item 5). The Burts at Brick House had a full-time Chinese gardener (Brick House Diaries 1900-1959). Lee-Steere at Woolgorong also had a large vegetable garden tended by Aborigines (Plate 8.8) (Officer 1996a). Hugh Carey, long-time bookkeeper for



Plate 8.8: Lee-Steere's vegetable patch on Woolgorong Station 1920s.
Photograph WG 9, Murchison Museum, Murchison.

Rubin on Warrawagine, maintained a large vegetable garden with Aboriginal help (Miller 1982). The Gordons who managed Millstream turned the nearby warm springs into a

tropical paradise of date palms and waterlilies, and included a bathhouse (Drake 1929). The action was to have a long-term negative effect on the Fortescue River's ecology (Park Notes 1996b).

Vegetables, fruit and butter were shipped in or purchased direct from the vessels at the small ports throughout the year. Potatoes came by the bag from Perth, onions from Singapore, and baskets of Chinese cabbage could be purchased all year round (Ronan 1964). Ships south-bound from Singapore sold bananas, pomeloes, mangosteens and preserved ginger packed in jars. Butter came from New South Wales in tins. For the summer months, dried British potatoes in tins were purchased (Holthouse 1987). Everything was purchased by the hundredweight or the ton, and packed in crates, cases, tins or bags for the long journey (O'Grady 1995). The Navigation Act 1917, which virtually restricted Australian coastal trade to Australian ships, stopped these luxury items arriving from Singapore on the 'Black Boats' with their all-Asian crews (Holthouse 1987).

Horse racing was a popular sport that involved animals specially bred on the stations for that purpose. Meetings were held in all ports, in the small inland towns and on the stations. Some outstanding winners from the North West went on to win races in the south, including the Perth Cup. Wandering Willie which was bred on Mundabullunganna was one, and John Lyal Stewart's Tremolite, bred on the DeGrey, won the Melbourne Cup. Stewart was well-known for many years for his fine racehorses that were bred and pastured on the DeGrey and Warrawagine Stations, including Sparkle which won the Perth Cup in 1912. Sparkle also took placings in the Adelaide Cup and at Randwick. Stud sires were kept on Warrawagine, whilst the breeding mares were kept on the softer ground of the DeGrey (Stove 1979). The Burts of Brick House bred a winner in Starlight. In 1913 Reg Burt won four races with this horse (Brick House Diaries 1900-1959), which later won several Carnarvon Cups (Burt Family Trophies 1915-1916). The racehorses competed with other stock for the foraging grasses but also received supplementary feed. The most famous grassman involved with racing was Ernest Lee-Steere of Belele in the Murchison with his equally famous horse Eurythmic (Edwards 1994). A racecourse was established near Gascoyne Junction for the yearly event, with grassmen and their families who attended the meetings camping at the track. (McDonald 1991). Another popular sport that involved horses was polo. Stations in the DeGrey basin formed their own polo clubs, which included Aboriginal players, and used their own

station-bred horses (Holthouse 1987). Such participation was possibly surprising, despite the indispensable Aboriginal contribution to the progress and economic well-being of the pastoral industry.

8.8 The Indigenous Population

Pilmer (1998:200) stated that at the time of his arrival in 1893 at the Thomas River Police station in the Gascoyne basin, there were thousands of Aborigines in the region. Many, who were working on the surrounding stations, he considered to be partly civilised. Aboriginal life in the station country, however, was characterised by exploitation, paternalism, deprivation and squalor. During 1900 and 1901 Travelling Inspector for Aborigines G. S. Olivey went to the North West to ascertain the condition of the Aborigines on the pastoral leases. Olivey reported that most Aborigines were well treated by the grassmen and corporate managers. He reported the Aborigines as mostly well-dressed and healthy, although some sicknesses, such as sexually-transmitted diseases, were evident. At the same time Olivey signed permits authorising Aborigines to continue to work on stations. On most leases there were one or two children of mixed descent. Rations issued by the grassmen and managers to the people on their leases on behalf of the Aboriginal Protection Board included 450 grammes of flour, 9 kilogrammes of meat, 113 grammes of tea and two sticks of tobacco per head per week. The highest recorded number of Aboriginal employees was 89 on DeGrey station (Olivey 1901).

In 1905 the Aboriginal Act came into force, granting the Chief Protector power over the welfare of Aboriginal children including those of mixed descent. The Act also provided for the creation of reserves for non-working Aborigines, with most being located on the outskirts of the small towns in the river basins. Permits were required for the grassmen and corporate managers to employ Aborigines, with mixed-descent children under 16 requiring a special permit under the supervision of the Chief Protector. The Act created problems on the leases throughout the North West. It was based upon the assumption that the Aborigines were facing inevitable extinction and there was a need to smooth the dying pillow. The Act also empowered the Chief Protector to place the mixed-descent children into institutions, to train them for employment as servants in suitable establishments (Aboriginal, Act 1905). The ensuing disruption was to have far-reaching effects in the future. Full-blood Aboriginal people were to be relocated on reserves, such as that at the Four-Mile Well out of Port Hedland (Stuart 1959). Other reserves were on the outskirts of the towns such as Meekatharra (Curley 1997).

Carnarvon (Lewis 1997) Gascoyne Junction (Clark 1992), Marble Bar and Nullagine (Morgan 1989), Derby and Fitzroy Crossing (Marshall 1988). Children of mixed-descent were taken to the Moore River Settlement in the south, or to Beagle Bay (Clark 1992, Marshall 1988, Morgan 1989) unless the grassman and his wife successfully pleaded to keep them, as the Millers of Warrawagine were able to do (Miller 1982).

On the Kimberley Plateau, however, Hann (1896) had earlier reported that the Aborigines were the wildest he had ever seen and were unapproachable. He considered them superior antagonists to those he knew in Queensland. The warrior-like nomads caused conflict with the cattlemen on the Plateau until well into the 1930s. The cattlemen went about their daily work armed, which at times failed to protect them against the determination of the Aborigines to rid their land of the newcomers (Idriess 1950). Punitive expeditions were regularly conducted in an attempt to eradicate or tame them (Pilmer 1998). A similar situation occurred in the other river basins of the North West. Disease, however, would appear to be the main factor that decimated the Aboriginal population numbers, rather than punitive expeditions.

Aborigines died by the thousands from introduced diseases that included smallpox, measles, influenza, sexually transmitted diseases, leprosy, and even the common cold (Edwards 1993). Typhoid also decimated their number (Forrest 1996). Most of the Derby Aborigines had died of influenza by the early 1890s (Camilleri 1986). Prior to the turn of the century there were 400 Aborigines on the DeGrey until diseases virtually wiped them out. On the Ashburton mining fields, Aborigines were dying from sexually transmitted diseases. Aboriginal boys of mixed descent were often taken by carriers, well-sinkers and other contract workers, learning their trade and becoming skilful at it. Equally as many however, were raped, sodomised, brutalised and beaten to death (Forrest 1996). McDonald (G.J.C. 1996) recorded that on the Murchison goldfields, where the Aboriginal camps were on the outskirts of the towns, prostitution was a problem. The sexually transmitted diseases, particularly *granulom pudendum*, a contact disease for yaws and leprosy, were rife (Forrest 1996).

The Big Sick in the Fitzroy basin, a term used by the Aborigines for leprosy, and the Spanish Influenza epidemic after World War I, took the lives of many Aborigines. These diseases were followed by a virulent form of malaria-meningitis-dysentery in the 1920s, which affected the white population also. All

three were reputed to have been introduced by the Asiatic crews of the fishing luggers (Idriess 1950). Leprosy victims from the Fortescue and Ashburton basins were transported to Bedout Island settlement, established in 1909, off the coast of Port Samson where they perished under extreme hardship. Those with venereal disease were taken to the Bernier and Dorre Islands settlements, established in 1908, off the coast of Carnarvon (Forrest 1996). In 1934 a leprosarium was finally established in Derby by the Saint John of God Sisters and serviced by medical personnel (Leprosarium Papers n.d.).

From the 1890s to 1935 the Aborigines were signed on to work on the stations for little or no wages. The work had changed little over the preceding 50 years. They were the musterers, straggler shearers (Plate 8.9), fencers, windmill men, stockmen, wood-choppers and general station workers. On some stations if they ran away, they were



Plate 8.9: Aboriginal straggler shearers' Boonja, Darkie, Pat, Bob Scott and Bill Carroll blade shearing on Muccan Station. Source: Holthouse (1987).

usually brought back by the police and given a flogging by the grassman or manager (Edwards 1993). Women helped in the homestead as cooks and housemaids (Plate 8.10), did the washing and ironing, were nursemaids to the leaseholder's children, swept the house yards, worked in the garden, or on the range with the mustering teams (Morgan 1989). In the Fitzroy basin the men were regular cattle drovers or members of droving teams, which travelled either from the Kimberley Plateau to Derby, or along the river with cattle or sheep from the river stations (Bird 1988). In the other river basins from the 1920s to the 1930s the Aborigines were also involved in droving. Jack Murray, who also worked on



Plate 8.10: House girls of DeGrey Station in their long, flowing *ginna ginnas*, about 1915. Source: Hardie (1988).

Bain's Woodlands as well as droving, recorded that at that time the droving teams were mostly Aboriginal (Murray 1986). In the Gascoyne in the 1920s and 1930s Aborigines went droving and the women helped in the stockyards. Some received a token wage for their work. Sam Drummond on Doorrawarra in the Gascoyne was paid 10s.0d a week as a stockman during the 1920s. An extra bonus for Aborigines was the 7s.6d paid by the Vermin Board for a fox scalp, and the sale of kangaroo skins (Drummond 1992). On Belele in the Murchison basin nomadic groups traded kangaroo skins for food at the station store (Lee-Steere 1996). Station-based Aborigines also hunted and collected their traditional foods, when available, to supplement the meat, damper and tea (Marshall 1988).

As the gold rushes declined, however, unemployed men from the fields looked jealously at the Aborigines who worked for no pay except their food, clothing and tobacco. The fledgling trade union movement was vocal about what it considered to be slave labour whilst many white men were unemployed. As we have seen, the resultant discriminatory furore deprived many Aborigines of their shearing jobs (SROWA 1899-1935, Cons 1240A, MN 149, Items 1-13), to the anger and frustration of the grassmen (Forrest 1996).

The Aborigines on the outskirts of the towns located in the river basins were semi-nomadic groups not incorporated into station life. They fed on European food when it could be procured, and begged for tobacco. For other food resources they hunted

the rangelands for the kangaroo, bustard, emu, pigeon, parrot, gathered frogs from the pools, and seeds from the bushes and grasses (McDonald G.J.C. 1996). They sought the bush honey, made bush bread from the wild onion, and along the Fitzroy caught the barramundi and cherrubun. In the DeGrey basin fish were taken from the Oakover and DeGrey rivers. Nevertheless the Aboriginal way of life was precarious. With the lands taken up by leaseholders, traditional resources became more difficult to procure as boundary fences enclosed the leases. As the stations developed and leases amalgamated, game became scarce in the competition with stock for the rangeland resources (Marshall 1988). Meanwhile, by the 1930s second and third generations of Aboriginal people had grown up on the stations and were totally dependent on them for their needs.

In all the basins traditional initiations and corroborees were modified to conform with the requirements of station life (Lawford 1988). Groups from one station would visit another for holidays, or 'pink eye', and corroborees were held at those times. In the Upper Gascoyne, Aborigines from Turee Creek Station in the Ashburton basin held traditional activities with those of Milgun and Mount Augustus in the Gascoyne (Bain 1990). During this time, as in the Fitzroy basin, sacred places were visited and sacred objects withdrawn from their hiding places and used in the traditional manner (Kolig 1987, Marshall 1988). In the DeGrey, the women yandied for gold around Nullagine, which they exchanged with the local storekeeper for tea, sugar, flour and tobacco. Sometimes the gold was sold to the police, who paid them very little for their efforts (Stuart 1959).

In the DeGrey basin some mixed-descent children who were able to escape being sent to the reserves, later had an important impact on the pastoral industry. One such individual was Clancy McKenna, who was born in 1909 on Meentheena Station. Clancy's father was the notorious Morris McKenna, his mother a Nyamal. In Aboriginal tradition his mother's Aboriginal partner was a Djungunbuna, thus Clancy was reared in the traditional manner and eventually initiated into the Law, whilst learning station work on Meentheena, Mount Edgar, Coongan, Limestone, Eginbah, Warrawagine and other stations in the basin (Palmer and McKenna 1978). A full-blood Aboriginal, Dooly Bin Bin, was also born early in the century, and grew up in the East Pilbara. He was initiated into Aboriginal Law in the 1920s (Stuart 1959). These men, among others, were to have a significant impact on the pastoral industry and considerable influence on their fellow-Aborigines.

Another man of mixed-descent was Billy Dunn. His people, the Martukaja, were a desert group who drifted in from the drought-stricken Rudall region to the Nullagine mining fields in the DeGrey basin around the turn of the century. His mother, Jirntukurra, was given the anglicised name of Dinah by the prospectors on the field. Billy was born in August 1911, his father the European prospector Bill Dunn. Fortunately for Billy a concerned prospector Mick Doherty registered the birth. Billy learned the traditional mores of his people and those of the prospectors, with the ambition of becoming a landowner (Wilson 1989). Of importance was the work Dunn later carried out eradicating dingoes and in desert exploration.

Jack McPhee, who was also of mixed descent, was born around 1905 in the Oakover-Davis Rivers region in the DeGrey basin. His mother was Marduwanyjawurru with the European name of Mary. McPhee was initiated into the Law, worked as a stockman on the stations along the DeGrey River, including DeGrey and Warrawagine, and was a drover (Morgan 1989). Little is known of another, Tommy Gray, except that he was born sometime in the early 20th century at Roebourne and attended the Roebourne State School. His mother was Aboriginal, his father a European. By the 1930s Gray was head stockman of Wallal on the 80 Mile Beach (Selsmark 1979). As a drover he was to make a lasting contribution to the pastoral industry with the planting of buffel grass seed in the late 1930s along the Oakover river frontage (Wilson 1989).

In the Murchison Avey Curley was born just after the turn of the century and grew up on Tibbradden, a station east of Geraldton. She was to later have an important involvement with the Aboriginal people on the reserves in the Murchison goldfields, concerning bettering their housing and employment conditions.

Overall therefore, the indigenous people of the river basins had adapted to some European standards, whilst maintaining a quasi-traditional lifestyle. Many suffered diseases, and all were exploited to a greater or lesser extent. Nevertheless, a large number settled into station life, becoming loyal and trusted workers. It was largely through their efforts that pastoralism progressed in the river basins, despite the variability of climate. Others, born at the turn of the 20th century, and of mixed descent, however, were to have an important influence upon future establishments of communities in the river basins.

8.9 Climatic Hazards

Because of the devastating effects of dry seasons and the crucial importance of rainfall, the recording of precipitation became an important station activity. The recording of rainfall and other meteorological data commenced in various areas at various times. The earliest recording of rainfall and other meteorological data that could be related to the Fitzroy basin, was taken by D.B. Ord in Derby in 1883. Other rainfall observation bases commenced at spasmodic intervals on the stations and Fitzroy Crossing with the spread of the telegraph lines that linked the basin with the Meteorological Branch of the DL&S (Bureau of Meteorology 1996). Carnarvon had its first weather recording in 1883 also, with the Darlots of Berringarra in the Murchison recording their observations at the same time. With the advent of the Murchison goldrushes, further recording stations were opened. It was the expansion of the aviation industry, however, during the 1920s and 1930s, that helped to increase the weather services throughout the North West, and rainfall recordings were reported more regularly (Bureau of Meteorology 1998).

Drought and cyclonic activity were reported by the early settlers of the basins to the newspapers, noted in their diaries, and in letters to friends and family. Brockman (1987) on Boolathanna in the Gascoyne basin recorded in his diary the effects of a dry period at the turn of the century. He described the thick dust whipped up by high winds, the distressing sight of dying stock, the mournful cawing of the crows, the herbage dried out and blowing away, and the plight of the starving Aborigines, particularly those on the neighbouring Wandagee, during this period. Dry seasons and wet ones followed each other at spasmodic intervals. Cyclones, however, were beneficial to the rangelands, but were devastating at times for the European population.

In the lower Ashburton in 1893 a cyclone broke the three-year 1890-1892 drought. Torrential running water however, caused erosion along the creek and river frontages, which had been disturbed by mining activities, and where stock had been droved or shepherded (Webb 1983). In the Gascoyne basin Pilmer (1998:24) records the summer storm that swept over the Thomas River Police Station in the same year, breaking the drought. Roaring winds and blinding dust preceded the storm and the Aborigines, who were camped along the river bed among the trees, moved to the police station on higher ground. In the afternoon, after a deluge of rain he writes:

....there was another roar in the distance, on a deeper note, yet none the less terrible. The Thomas River came down, a solid wall of water ten feet high, banked by hundreds of tons of timber and rubbish, rolling like a waterfall along its sandy bed.

In 1894 heavy rains brought the Fitzroy and Lennard Rivers down in a huge flood and the entire river plains of both basins were under water. Stock losses were high. At Lillimilura in the Lennard basin 14 000 sheep were drowned, which resulted in Lukin and Monger abandoning the station that later became a police depot. A total of 30 000 sheep were recorded as drowned in the West Kimberley (Edwards 1991). Further south a cyclone swept across the coast of the DeGrey basin in March 1896, causing devastation at Warrawagine, demolishing the kitchen, men's room, saddle room, and portions of the mud brick homestead, and burying goods, chattels and clothing in thick mud when the Nullagine ran a racing brown flood (SROWA 1896, ACC 2370A, Item No A11). At Cossack in 1898 another cyclone was responsible for the destruction of pearling luggers and the small steamship that serviced the lighthouse (Plate 8.11). Further north at



Plate 8.11: Wreckage of the Cossack wharf and pearling luggers after the 1898 cyclone. Source: Hancock (1979).

Whim Creek, the same disturbance washed away an uncompleted railway from the Whim Creek copper mine to the small port of Balla Balla (Hancock 1979)

In February 1902, Hancock's shearing shed, previously the old hotel situated on O'Grady's Creek in the Ashburton basin, was saturated up to a depth of three metres with flood waters caused through heavy rainfall (Forrest 1996) Webb (1983)

reported that cyclonic activity near Onslow between 1902 and 1904 changed the course of the Ashburton river and the location of its mouth. The highest monthly rainfall recorded for Onslow was in 1904, when 221mm fell in July (McCall 1999). In 1905 the Gascoyne flooded and then on the 14th of March 1907, a cyclone passed Carnarvon causing further major flooding (Valli 1983).

In 1908 floodwaters raced down the Murchison River, demolishing homesteads and washing away sheep (Nixon and Lefroy 1989). Station rainfall records for May that year record high falls for Woolgorong, Billabalong, Wooleen and Murchison House Stations (McCall 1999). In the same year a cyclone lashed Roebuck Bay, drowning 50 deck hands and demolishing the pearling fleet (Crowley 1960). Captain Ancell Gregory was the sole survivor of the *Keander Bux*, one of Mark Rubin's fleet of 28 that went down in the storm (Battye 1985). In the Fitzroy basin, Yeeda Station reported 232mm in March of that year (McCall 1999).

Dry seasons were experienced along the Gascoyne between 1911 and 1914 (Valli 1983). Whilst the Gascoyne was dry in 1912, the West Kimberley coast witnessed a cyclone on the 20th to the 23rd of March that sank the lightly-laden steamship *Koombana* with its load of wool and 140 passengers. The cyclone disabled the *Bullara* and forced pearling luggers into shelter along the coast from Port Hedland to Broome (*The Hedland Advocate* 1912). One of the *Koombana's* passengers was Abraham Davis, owner of DeVahl Station in the East Pilbara (SROWA 1912, Cons 3043, Item 249/12). A further cyclone in 1914 resulted in a major flood on the Fitzroy River and was recorded by stranded boundary rider Findlay in a hut on the Erskine Sandhills (Goh 1993).

Again during another Gascoyne dry period in 1924-1926 (Valli 1983), the DeGrey basin experienced a cyclone on the 27th of February 1925, the eye passing over Muccan Station (Plate 8.12). The winds destroyed buildings, blew over 38 mills, stripped trees of their leaves and branches, destroyed the telephone line that linked the station with Coongan, and drowned or washed away 30 000 sheep from the stations along the rivers except Muccan, as Holthouse was able to remove stock from the river frontages before the resultant flood came down river (Holthouse 1987). Strelley, outside the DeGrey basin on its western boundary, and Mulyie, within the basin, received the highest rainfall for February with 224mm and 211mm respectively. Ettrick, also within the basin, followed with 174mm, DeGrey 167mm, Yarrie 128, Muccan 125mm, Condon 107mm and

Warrawagine, the furthest upriver, with only 73mm (Figure 8.3) (McCall 1999). From the recording it is reasonable to suppose that the cyclone crossed the coast around Port Hedland.



Plate 8.12: Cyclone damage on Muccan Station 1925. Source: Holthouse (1987).

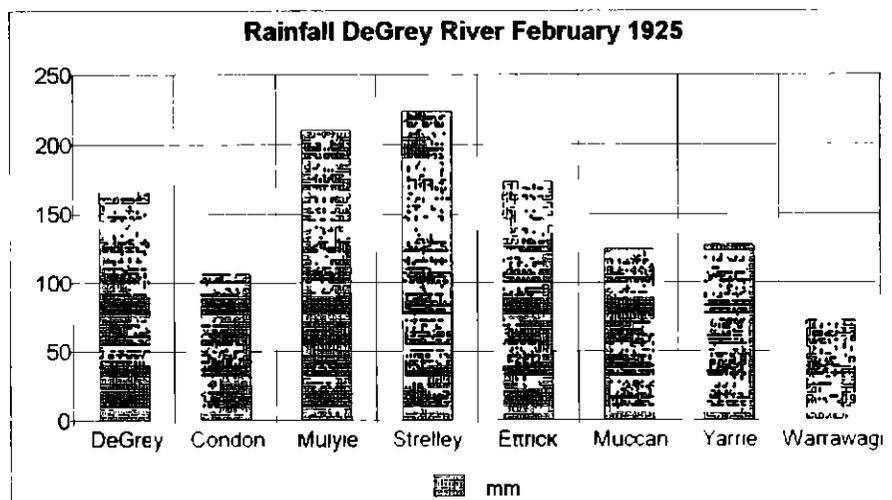


Figure 8.4: Rainfall figures for February 1925 in the DeGrey basin. Source: McCall (1999).

There was no recording of stock losses or grass deterioration with the dry seasons of the Gascoyne and other areas. Cyclonic activity did the most damage whilst at the same time rejuvenating the native grasses, flushing out river and creek systems, and

replenishing the underground water supplies and aquifers. Some grassmen and other leaseholders had yet to be more organised in preparation against the cyclonic high winds and the movement of stock from the path of the resulting floods.

8.9 Conclusion

Rainfall, cyclonic or otherwise, was beneficial to the rangelands, stimulating regrowth of important seeds for foraging plants. Drought, however, caused severe rangeland problems and human heartache. The Land Acts administered by the PB required the grassmen to stock their leases within a certain time with a specific number of stock. To ignore the requirements meant forfeiture of the lease. Up to 1935, the leaseholders were able to comply with the required land regulations as they steadily improved their flocks and herds, and, aided by an adaptable and proficient indigenous workforce, developed their leases into profitable industries, and generally were able to survive comfortably. Those Aborigines who became incorporated into the station environment, whilst underpaid were generally well-cared for and willingly participated in station work. Those outside of the station regime were subjected to squalid living conditions, diseases and punitive expeditions.

Meanwhile the pastoral industry spread through the river basins. Notwithstanding the vagaries of the climate, only the Fitzroy basin appeared to suffer the problem of useless and unpalatable plants encroaching on the overstocked and eaten-out Mitchell grass plains of the river frontage. Cyclones continued to periodically batter the coastline of the North West, bringing welcome rain. With such a seemingly stable situation well might officialdom feel that the development of the North West was moving forward. Before long however, the Big Drought was to devastate the pastoral industry and the rangelands in the river basins to such an extent that neither would ever fully recover

Chapter Nine

The Big Drought and Landscape Changes to 1949

9.1 Introduction

Until 1935 the PB, pursuant to the requirement of the Land Acts, had the responsibility of overseeing the stocking rates of pastoral leases and played a major role in pastoral intensification. The PB's estimated carrying capacity (ECC) was born of ignorance of the phenomenal environment in the North West. Furthermore, the Board failed to understand the behavioural environment as viewed by the grassmen living in it. The ECC was based on a British perception of a landscape comprising neatly surveyed areas fully operable with established fencing and watering points, combined with the PB's perception of adequate stocking rates (Blood, David 1997). The enforcement of stocking requirements during the years of the Big Drought (1935-1945) had a detrimental long-term effect on a parched, semi-arid landscape, for in periods of prolonged low rainfall, the grassmen were forced to carry stock beyond the rangeland's capacity. The expansion of the previous years was halted under the environmental devastation of the 1930s. The advent of World War II provided some economic stability with regulated wool prices, but was also responsible for a shortage of labour and the leaseholders' inability to procure necessary equipment for repair and maintenance of the stations. Most Aborigines during this period, however, continued to work in the industry, whilst others became increasingly active, particularly in the Pilbara, in demanding recognition of Aboriginal rights and needs

As the rangelands were eaten out during the drought, most grassmen had little choice but to watch their stock die by the thousands from starvation. Established operators grimly held on, with massive debts accruing as they curtailed their stock numbers whilst dealing with an unsympathetic Minister for Lands whose perception, despite his visits to the drought-stricken North West, was that the grassmen were failing in their obligation to intensify. The rangelands would not have been in such an appalling condition if the PB had had a more realistic ECC during the building-up and consolidating years of the 1920s

Those on the developing leases, with many on the periphery of desert lands, generally were in the worst situation. Some abandoned their stations. For example, at the onset of the drought camel teamster Herbert Barker sold his lease Barramine, which

was situated on the eastern boundary of the giant Warrawagine in the DeGrey basin, to Georgina Louise Heppingstone (Figure 9.13). Heppingstone was refused rent relief, and in 1939, she sold the lease to the Lefroy brothers. Jeffrey Lefroy continued to seek rent relief for the station, but was refused, and two years later, being deeply in debt, the brothers abandoned the lease, selling their few goods and remaining stock to the neighbouring Warrawagine (SROWA 1937, ACC 541, AN3/6, Item 452). Minister for Lands, Frank Wise, was content to preside over the phasing-out of the small, unproductive and marginal leases, for he knew that restocking them would be a slow, lengthy and expensive process. Because Wise failed to inform these leaseholders of the future non-viability of their leases, they struggled for survival, getting deeper into debt until they walked off. It would seem an inhumane action on the part of Wise not to acquaint the leaseholders, who in some ways remained ignorant of the true situation. It is astonishing therefore, that the PB in its wisdom, had allowed such areas of land to be taken up after World War I in the first place.

Such conditions and similar official ignorance existed in other areas of the basins. Grassman George Gooch struggled to keep the early-established Wandagee in the Gascoyne (Figure 9.7). In 1935 water from the river wells had already dried up, and by 1939 only three dams were operable, from which water was piped across the paddocks. Wise considered that this lease was understocked and that it could have been run in a more efficient manner, drought or not. An effective grassman, Gooch replied that he was lightly stocked because of the prevailing conditions, thus showing a more accurate perception of rangeland conditions than the Perth-based Minister for Lands (SROWA 1936, ACC 541, AN3/6, Item 2376). Knowledge of the North West climatic conditions was indeed crucial to the survival of the pastoral industry and rangelands.

9.2 Climate of the River Basins 1936-1950

Figure 9.1 depicts the situation from 1934 to 1946 at locations on or near the coast of the six river basins. The spasmodic and highly localised rains that fell throughout the drought period brought up green feed in isolated areas that withered away within a day or two. The driest years were from 1935 to 1941, and in 1944. Though the Fitzroy basin received much heavier falls than the others, rainfall was certainly lower than in previous years. Cyclonic activity in 1942 brought beneficial rain to the Fitzroy, DeGrey, Fortescue, Ashburton and Murchison basins. The coastal Gascoyne, however, received little of this rain. Brick House recorded no rainfall from January to April, with 102.4mm

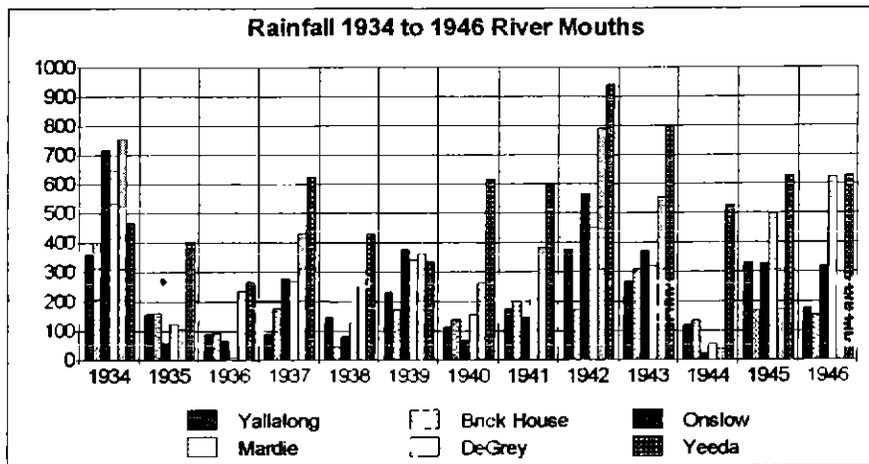


Figure 9.1: Coastal or near-coastal locations: Rainfall 1934-1946.
Source: McCall 1999.

for May and light falls through to September, nothing for October and November with 13.2mm for December, giving a total of 170.7mm (McCall 1999).

A similar situation occurred in the centre of the six basins, with a paucity of rainfall occurring from 1936 as the drought appeared to spread inland from the coast and with 1944 the driest year recorded for these regions also (Figure 9.2). The graph gives the

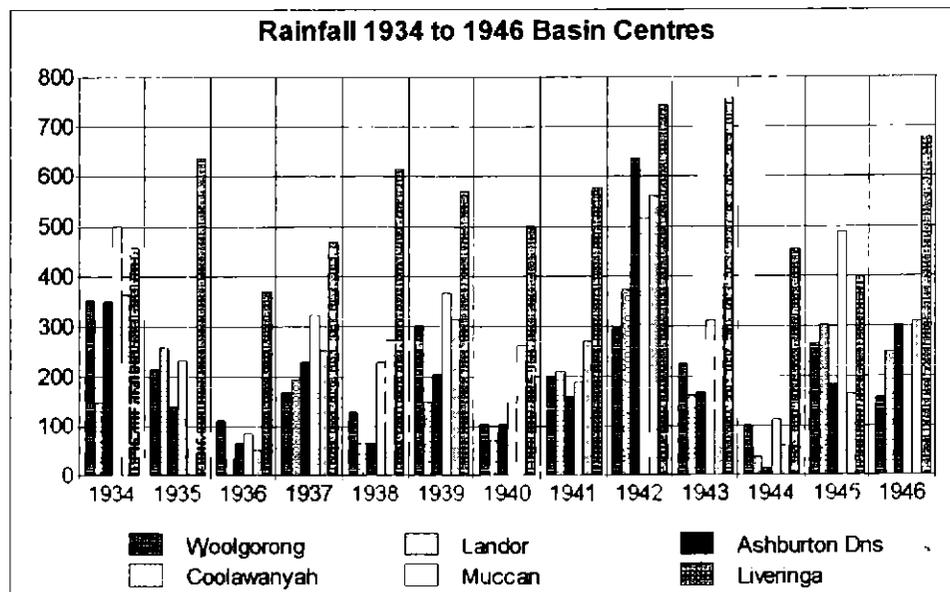


Figure 9.2: The graph depicts the similarities of rainfall in the central areas of the river basins as that around the coastal regions. Source: McCall 1999

appearance of relatively good falls for 1939, but the rain was scattered, with Landor in the Gascoyne and Ashburton Downs in the Ashburton receiving light, dispersed falls throughout the year on isolated areas of the leases (SROWA 1936, ACC 541, Items 2171, 2208). Welcome cyclonic rain fell in 1942, and for some areas the drought was broken. As with the coastal areas of the basins, 1944 was an exceptionally dry year in the central portions as well.

The drought was most pronounced however, in the headwaters of the rivers (Figure 9.3). 1940 and 1944 were the worst years for the Upper Murchison, with very dry conditions also in 1943 and 1945. Some beneficial rain was received in 1946,

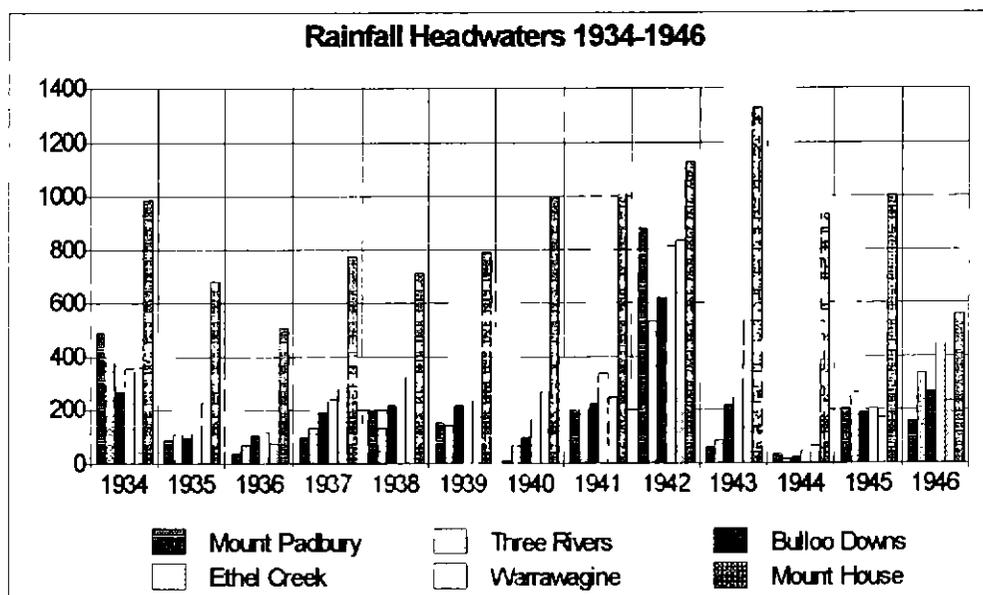


Figure 9.3: The pattern of rainfall of the headwaters of the six river basins. Source: McCall 1999, McAlary 1997b

though Mount House above the Fitzroy Valley received less than normal rainfall. The 1942 cyclone brought beneficial rain to the headwaters of the DeGrey, Fortescue, Ashburton and Murchison basins, whilst the Gascoyne received only light falls (McCall 1999). In the following year, Mount House recorded rain from January to April, and again in July, November and December, the total for the year being 1328mm (McAlary 1997b). In contrast, Mount Padbury in the Murchison received 60mm, Three Rivers in the Gascoyne 83.5mm, Bulloo Downs in the Ashburton 219.7mm, Ethel Creek in the Fortescue 301.1mm and 536.4mm which fell on Warrawagine in the DeGrey. In the

following year, 1944, Mount Padbury and Three Rivers recorded even lower rainfall, with 37mm and 16.5mm respectively (McCall 1999). The long-term drought brought devastation for the stock, the foraging grasses in the river basins, particularly along their frontage, as well as for the waterholes, aquifers and ground storage water supplies.

9.3 Effect of the Big Drought on Foraging Plants and Stock Numbers

Historically, rangeland degradation was most pronounced along the old shepherds' tracks and the stock routes that followed the river frontages, and around the waterholes. The ten-year Big Drought however, affected the pastoral industry statewide, impacted severely upon the already degraded areas and cast further degradation on a grand scale never before witnessed in the pastoral industry. In the earlier years of settlement, land administrators had unrealistic expectations of the rangeland's stocking capacity. This habit of over-optimistic appraisal is a point argued by more recent rangeland scientists in a study of the Gascoyne catchment (Wilcox and McKinnon 1972). During the drought, large areas of the Gascoyne basin were severely degraded (Payne et al 1987). In the Ashburton basin, severely affected areas were first recorded in the centre of the basin along the river frontages, then expanded westwards towards Onslow (Payne et al 1988). This area, which was previously important as a stock route to various mining centres, was already degraded by 1934. In the Murchison it was estimated that 75% of the *Atriplex* spp (saltbush) and *Maireana* spp (bluebush), and 25% of the *Acacia* spp. were destroyed during the Big Drought. Losses of 90% of scrub and shrubs were reported on some leases (Curry et al 1994). The rangeland and the stock routes never fully recovered.

Before the commencement of the drought in 1935, stock numbers in the North West were at an all-time high as required by the Land Act. In the previous year 5 593 718 sheep were shorn in the pastoral regions. By 1937 the number had dropped to 2 711 590 (Maisey 1979). In the Murchison, numbers dropped from 840 000 in 1934 to 250 000 in 1940 (Curry et al 1994). Indeed, by the end of 1936 some grassmen had lost up to 90% of their stock. As the drought continued, rams were kept away from the ewes and those lambs which were born led short lives. Stock routes were impassable and grassmen on stations isolated from the railheads were forced to stand by and watch their stock die. By the end of the drought the carrying capacity of the rangelands state-wide had been reduced by 45%. The decline ranged from 6% in the Port Hedland coastal area to 70% at Sandstone in the Eastern Goldfields (Maisey 1979). In the Fitzroy and DeGrey basins,

although rainfall was lower than normal, stock losses were not as severe as in the more seriously affected basins to the south.

In the North West, sheep numbers dropped by nearly two million during the ten-year drought period, the Gascoyne region having the highest losses with over 500 000, followed by the Ashburton with over 300 000 and the Murchison close behind (Table 9.1). Apart from the Fitzroy River and its tributaries, the rivers and the waterholes dried up, though tantalising but limited rainfall occasionally drifted over the leases. The green feed that it produced however, was shortlived. As the drought strengthened its grip,

	1935		1946
Murchison	799 805	Murchison	511 092
Upper Gascoyne	511 595	Upper Gascoyne	237 865
Gascoyne-Minilya	725 728	Gascoyne-Minilya	420 521
Ashburton	596 550	Ashburton	228 899
Roebourn	323 240	Roebourn	158 594
Hamersley Tableland	161 933	Hamersley Tableland	52 975
Marble Bar	300 007	Marble Bar	129 505
Nullagine	141 138	Nullagine	65 074
West Kimberley	245 523	West Kimberley	156 740
TOTAL	3 805 519		1 971 263

Table 9.1: The dramatic fall of sheep numbers as a result of the Big Drought. Source: W. A. Statistics 1935, 1946.

the stock were surviving on dry feed, cut-down mulga trees and, in some cases, expensive fodder was purchased in an attempt to keep them alive. The non-appearance of rain was responsible for rangeland devastation because, in the absence of made roads and motor transport, most grassmen were unable to move the stock dying from the lack of foraging grasses as well as from lack of moisture. It would be unfair to accuse them of overstocking, for they were bound by the requirements of the Land Act. None could have foreseen such a drought, never before witnessed in the river basins since the beginning of European settlement. A selection of sheep numbers from an individual station from each basin depicts the drastic decline in numbers in local areas (Figure 9.4). In the Gascoyne, Bidgiemia with its over 90 000 sheep in 1934, was already overstocked at the onset of the drought, and by 1936 was carrying only 10 000 (SROWA 1937, ACC 541, AN3/6, Item 653/1), whilst in the Murchison, Coodardy had lost nearly all of its stock (SROWA 1936, ACC 541, AN3/6, Item 2642). From 1938 onwards stock numbers continued to remain very low (*Western Australian Statistical Registers*, Various).

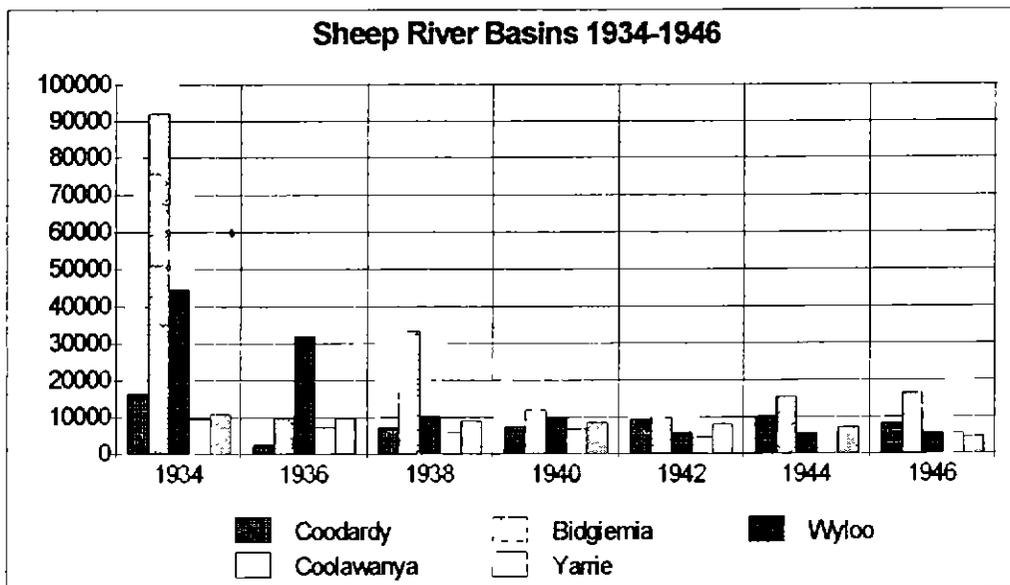


Figure 9.4: Declining sheep numbers of selected stations in the Murchison, Gascoyne, Ashburton, Fortescue and DeGrey basins from 1934 to 1946. Source: SROWA 541 Files.

The Land Act Amendment Act 1936 was devised to enable rent relief to be granted to the drought-stricken leaseholders. The amount of relief was based upon stock losses. In 1938 it was extended to cover floods, cyclones and a recovery period after natural disasters (Maisey 1979, SROWA 1936-1938, ACC 541, AN3/6, All files). All stations were required to submit a rent relief application form complete with the current stock numbers, rainfall for the past year, purchases and sales of stock, fodder purchased, number of lambs and calves, and losses through death. A total of 407 stations across the State applied for rent relief from 1936 to 1938, with most grassmen and corporations applying through their city-based accountants. During that period, applications totalled 23 from stations in the Murchison, 26 from the Gascoyne, 13 from the Ashburton, eight from the Fortescue, five from the DeGrey, and six from the Fitzroy (SROWA 1936-1938, ACC 541, AN3/6, All files). The stations in the Fitzroy basin were not granted rent relief, as they already benefited from subsidised freight costs, and their stock losses were minimal.

Wool prices also were affected by the drought, arguably more so than by the Depression then currently in force. In 1934 wool had brought an average of 9.12 pence per pound, rising to 15.09 pence in 1936 before the drought strengthened its grip (Maisey 1979). From that period the wool clip was very light in weight, and wool itself in

poor condition (SROWA 1936, ACC 541, AN3/6, Item 2643/36). It was coarse due to fluctuations in the feed and water supply, its weak points being the fine crinkles in the fibre (Barndon 2000). In 1935 Yallalong Station in the Murchison produced 1630 bales of wool from its 89 732 sheep and sold the clip for £6475 13s.3d. By 1940 its flock had been reduced to 15 372 and its clip to 301 bales (SROWA 1936, ACC 541, AN/3/6, Item 2270). In that year the average wool price was a mere sixpence per pound (about 1s 1d per kilogramme) (SROWA 1936, ACC 541 AN 3/6, ITEM 2576). Large established stations such as Yallalong, with its 2.5 million hectares, suffered economic hardship, and the smaller grassmen faced the prospect of ruin. A Voluntary Debt Adjustment Committee was established by the PA for those suffering extreme hardship, with contributions from the Rural Relief Fund (Maisey 1979). Raife Darlington, a returned soldier and proprietor of the tiny marginal 40 000-hectare Callawa Station on the northern rim of the DeGrey basin, was to benefit from debt adjustment by a rare example of concern by Minister for Lands Frank Wise after a 1939 visit to the lease (SROWA 1936, ACC 541, AN3/6, Item 2674) The PA, which was diligent in showing politicians around the drought-stricken areas, obtained a one-third freight reduction in shipped fodder, and a one-quarter reduction in fodder and agistment charges on the railways (Maisey 1979). This concession did little to retrieve the overall situation, for the grassmen still faced possible bankruptcy

9.4 Drought-Affected Stations and Their Climatic Conditions: Some Examples

9.4a Murchison Basin

On Meeberrie, which straddled the Murchison River in the centre of the basin and under the management of Reginald Leslie Macpherson for J. & C. Butcher, dust storms were a daily occurrence during the drought. Macpherson (Broad 1993:504) was to write to a member of the Butcher family in June 1939:

I do hope you are not the same as I am and getting Wind, Dust and Damned disappointment. Its enough to break a camel's back and a man's heart. Good God isn't it ever going to rain again in this part of the World.

The drought brought dust, the smell of death, the dingoes, crows and eaglehawks. The situation was so serious in the Murchison basin that on the headwaters of the Sandford, the 185 706-hectare Coodardy Station (Figure 9.5) suffered from a shortage of foraging grasses. Anthony Langlois Bruce Lefroy resorted to cutting mulga as early as

August 1935 to feed his starving flock, spending £1000 at the time. Lefroy reported that of the 16 331 sheep shorn in 1934, 2 500 remained in 1936 (Figure 9.4) whilst 4980 had been sent to Midland Junction on agistment. Over a thousand of these were sold, to try and save the remainder. Summer falls of rain encouraged him to bring 2571 animals back to the lease. Conditions again deteriorated, however, and 5000 sheep were further agisted leaving 3000 on the lease in 1937. From that time on Lefroy continued periodically to send sheep and a few head of cattle and his horses away on agistment, returning them to the lease at the first sign of rain. In 1943 the agisted sheep and some of the cattle were sold as there were no foraging grasses. He described the country as being burnt-out from the continuing grip of the drought. In 1946 Lefroy sold the ten-year drought-ravaged and understocked lease to his hard-working manager M. G. Price and his brother. The Prices were able to agist their sheep at Hillview and Chittering. Small consignments of stock were walked to the Big Bell railhead, which was only nine kilometres away. Larger numbers were loaded at Cue, 32 kilometres distant, where there were more comprehensive stock-loading facilities (SROWA 1936, ACC 541, AN3/6, Item 2642).

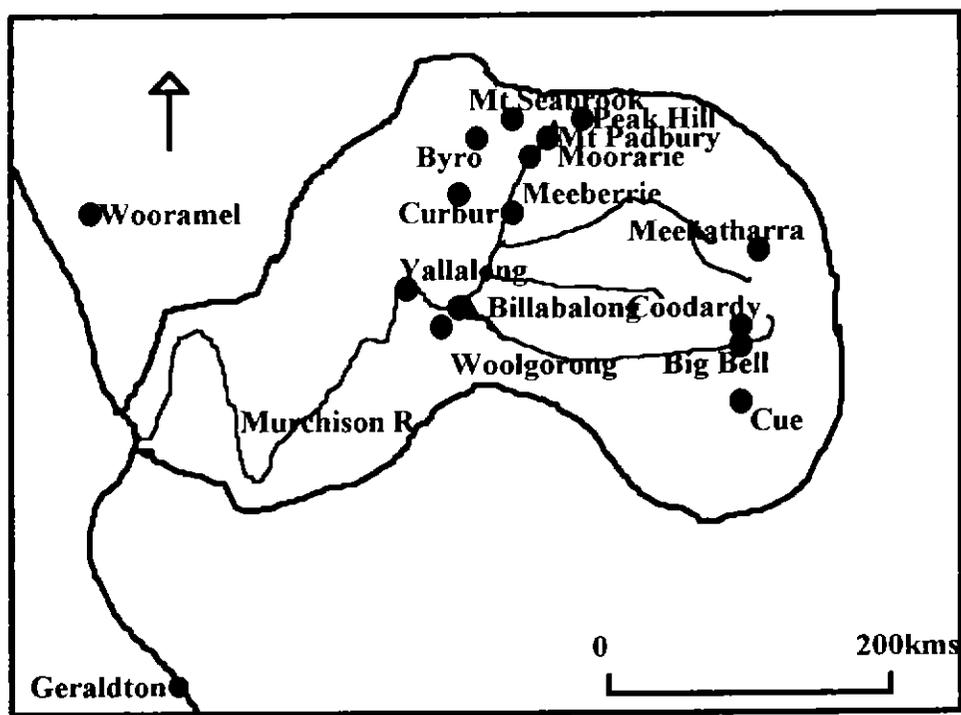


Figure 9.5: Selected drought-affected stations in the Murchison basin.

Returned serviceman Billy Martin, on Mount Padbury even closer to the headwaters of the Murchison River, was equally unfortunate. He lost 600 head of cattle in

the first two years of the drought and was unable to dispose of the remaining 300 head because the 130-kilometre stock route to Meekatharra was in such poor condition (Figure 9.5). Between 1934 and 1937 he also lost 40% of his flock of 3 200 sheep. Wool from the shearing included two bales gathered from dead sheep. By 1940 Martin was seriously thinking of giving up the station as the country was devoid of any foraging grasses or top feed (perennial shrubs). Shearing was carried out at the windmills to save droving weak sheep on a bare landscape. Martin also had to cut mulga to feed his remaining animals (SROWA 1937, ACC 541, AN3/6, Item 407).

Stalley and Nalder, on the neighbouring Peak Hill Station, had even greater difficulties to overcome. Income for their station during the drought was derived from prospecting. Nalder gave up and finally walked out, leaving Stalley to run the lease on his own. Stalley employed Aborigines to blade-shear the weak sheep in 1940 and again in 1943. He too resorted to mulga as a source of stock feed. Re-stocking during and after the drought was difficult due to the unavailability of sheep. In contrast to Buchanan in 1892, Stalley was to record that the landscape from Mundiwindi in the Fortescue region to Paynes Find south of the Murchison basin was devoid of any feed. He jokingly referred to his lease as *Sahara Downs*. By 1944, Stalley had had enough and sold the lease to Valdemar Sorenson of Mingah Springs in the Gascoyne. Sorenson was unable to procure any stock, and like Stalley, complained to the PB that the country was in such a deplorable condition that restocking was, in any case, out of the question. He transferred the remaining few sheep to his Mingah Springs lease and abandoned the Peak Hill Station in March 1945 (SROWA 1936, ACC 541, AN3/6, Item 2607).

Other desperate grassmen in the northern portion of the Murchison basin cut mulga for stock feed and also reported on the disappearance of foraging plants. Between 1936 and 1944 William Nichol Campbell of Mount Seabrook went scrub-cutting to feed his flock of 9200, and opened up new areas of his lease with watering points and fencing in an endeavour to spread his stock out. Despite such efforts the animals continued to die (SROWA 1936, ACC 541, AN3/6, Item 2383).

In the Central Murchison in 1935 the grassman Robert Campbell was nursing 21 185 sheep on Billabalong. Similar to Gooch of Wandagee in the Gascoyne, he informed the PB that his lease was overstocked due to the dry conditions and lack of feed

As the drought intensified, he was powerless to secure the survival of his stock, losing 11 839 in 12 months, as the nearest railheads were Pindar or Mullewa some 130 to 140 kilometres away. Campbell reported that the 1940 rainfall was the lowest recorded since 1900 (SROWA 1937, ACC 541, AN3/6, Item 70). As reported by other grassmen, his sheep were shorn in the paddocks at windmills using a timber structure with a canvas awning and electric shears powered by a transportable generator. The necessary yards for holding the sheep consisted of wide ringlock strung between posts, with wool bales stretched across it. A canvas flooring was laid for the shearers to stand on and for the wool to be sorted. The wool press stood out in the open (Jeffries 1996b). These structures were commonplace on stations throughout the drought years.

The Springs Pastoral Company, which held the Curbur lease in the Murchison under Ben Copley's management, complained that the mulga was dying through lack of moisture, and that the wells were drying up. Fortunately for Copley, he was able to truck ewes to the Mingenew district for the duration of the drought. Like others though, in 1947 Copley was to complain he was unable to purchase sheep for restocking (SROWA 1936, ACC 541, AN3/6, Item 2597).

Woolgorong, being further south and receiving a more congenial rainfall, was more fortunate. When two years into the drought Hubert Lee-Steere, by then an old man, sold the lease to his manager James Officer, who was able to apply for, and receive, rent relief up to 1945. Throughout the period, through careful management, Officer was able to maintain flock numbers at about 20 000 (SROWA 1918, Cons 1384, Item Vol 1735). By contrast, on Yallalong, numbers declined from 89 732 in 1935 to 20 413 in the following year. From 1937 to 1941 the flock fluctuated between 15 000 and 20 000. With the 1942 rains, the number again climbed towards 20 000. In 1946 the Mitchell brothers reported that 50% of the bluebush on the station had been lost (SROWA 1936, ACC 541, AN3/6, Item 2370). A number of more affluent grassmen who also owned land in the South West turned to mechanisation during the drought. The Darlot brothers of Byro for example, purchased a truck to transport their ewes to their Mingenew property. (SROWA 1936, ACC 541, AN3/6, Item 2267).

The drought had serious consequences for many of the Murchison basin stations. Figure 9.6 demonstrates that, with the exception of 1941 and 1943, the drought

was most severe in the headwaters, even though Mount Padbury benefitted from the 1942 cyclone (McCall 1999). A 1945 flood however, damaged mills, wells and fencing on Yallalong (SROWA 1936, ACC 541, AN3/6, Item 2370). Grassman Robert Campbell on the nearby Billabalong lease, lost his breeding ewes to the flood (SROWA 1937, ACC 541, AN3/6, Item 70), as did the Darlots of Byro further north, with a loss of 2000 breeding ewes and nearly all of their rams, and with considerable damage to the station buildings (SROWA 1936, ACC 541, AN3/6, Item 2267). The Prices on Coodardy further east along the Sanford River recorded 79mm of rain for February and 74mm in June, which generated new feed, hopefully alleviating the necessity of cutting down more mulga trees (SROWA 1936, ACC 541, AN3/6, Item 2642).

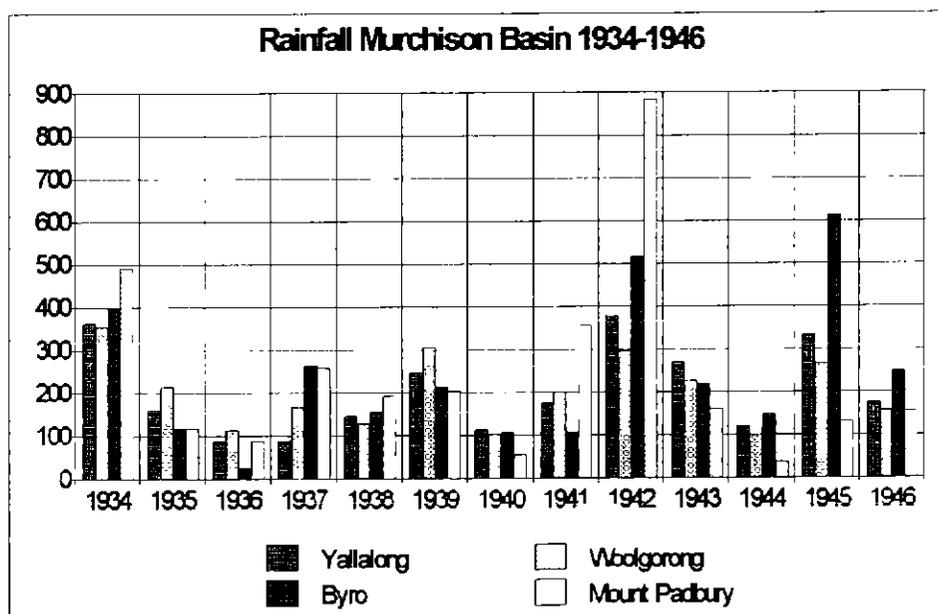


Figure 9.6: The pattern of rainfall in the Murchison basin. Note Mount Padbury's 1942 high record Source: McCall 1999

9 4b Gascoyne Basin

Like the grassmen in the Murchison basin, owners and managers in the Gascoyne basin were at the mercy of the drought. Mismanagement and overstocking were evident on at least one lease and stock losses were high. Seriously denuded stock routes also prevented agistment and marketing of stock, except for Brick House close to the port of Carnarvon (Figure 9 7), though their losses were still high. In 1935 the Burt family lost 20 000 of their 51 383 sheep In 1939, although numbers were down to 11 620, the Burts

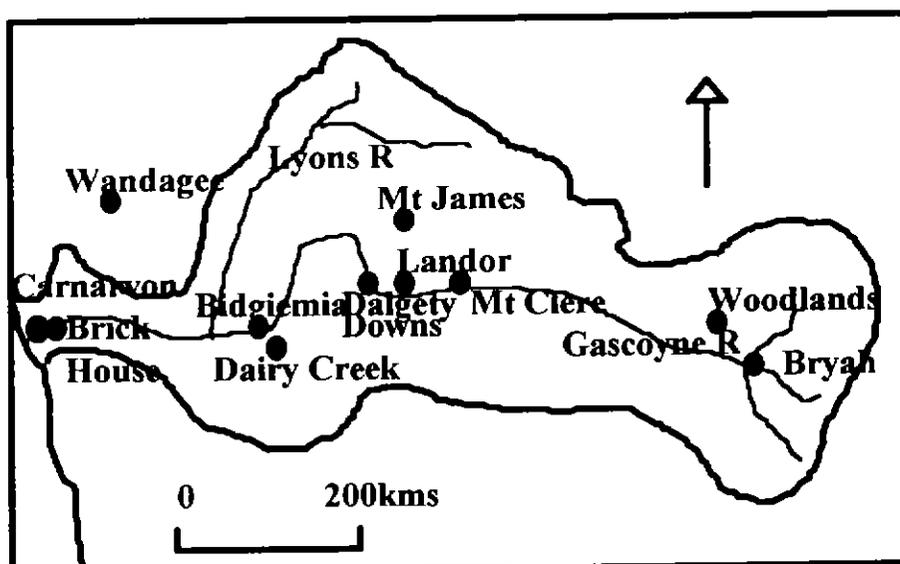


Figure 9.7: Selected drought-affected stations in the Gascoyne basin.

had to buy-in fodder at a cost of £517. By 1940 they were agisting nearly 4000 sheep and still hand-feeding the remainder (SROWA 1936, ACC 541, AN3/6, Item 2750).

It was a different story on Bidjemia, an old-established and seriously overstocked lease in the Gascoyne basin (Figure 9.7). The station carried 92 000 sheep in 1934, spread across more than 400 000 hectares of land. By 1936 the number had dropped to 10 000. There were no remarks in the ACC 541 file to indicate that any sheep had been agisted, except that there was a loss of 20 000 sheep either dead or missing prior to 1937. The leases at the time were in the hands of a Melbourne syndicate and managed by one of its members, Noel Beavan. Beavan complained of the impossibility of estimating the numbers of wild cattle roaming the leases, which were to remain a serious problem in the future. The same could be said of the sheep numbers, which were mostly rounded off to an even figure. The leases were very run-down and the syndicate also owed £20 000 to the previous owner and pioneer Robert Bush, and £27639.6s.0d to Dalgety and Company which confiscated the 1939 wool clip to reduce the amount. The leases were sold to the McTaggart Brothers in 1945 and to them passed the job of rebuilding a run-down station at the end of a ten-year drought. The following year sheep numbers were recorded at 16 497 (SROWA 1937, ACC 541, AN3/6, Item 653/1)

On Lewis' Dairy Creek (Figure 9.7), straddling five important tributaries of the Gascoyne and managed by McIntyre Mortimer, there were 26 000 sheep and 30 cattle in 1935. By 1936 these numbers had been reduced to 4808 sheep and 10 cattle. As was

also the case elsewhere, losses in 1942 were attributed to fly-strike, and in 1945 from the February flooding. The smallest number of sheep carried during this period was 3917 in 1941. Numbers began to climb from 1944 when seasonal conditions were more favourable. In 1947, after satisfactory rains, rent relief was not made available (SROWA 1936, ACC 541, AN3/6, Item 2363). The neighbouring Dalgety Downs, owned by Bruce and Goyder and managed by M. Liggins, lost 22 000 sheep in 1935, with only 6600 surviving in 1936. The company was £54 000 in debt by 1940. Though good rains were experienced in 1942, the drought returned to continue unabated from 1943 to 1946. By that date sheep numbers had climbed back to 14 000 head, but the feed had dried out and blown away, and the overused wells were in poor shape. Shearing, as elsewhere, was carried out in the paddocks (SROWA 1936, ACC 541, AN3/6, Item 2345). A similar drop in sheep numbers occurred on the neighbouring Mount James, owned by McColl and Rutter, with a reduction from 14299 in 1935 to 3300 in 1936. Cattle numbers also declined from 600 to 250 head. Rutter paid out large sums of money for expensive fodder in an attempt to save the stock. Although heavy rains in 1942 brought up green feed, it also brought the blowfly, which further increased sheep losses until a crutching plant was introduced (SROWA 1936, ACC 541, AN3/6, Item 2258).

The neighbouring Landor with over 42 000 sheep, lost 20 000 from 1935 to 1936 leaving 21 691 head on the leases. By 1939 numbers had dropped to 13 092 (SROWA 1936, ACC 541, AN3/6, Item 2208), with 2000 on agistment on the neighbouring Mount Clere cattle station (SROWA 1936, ACC 541, AN3/6, Item 2231). As in the Murchison, shearing was carried out on the run, as the sheep were too weak to muster. Expensive fodder was also purchased in an endeavour to keep some alive. After good rains in 1945, Landor was able to agist 280 cattle and 40 horses from the drought-affected Moorarie Station in the Murchison. In 1946 the company purchased 114 rams from Cranmore Park in the South West's Central Midlands District to enable the flock to be built up again (SROWA 1936, ACC 541, AN3/6, Item 2208). The Mount Clere Pastoral Company lost 2350 cattle in 1936. It could not market any animals as the stock routes, similar to those further south, were devoid of feed. The station was to receive rent relief until 1948 because of the denuded country's inability to regenerate pasture (SROWA 1936, ACC 541, AN3/6, Item 2231).

Between 1935 and 1946, the pattern of rainfall in the Gascoyne was very similar to that of the Murchison, with the headwaters mostly benefiting from the cyclonic rains of 1942 (Figure 9.8). Landor experienced the driest conditions in 1936, 1940 and

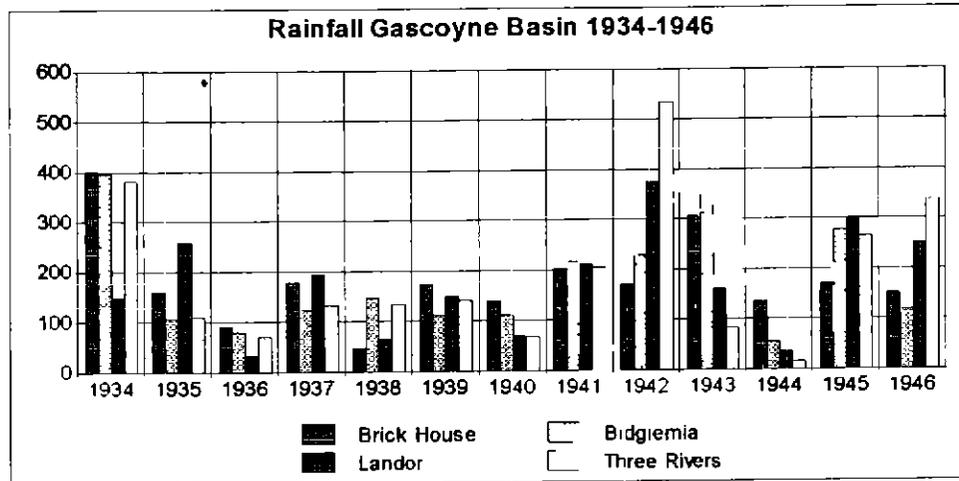


Figure 9.8: The pattern of rainfall in the Gascoyne basin with Three Rivers' high 1942 rainfall. Source: McCall 1999.

1944, similar to Three Rivers on the Gascoyne's headwaters and Mount Padbury further south in the Murchison (McCall 1999). Heavy rainfall on Three Rivers in 1942 and the resultant flooding in the Gascoyne basin caused extensive damage and sheep losses. Gooch of Wandagee immediately north of the basin also reported that most of his buildings, wells and mills were destroyed by cyclonic winds in 1942 (SROWA 1936, ACC 541, AN3/6, Item 2376). Beavan of Bidgiemia complained that a March 1943 cyclone, and its accompanying 300mm of rain was responsible for major damage and stock losses on the station, with windmills blown down and many kilometres of fencing destroyed (SROWA 1937, ACC 541, AN3/6, Item 653). The neighbouring Dairy Creek received 127mm (SROWA 1936, ACC 541, AN3/6, Item 2363). Then in 1945 a cyclone damaged Bidgiemia's homestead, shearing shed and outbuildings, brought down windmills, and washed away many kilometres of fencing when 115mm fell in February. The neighbouring Dairy Creek, with five large tributaries of the Gascoyne crossing its lease, lost 6683 sheep through the resultant floods (SROWA 1936, ACC 541, AN3/6, Item 2363). Three Rivers received little from this cyclone (SROWA 1937, ACC 541, AN3/6, Item 653).

In both the Gascoyne and Murchison basins, later-developed marginal leases located near the headwaters of the rivers were the worst affected by the drought.

James Henry Ferdinand Wehl and William Page held the Bryah lease at the time of the drought. They carried only sheep on their 35 500-hectare lease, which was 144 kilometres north of the Meekatharra railhead. The stock routes that ran through the lease, as recorded by Stalley of Peak Hill Station, were unusable during the drought. Sheep numbers dropped from 6550 in 1935 to 2036 in 1939. Page managed the lease and ran it on his own with the help of his wife, there being no other staff available at the time (SROWA 1936, ACC 541, AN3/6, Item 2460). Enie Bain on the developing Woodlands lease had recently introduced sheep to his property when the drought occurred. Numbers dropped from 4000 in 1935 to 2000 in 1936. Cattle numbers dropped from 1600 to 700 during the same period. As with Billy Martin further to the south on Mount Padbury in the Murchison, Bain could see little point in hanging onto his lease in the face of the drought and his massive debts. Like the other grassmen, he was to complain that he could not re-stock his lease either, as sheep in the Gascoyne and Murchison were unprocurable and the country unfit for stocking (SROWA 1937, ACC 541, AN3/6, Item 233). It was a very hard time for these returned servicemen.

As with the Murchison, the Gascoyne basin's rangeland became dangerously denuded of important forageable plants. By 1944 on Brick House most of the *wannu*, a type of acacia, had been destroyed along with the saltbush, which greatly reduced the carrying capacity of the lease. Despite this, the Burts were unable to claim rent relief following the heavy rains in May 1942 (SROWA 1936, ACC 541, AN3/6, Item 2750). Donald McTaggart was to report in 1946 that a serious vegetation loss had occurred on Bidgiemia with only a third of the total area now capable of grazing sheep (SROWA 1937, ACC 541, AN3/6, Item 653/1). Similar to the grassmen in the eastern Murchison, Bain of Woodlands was reporting by 1940 that the mulga was dying on his station through lack of moisture, and that the wells were drying up (SROWA 1937, ACC 541, AN3/6, Item 233).

9.4c Ashburton Basin

In the Ashburton basin the operators of company-owned and managed leases adopted a variety of rangeland management techniques during the drought. The managers of company-owned leases endeavoured to increase stock numbers, whilst the small-scale owner-operators went through a very trying time in order to survive. John Jonathon Hooley, on the small 64 200-hectare Diomenor Station 43 kilometres south east of Onslow (Figure 9.9), was typical. Stock numbers on the lease dropped from 6347 in

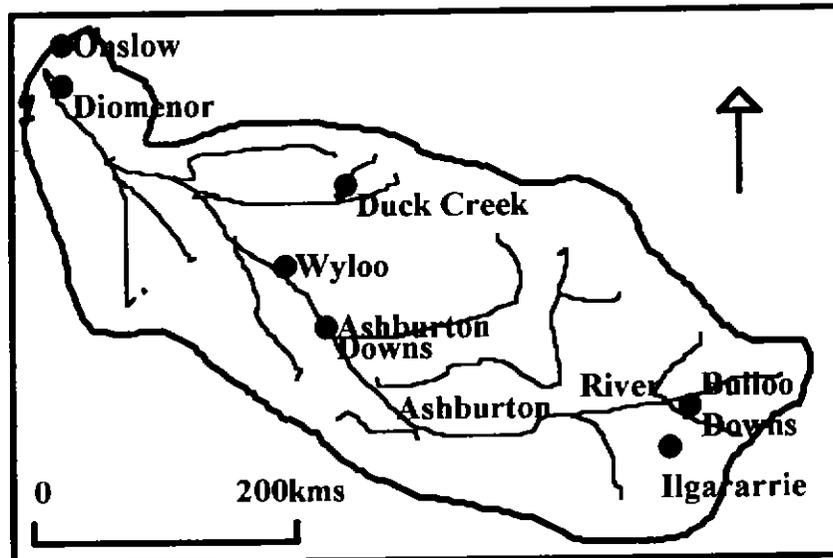


Figure 9.9: Selected drought-affected stations in the Ashburton basin.

1935 to 4956 in 1936. By 1937 the number had declined to 2565 and yielded only 45 bales of wool. The lease was under a large overdraft with a substantial interest bill. Dalgety and Company stopped their credit and went to the Supreme Court to foreclose on the tiny property. Hooley in desperation contested the takeover, which placed him under the court's protection. Nevertheless Dalgetys collected all the wool cheques, small as they were, throughout the drought years and Hooley struggled along as best he could (SROWA 1936, ACC 541, AN3/6, Item 2517). It was a sad case of a small operator on a denuded rangeland trying to survive against the odds. Hooley eventually abandoned the struggle (Webb 1983). John O'Malley Lyons on Duck Creek lost 338 cattle from his 822-head in 1935 to 1936. Recovery was slow, numbers reaching only 570 at the time of Lyons' death in 1944. According to his manager Mervyn Johns, he died of a broken heart brought on by the devastation of the rangelands and the dying cattle. The drought had been too much for him (SROWA 1936, ACC 541, AN3/6, Item 2687).

In a bid to generate dividends, the Wyloo Pastoral Company ran 45 841 sheep and 1555 head of cattle in 1935 on the station's 296 800 hectares (Figure 9.9). Numbers dropped to 31 967 sheep and 1055 cattle in the following year. By 1937 there were only 10 210 sheep and 500 cattle. There was no record of any sheep or cattle being agisted. Eric Richmond Goodall, who submitted the rent relief application on behalf of the company, commented in 1938 that the 751 bales from the 1935 wool clip were a normal yield, compared to the 188 bales for 1938, which meant a massive drop in income. Sheep

numbers continued to fall to 5844 in 1942, when stock losses occurred through flooding and fly-strike. Wyloo continued to receive rent relief up to 1944, which was the last year in which an application was submitted. By then, sheep numbers were 5743 and cattle 900, which represented a very small total for such a large lease. Goodall stated that the numbers were the lowest ever recorded on the station. Throughout the drought period, however, the company was purchasing rams, ewes and selling wethers and cattle in an endeavour to generate an income and increase stock numbers (SROWA 1936, ACC 541, AN3/6, Item 2500). Ashburton Downs, held by Ashburton Downs Proprietary Limited with Alfred John Sims as secretary, was managed in a similar fashion to other company-owned leases. There were 37 000 sheep on this well-established lease when the drought commenced. By 1937 numbers had dropped to 12 570. By 1940 the number had recovered somewhat to 22 949. During the previous five years sheep had been sold, whilst rams and fodder were purchased. There were no cattle on the lease (SROWA 1936, ACC 541, AN3/6, Item 2171). Unlike the more sensible grassmen during the drought, it appears that the managers of company-owned stations continued to mate ewes whilst the country was devoid of feed. None of the managers reported on the state of the rangelands

In the Ashburton basin, the coastal portion was the worst affected by drought conditions in 1935, with 1944 the worst period throughout the decade (Figure 9.10). Other dry years recorded were 1936 and 1940, with the coastal region of the basin

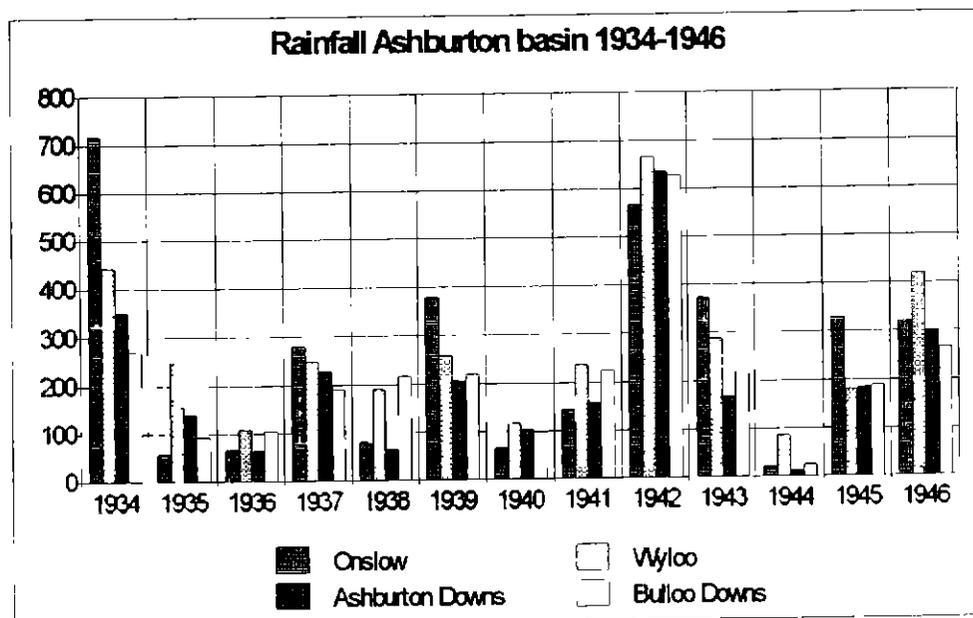


Figure 9.10 : The pattern of rainfall in the Ashburton basin 1934 to 1946. Source. McCall 1999.

having limited rain in 1938. In 1942 cyclonic rains fell over the basin from the river's mouth to the headwaters, with Wyloo losing 3346 sheep, initially through the floods and later from fly-strike (SROWA 1936, ACC 541, AN3/6, Item 2500). Dry conditions however, returned in 1943 and were as severe as in the other basins in 1944, with Bulloo Downs on the headwaters recording only 25mm, Onslow 21.7mm, and Ashburton Downs 14mm. By 1945 however, the PB considered the drought over in the Ashburton, as rainfall had increased (McCall 1999).

9.4d Fortescue Basin

Similar to the Ashburton basin, managers of the company-owned leases in the Fortescue basin continued to purchase stock to keep the numbers up, despite the drought. Near the Fortescue River mouth, absentee owner B.H. Sharpe, who also owned Wooleen Station in the Murchison, held the Mardie lease (Figure 9.11) which was managed by F.G. Mosely. For Mardie, 1936 was the driest year ever recorded. Sheep numbers fell accordingly from 47 009 in 1935 to 18 898 in 1937. By 1939 they had recovered to 25 443. Sharpe continued in his attempts to have his sheep droved to

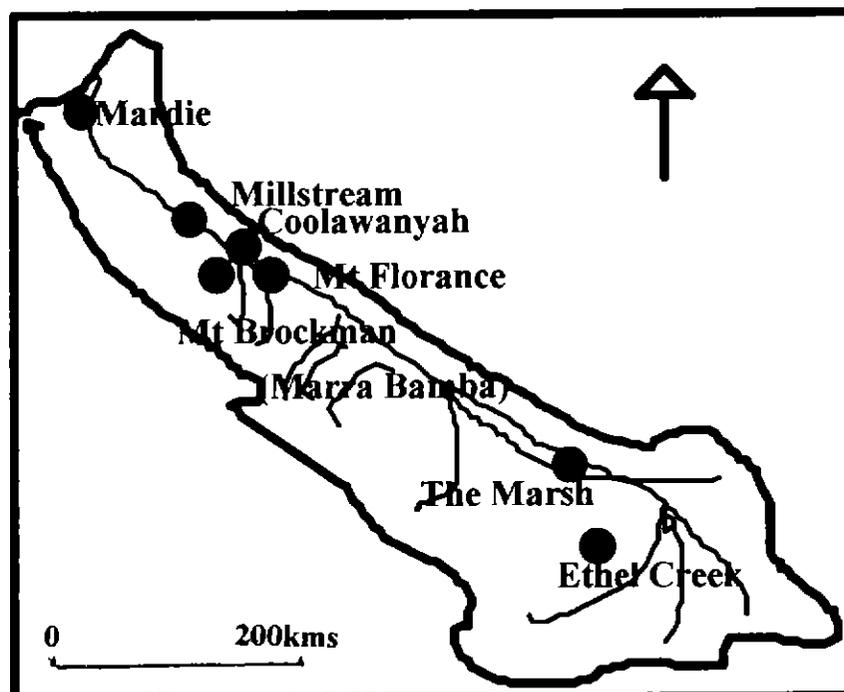


Figure 9.11: Selected drought-affected stations in the Fortescue basin

agistment, even after losing 1200 ewes out of 4000 on the barren 192-kilometre stock route to Onslow. Despite this and like other absentee owners, Sharpe continued to purchase rams and ewes, and sell wethers. Sheep were in full wool during the heavy falls of rain in May 1942 and 4135 died through fly-strike. In 1945 Mardie lost 18 000 when a cyclone crossed the coast in March. Sharpe considered that it would take at least five years to rebuild the flock on his station. He commented that the ECC for his lease prior to the drought was 50 000 sheep, but in 1946 he had only 17 511. His final complaint in 1947, when rent relief was abolished, was that he could not procure the material necessary to replace the buildings, fencing and windmills lost in the 1945 cyclone (SROWA 1937, ACC 541, AN 3/6, Item 98). He made no comment on the state of the rangelands.

Further east along the Fortescue River, the company-owned and managed Millstream (Figure 9.11) fought a battle with the drought, losing nearly 20 000 sheep between 1935 and 1937 out of an original flock of 28 006. The station received beneficial rain on its northern half after a cyclone passed through in January 1939, but nothing fell on the rest of the lease, which was considered to be in a seriously depleted condition. In that year the company lost 500 sheep from the cyclone, and 1738 from the drought. As was typical on company-held leases, ewes were mated yearly and rams were purchased in alternate years. Both summer and winter lambs, however, died from the lack of green feed. By 1944 the lease held only 6508 sheep. A cyclone in 1946 further reduced sheep numbers to 3826 and there was difficulty in purchasing breeding ewes. The nearest outlet for the movement of stock was Point Samson, 160 kilometres away (SROWA 1936, Cons 1699, AN 3/16, Volume 2643/36).

In their attempts to preserve their flocks and herds against the ravages of drought, the grassmen were more cautious and more hard-working than the managers of company-owned leases. Parsons, a comparative new-chum, had owned the developing Coolawanyah Station in the Fortescue basin (Figure 9.11) for 14 years when the drought occurred. After the dry conditions of 1935, during which his flock numbers declined from 9280 to 7603, Parsons established watering points on 30 000 hectares of undeveloped spinifex, brush and mulga country in his lease. He also purchased fodder, including sheep nuts. By 1938 his horses and rams were being hand-fed and in 1939 he used a sickle and

mower to harvest and preserve the natural grasses after heavy rain in January brought up green feed. He was able to make enough hay by this means to avoid the purchase of fodder for that year. During 1940 he could afford to purchase 16 tonnes of coastal lick, because he once again was able to fill his hay shed. Despite the smallness of scale of his enterprise, this owner-operator weathered the drought better than most of the other pastoral proprietors (SROWA 1936, ACC 542, AN3/6, Item 2594).

An owner-operator of a different complexion was the drover John Edney who held 10 000 hectares of freehold land in 1941, adjacent to Mount Brockman near the Hamersley Range (Figure 9.11) Edney acquired a further 8000 hectares as leasehold and the holding was given the name of Marra Mamba. Other unsurveyed blocks were added. The PB inspected the leases in June 1941 and classed them as very poor land. When stock route conditions rendered droving impossible, Edney took on saddlery work. By 1949 he was in trouble for having an understocked and unimproved lease, though some watering points had been constructed. He had 250 head of cattle at the time and was in conflict with his neighbours over his alleged duffing of the cleanskins that roamed the area outside his leases. His property was eventually incorporated into Mount Brockman Station when Edney could no longer carry on (SROWA 1957, ACC 1384, AN3/Pas, Item 417).

North of Mount Brockman, Richard Bullock Andrews was having problems saving his small flock of sheep on Mount Florance Station (Figure 9.11). In 1935 the lease carried 12 351 head, which was reduced to 10 818 by 1936. The numbers remained around the 10 000 mark until 1941, when the flock was reduced even further as no grass had germinated after light rainfall during 1940. By the following year the numbers had declined to 6595 due to the drought, fly-strike and dingoes. His flock continued to fluctuate between 6000-plus and 9000-plus until rent relief was finally discontinued for this struggling grassman in 1947 (SROWA 1937, ACC 541, AN3/6, Item 174)

In the eastern Ashburton and Fortescue basins (Figures 9.10 and 9.11) the leases of the deceased Charles Smith and his wife Teresa were held on behalf of their sons by the executors of their will. At the onset of the drought these leases - Ilgarrie, Bulloo Downs, Ethel Creek and The Marsh - were in the hands of managers, with the two sons also working on the stations. The Ilgarrie leases were underdeveloped and by 1940 were practically abandoned. Aboriginal stockmen had been the only people to reside on the lease for over 10 years. Most of the stock were depastured on the nearby Bulloo Downs,

with which Ilgararie was eventually amalgamated (SROWA 1936, ACC 541, AN3/6, Item 2538) Ethel Creek, with its 10 000 head of cattle, was amalgamated with The Marsh. Before long stock numbers had declined to 4500 head of cattle. During the drought, the Smith stations were able to turn-off only 500 head, as there was no feed on the stock routes. In addition these leases were performing poorly under lack of improvements and indifferent management (SROWA 1909, Cons 1384, AN3/Pas, Item 7785/09).

In the Fortescue basin 1935 and 1936 were extremely dry years (Figure 9.12), desiccating and scouring vegetation, with high winds causing severe erosional problems in the basin. Sharpe on Mardie near the river mouth stated that 1936 was the driest year ever recorded for his station, with only 8mm received (SROWA 1937, ACC 541, AN3/6, Item 98). The hardworking and optimistic grassman Roy Parsons on Coolawanyah further upstream, reported that the country on his station was 'in good

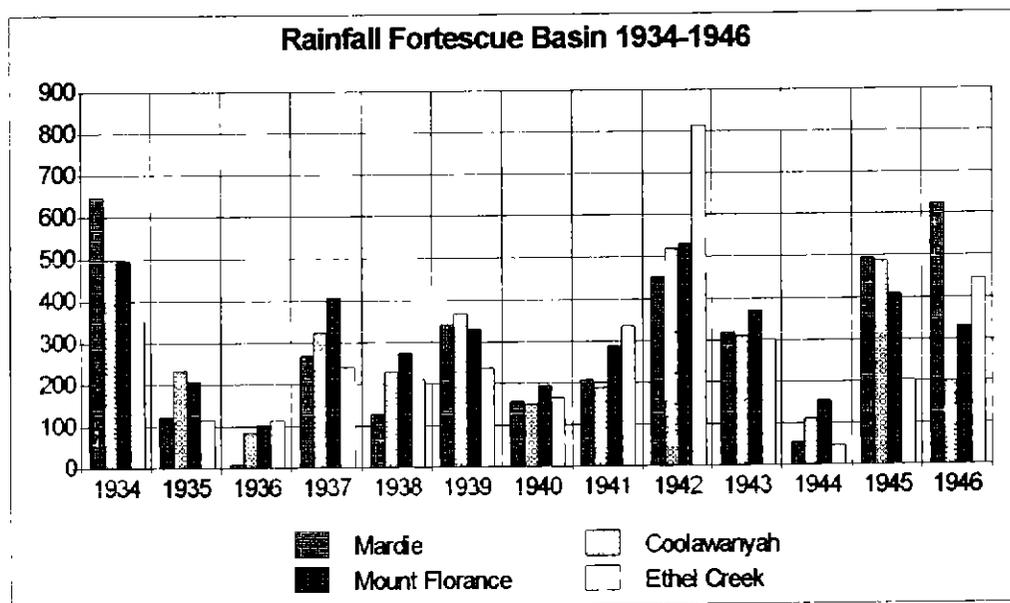


Figure 9.12: Rainfall figures depict the similar pattern to the other leases selected in the North West basins. Source: McCall 1999.

heart' for the following year (SROWA 1936, ACC 541, AN3/6, Item 2594). In 1936 his lease had received only 85mm over three days for the year, and 323mm in 1937, with 119mm of that falling in January (McCall 1999). Parsons also reported on the cyclone on the 12th of January 1939 which drowned 5828 of his sheep and that beneficial rains were

received later in the year (Figure 9.12). This grassman seemed content to manage on what he received (SROWA 1936, ACC 541, AN3/6, Item 2594). By contrast Sharpe of Mardie reported that thundery showers fell spasmodically on some parts of his lease during 1941, but the absence of follow-up rains failed to regenerate pasture (SROWA 1937, ACC 541, AN3/6, Item 98) As with the basins further south, the headwaters of the Fortescue received copious rain, from cyclonic activity in 1942. Ethel Creek recorded 309mm in January and 99mm in March (McCall 1999). Three years later a severe cyclone affected coastal centres, damaging buildings, fences and windmills, and rendered wells inoperable on Mardie. A combination of the 1944 drought and the March 1945 floods had cost Sharpe 18 000 sheep (SROWA 1937, ACC 541, AN3/6, Item 98). By that year the PB also considered the drought over in the Fortescue, but the eroded, degraded rangeland would be slow to recover (SROWA 1937, ACC 541, AN3/6, Item 174).

9 4e DeGrey Basin

Most notable for not applying for rent relief was the Rubin family in the DeGrey basin (Figure 9.13). Despite stock losses, DeGrey, Mulyie and Etrick weathered the drought easily through careful stock management and rotation of paddock use. Losses of sheep occurred but on a small scale compared to those of their neighbours (O'Grady

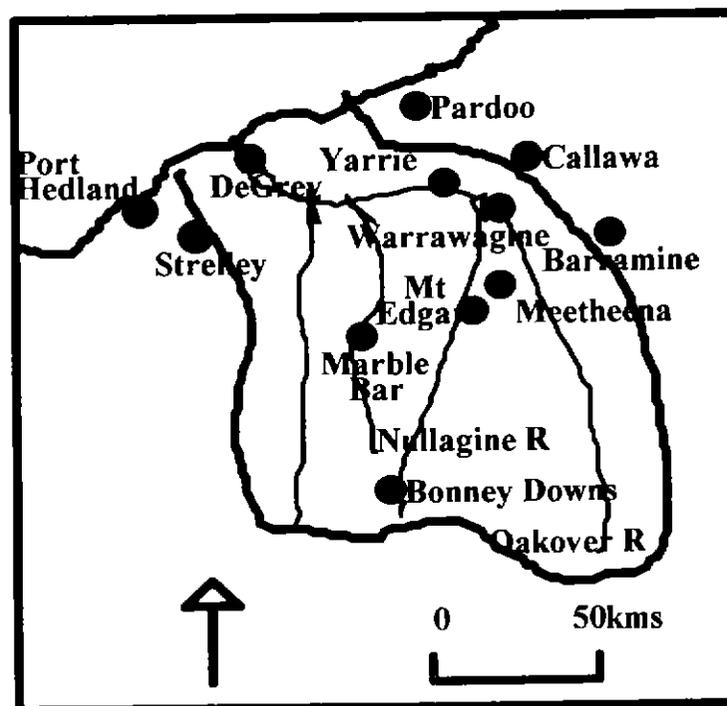


Figure 9.13: Selected drought-affected stations in the DeGrey basin

1995). On the three leases, which operated as one unit, sheep numbers totalled 113 635. Numbers dropped to 103 839 in 1936, declined yet again to 92 577 in 1937 and remained in the 90 000s until 1942 when 77 410 were recorded. Numbers fluctuated between 60 000 and 70 000 to 1949. Losses at that time were attributed to the drought (SROWA 1913-1953, Comap No. 44, Box 8). DeGrey at the time was able to agist stock from its drought-affected neighbours such as Strelley (SROWA 1936, ACC 541, AN3/6, Item 2513). Warrawagine suffered no major stock losses. Employees were busily developing sheep paddocks and watering points. The station carried over 50 000 sheep in 1935 which peaked at 74 898 in 1937 and remained at the 60 000 to 70 000 level until a dingo problem occurred, reducing the number to 54 109. Numbers of sheep remained around the 50 000 level through the rest of the drought (O'Grady 1995).

Executors of the late H.O. Coppin's tiny Yarrie Station on the northwestern border of Warrawagine (Figure 9.13) had no need for rent assistance to begin with, though stock numbers declined a little from the 1935 total of 11 243. They dropped to 7543 in 1938 and crept up to the 8000 mark the following year. Numbers remained fairly stable until fly-strike reduced the flock to 7363 in 1943. The 1944-1946 dry spell on Yarrie was the longest and most devastating ever recorded on the station, with sheep numbers falling to 4714. The lease carried around 50 head of cattle at the time. By 1946 however, the drought was broken (SROWA 1936, ACC 541, AN3/6, Item 2364).

On Hanson and Davenport's Mount Edgar on Warrawagine's western boundary (Figure 9.14) sheep numbers dropped from 17 016 in 1935 to 15 531 in 1936. In 1937 Hansen and Davenport sold the lease to F.N. Worner and L.W. Taylor, who did not apply for rent relief between that year and 1944. The partners purchased 11 000 sheep in 1944 but lost over 3000 of them to dingoes over the ensuing two years (SROWA 1936, ACC 541, AN3/6, Item 2669).

Further south of Mount Edgar, Stewart and his partners on the 216 000 hectare Bonney Downs Station (Figure 9.13), recorded 24 266 sheep in 1935. Only one-half would survive the ensuing 12 months, for Bonney Downs suffered the effects of drought similar to the more southern river basins. The nearest railhead was Marble Bar, 144 kilometres across an arid landscape. Due to a discrepancy in the numbers submitted by Stewart and his accountants Wilson and O'Keefe in Perth, the PB did not grant rent

relief, despite the huge drop in numbers. No further applications were submitted until 1945 when sheep numbers had been reduced to 9133. The lease was managed by Arthur Roberto Bosworth until R.D. Allen took over in 1947. Allen also had difficulty with stock numbers disagreeing with Wilson and O'Keefe's figures, which were taken from the records held at their office. As the lessees had passed away except for one widow, Allen was unable to supply any figures prior to 1947, when there were only 5332 sheep shorn, and was unable to receive rent relief. Bonney Downs also had a dingo problem at that time (SROWA 1936, ACC 541, AN3/6, Item 2245). The city-based Executors for Stewart and his partners had no perception of the reality of the problems experienced on the remote station for which they were responsible.

Stations on the periphery of the basin experienced variable conditions throughout the drought. DeGrey's neighbour Pardoo (Figure 9.13), 176 kilometres north had very few losses. In 1936 Thompson, who had pioneer connections with Warrawagine, having managed it for the Darlot Brothers, had sheep and cattle agisted on DeGrey. He also supplied the remaining sheep with a seed and salt conserve at considerable expense. Despite being able to maintain flock numbers at about 20 000 he reported in 1944 that the pindan country was in a very bad way notwithstanding the cyclonic rains in 1942. His 80 head of cattle were agisted in 1944, presumably on DeGrey again. Further cyclonic activity greened the pindan in 1945 and again in 1947. Throughout the drought period and with stable stock numbers, Thompson was regularly granted rent relief until 1947 (SROWA 1936, ACC 541, AN3/6, Item 2513). On DeGrey's southern neighbour Strelley (Figure 9.13), just outside the basin and held by Corney and Hardey of Tranby Park at Serpentine in the South West, sheep losses were more substantial. Between 1935 and 1937 Strelley flocks decreased from 13 084 to 7531, then remained at around 8000 from 1938 to 1940. Losses were quite heavy in 1941, when cyclonic flooding reduced numbers to 4330. When Miller, Miller and Grimoldley took over the station in 1944 there were 7275 sheep. A year later there were only 4716, with the rest no doubt agisted on the neighbouring DeGrey where Les Miller was General Manager of the Rubin leases (SROWA 1936, ACC 541, AN3/6, Item 2673). On nearby Lalla Rhook at the height of the drought, the employees of station owner Ted Jeffries were forced to kill the young lambs to aid survival of the ewes (Cousens 1991).

In the DeGrey basin 1935, 1936, 1944 and 1945 were the driest years and 1942 very wet (Figure 9.14). In general, however, with the exception of the neighbouring Strelley (SROWA 1936, ACC 541, AN3/6, Item 2673), DeGrey basin stations between 1935 and 1947 seemed to escape the flood and wind damage associated with cyclonic activity. The same cannot be said for coastal Pardoo, some distance to the north. In 1941 cyclonic rain, dumped 1070.42mm on the station and brought the Pardoo Creek down in a flood, its waters overflowing its banks to a width of eight kilometres. Such was the force of the flood that it swept 192 rams out to sea and washed away 216 kilometres of fencing. Again on the station in February and March in 1945, tropical storms wrecked 28 windmills, flooded three wells and further damaged fencing (SROWA 1936, ACC 541, AN3/6, Item 2513). The March 1945 rainfall in the DeGrey basin was inconsistent, with

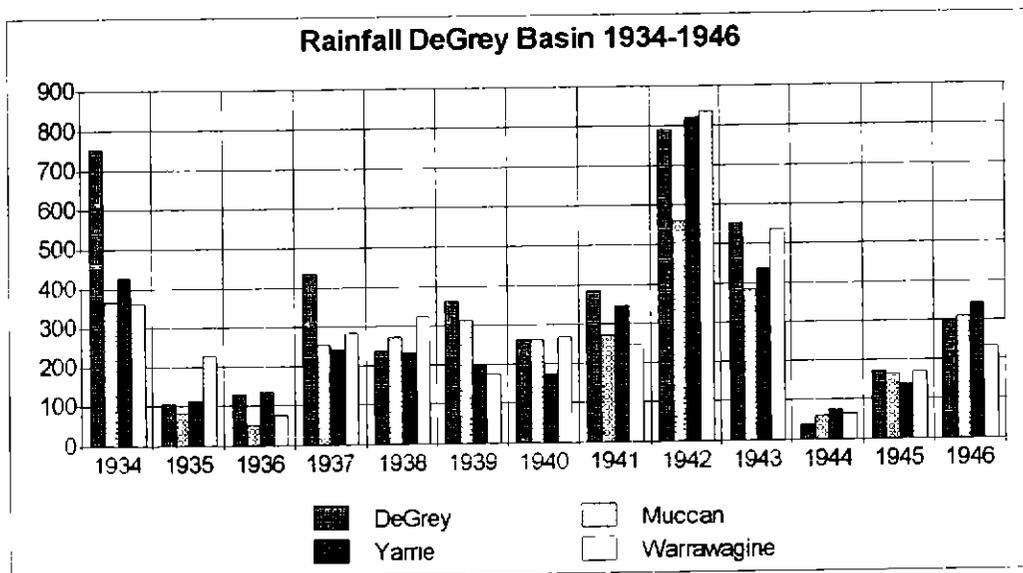


Figure 9.14: The chart shows the same pattern of rainfall for the DeGrey as in the other basins. Source: McCall 1999

Muccan recording nil, Yarrie 27mm, DeGrey Station 74mm, and Warrawagine 43mm (McCall 1999). Flooding occurred again on Pardoo in February 1946, and a cyclone in February 1947 washed four mares and their foals into the sea, damaged four windmills and two kilometres of fencing, and destroyed the blacksmith's shop (SROWA 1936, ACC 541, AN3/6, Item 2513) The Big Drought was over, however, and the DeGrey basin benefited from the rain (McCall 1999)

9.4f Fitzroy Basin

In the Fitzroy basin (Figure 9.15) stock numbers appeared relatively stable despite the variability of the rainfall, thus, because of the freight subsidy already being received in the West Kimberley, the Fitzroy basin leaseholders were unable to procure rent relief. The managers had problems mostly related to marketing. Yeeda Station held 8530 cattle in 1935 and 6551 in 1936, without any explanation being given for the drop in numbers. In 1936 410 bullocks from Yeeda Station were consigned south and sold for £2 930.12s.6d. Freight, fodder and other charges totalled £1 532.4s.3d. Because Yeeda ran cattle only, the balance of £1 398.8s.3d had to last the station until the next consignment a year later (SROWA 1937, ACC 541, AN3/6, Item 190). Further inland along the river, on Quanbun, which ran about 11 000 sheep, A.J. Rose was to complain that the 1936 season was the worst on the lease since 1908. He reported that he had lost around 2000 sheep (SROWA 1937, ACC 541, AN3/6, Item 84). The loss was minuscule compared to those in the other basins. Lyndsay Gordon Blythe submitted the rent relief application forms for Mount House, Glenroy, Bohemia Downs, Fairfield and Leopold Downs Stations. The situation on Leopold Downs was typical of the group, with cattle numbers declining from 11 000 in 1934 to 8521 in 1936 (SROWA 1936, ACC 541, AN3/6, Item 2522).

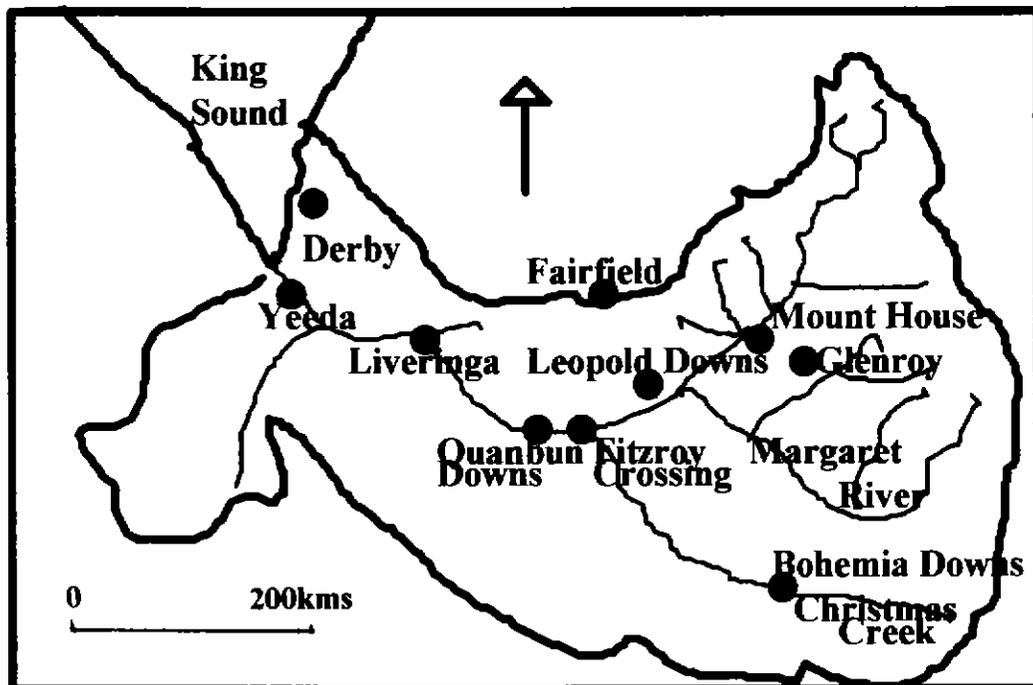


Figure 9.15: Selected stations in the Fitzroy basin

Stations in the Fitzroy basin did not suffer prolonged drought, although 1936 throughout the basin was the driest of the decade (Figure 9.16). Managers who submitted rent relief applications in 1936 were unsuccessful. (SROWA 1936, 1937, ACC 541, Items 2522, 84, 190).

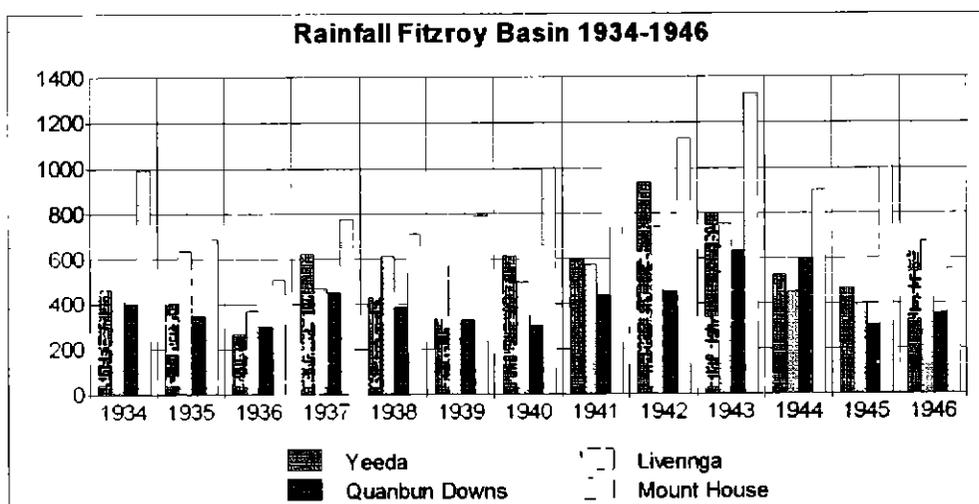


Figure 9.16: The rainfall chart depicts the relatively stable falls of the Fitzroy basin. Source. McCall 1999.

The drought broke for some leases in 1942, with two cyclones, one in January and the other in March, providing beneficial rain. For others 1945 saw the drought end, and finally in 1947 the drought was over state-wide (SROWA 1936-1938, ACC 541, AN3/6, All files). By then, however, Western Australia's pastoral industry was in such a depressed state that a Royal Commission had been instituted. To add also to the grassmen's woes at the time was the vermin problem, which in the North West basins was to decimate sheep numbers even further during the latter half of the drought.

9.5 The 1940 Royal Commission Concerning the Big Drought

The Royal Commissioner was Western Australia's Surveyor General and Chairman of Pastoral Appraisal Board (PAB), an auxiliary of PB, Wallace Vernon Fyfe (Fyfe 1940). He visited many stations, and interviewed leaseholders and officers of the DL&S. Some grassmen viewed the Commission with scepticism, with Stalley of Peak Hill Station declaring it a fiasco, which he labelled a Royal Picnic (SROWA 1936, ACC 541, AN3/6, Item 2607) Nevertheless, Fyfe was thorough. He reported that in the Murchison top feed, herbage and grasses had all practically disappeared, including 75% of the

saltbush. Fyfe also noted the dead mulga, carara, bowgada and other acacias which stretched across the dusty landscape for many kilometres. Along the watercourses some of the eucalyptus trees were dead or dying and the ground devoid of all herbage (Fyfe 1940:196-198:30-31). A similar situation was evident on the rangelands in the Gascoyne, which were considered to be in an appalling condition. Erosion was serious and water shortage a problem in the Ashburton region with at least one grassman reporting that 95% of the shrubs and scrub had died (Fyfe 1940:227:36). From Roebourne to the DeGrey the drought was less severe except in the eastern Fortescue and Ashburton basins (Fyfe 1940:235:37), with hard spinifex, an indicator of poor range condition, taking over in some places (Fyfe 1940:239:37). The Fitzroy basin was not considered drought-stricken, the Commissioner thought that its grass problems were related to overstocking (Fyfe 1940:240-241:38). The stock routes everywhere were unusable and there had been very few sales at Mullewa. From the livestock that had been lifted in 1936 in the Port Hedland, Roebourne and Onslow districts, two consignments failed to reach their destination and the others experienced losses of 30% whilst on the track.

Fyfe (1940:150:20) considered the drought to be the worst in Western Australia's pastoral history and the main cause of the economic difficulties faced by the leaseholders. With the disappearance of ground feed and the death of trees and shrubs, thick dust was a daily occurrence. He (1940:382:58) also made a telling description of VCL, which was completely unstocked and also in a seriously degraded condition. Most grassmen interviewed considered that it would take eight to 10 years for the country to recover its lost vegetation. Fyfe (1940:294-295:46) stated that the practice of the PB, in devising rent allocation according to the price of wool, failed to make provision for a drought of such long duration. The fact that wool clips during the drought were very poor in weight and condition only exacerbated the situation (SROWA 1936-1938, ACC 541, AN3/6, All Files). Furthermore, it was an outrage that cattlemen were also paying rent for their leases on the basis of the price of wool (Fyfe 1940:305:47). The PB, in granting rent relief, lost revenue worth £220 398 from 1936 to June 1940 (Fyfe 1940:290-293:46). Fyfe emphasised that rehabilitation of the drought-stricken areas was imperative, despite the enormity of the cost. He also noted that the recuperative powers of the country not affected by soil erosion were heartening and that it would recover with good rains if lightly stocked (Fyfe 1940:778, 838:120, 130).

Fyfe made a number of recommendations to bring relief to the grievous situation of the pastoral industry. He further advised (Fyfe 1940:779) the financing of leases by the State and Commonwealth Governments until recovery, that Legislation was required for debt adjustment, as well as an adjustment to the current ECC by PB according to the state of the development of a lease and actual number of stock (:805), and that the Commonwealth Government should provide free grants to help impoverished leaseholders to restock (:830). Fyfe also included in his recommendations a conviction that the State and Commonwealth Governments should both assist in a proposal for the rehabilitation of the drought-depleted regions (:794), and a discontinuation of accrued interest held by financial institutions (:774). As is so often the case, Fyfe's Royal Commission provided a vast amount of information and a series of sensible recommendations, but its effect on policy and practice was minimal at that time.

9.6 Some Attempts at Land Rehabilitation

In the Pilbara where erosion was spreading by 1939, Rob Lukis of the coastal Mundabullangana on the Turner River experimented with furrowing eroded land and planting buffel grass seed, which proved successful. He also set about destroying the encroaching indicative poverty bushes and buck (hard) spinifex on degraded land and revegetated with buffel grass. Don McGregor of Carlindi in the DeGrey basin purchased bags of buffel seed in the same year and spread it around the degraded homestead paddocks. Later, winds carried the seed to adjacent areas (Cousens 1991). Rubin's General Manager John L. Stewart was approached by the neighbours of the DeGrey and Warrawagine leases for grass seeds for regeneration on their leases. He informed the managers of the two stations that their employees could collect seed when not busy with other tasks. The Rubin stations survived the drought with plenty of foraging plants for their stock and those on agistment, a result of the cautious paddock rotation (O'Grady 1995). Cousens (1991:84) declared that, even in the middle of a drought, the DeGrey pastures were the finest in the country. For the first time, plans were implemented to conduct research into methods of rehabilitating degraded rangeland. In 1946 the Western Australian Government purchased the abandoned Abydos and Woodstock leases in the southern Pilbara for use as experimental stations, and Lukis' Mundabullangana was used as an experimental station for coastal vegetation. Experiments conducted included controlled burns and deferred grazing for grass regeneration (Hardie 1988).

9.7 The Vermin Problem

Dingoes, particularly during 1946, and other vermin contributed to the economic hardship suffered by the leaseholders during the latter half of the drought in every river basin. Also, almost every grassman reported stock losses through fly-strike after the 1942 rains. In that year grassman Roy Parsons introduced a 2-stand crutching plant on Coolawanyah which helped to save his flock from fly-strike (SROWA 1936, ACC 541, AN3/6, Item 2594). Crutching plants were soon to become a part of standard station equipment.

In 1946 grassman Billy Martin of Mount Padbury in the Murchison complained that vast numbers of dingoes were making inroads on his sheep (SROWA 1937, ACC 541, AN3/6, Item 407). Foxes also plagued the young lamb numbers in the Murchison. The Broad brothers on Mellenbye were to write of them killing the lambs in 1946 (SROWA 1936, ACC 541, AN3/6, Item 2275). Dingo Jim, ancestor of Television entertainer Ernie Dingo, was to make a living from the proceeds of dingo trapping on Yallalong, Billabalong and Woolgorong in the Murchison throughout the drought years (Barndon 1996b, Officer 1996b, Dingo 1997)

Following the 1945 cyclone, the experienced grassman Gooch of Wandagee in the Gascoyne, reported that a plague of locusts had destroyed much of the remaining vegetation and new green feed (SROWA 1936, ACC 541, AN3/6, Item 2376). On the Wooramel lease between the Gascoyne and Murchison basins Ernest Hall complained that foxes, eagles and blowfly were troublesome after the 1942 rains. Within six months in 1944 Hall had destroyed 100 foxes and a number of eagles and stated that the effect was not noticeable. He was still destroying foxes and eagles when the file closed in 1947 (SROWA 1937, ACC 541, AN3/6, Item 569).

The directors and accountants submitting rent relief forms for lessees in the Ashburton basin were as reticent in discussing the vermin problem, as they were in reporting land degeneration. Webb (1983) however, states that the Ashburton Vermin Board paid bounties for crows, foxes and eaglehawks throughout the drought period. In 1938 they paid £3.18s.0d for fox cubs, £30 for foxes, £8.15s.0d for eaglehawks, a massive £596 for dingoes and £150 for dingo pups.

Very early into the drought in 1936, Parsons of Coolawanyah in the Fortescue basin reported on the influx of kangaroos around the station homestead, which was the only part of the lease where rain fell in that year. Dingoes were troublesome also, and by 1940 Parsons had commenced a dingo eradication programme (SROWA 1936, ACC 541, AN3/6, Item 2594). Andrews of the neighbouring Mount Florance reported a dingo problem from 1942 to 1948, with foxes also ravaging the lambs in 1947 (SROWA 1937, ACC 541, AN3/6, Item 174). The same situation occurred on Millstream Station, where the Millstream Pastoral Company's director Roy Arthur Long stated that dingoes were killing sheep on the station in 1946 (SROWA 1936, Cons 1699, AN3/16, Volume 2643/36). John Edney on his tiny Marra Mamba lease adjacent to the Hamersley Range in the Fortescue wrote that the dingoes were very bad in 1949, coming in from the unsurveyed Crown lands that surrounded his leases. He also stated that the grasshoppers were at plague proportions and the kangaroos a problem (SROWA 1957, ACC 1384, AN3/Pas, Item 417).

In the early 1940s in the DeGrey basin, grassman and manager Billy McPhee of DeGrey Station employed a number of people to destroy feral pigs and goats (Cousens 1991). On Mount Edgar Worner and Taylor paid £300 for the destruction of 12 000 euros at ninepence per scalp, thus reducing the competition between stock and kangaroo for the foraging grasses (SROWA 1936, ACC 541, AN3/6, Item 2669). R.D. Allen, the manager of Bonney Downs Station on the headwaters of the Nullagine River, was to complain of sheep losses through the eaglehawks, dingoes and wild dogs from 1945 to 1947 (SROWA 1936, ACC 541, AN3/6, Item 2245). The dogs of Aborigines on Carlindi near the Shaw River were raiding the sheep and a drive was carried out in the Aboriginal camp adjacent to the homestead to reduce their number. Donkeys too, had become feral and were a problem in the competition for grasses and in their destruction of troughing and fencing from 1936 to 1939 (Cousens 1991). Yarrie in the DeGrey basin recorded the savaging of the lambs by dingoes in 1946 (SROWA 1936, ACC 541, AN3/6, Item 2364). Warrawagine lost 17 410 sheep, including lambs, in 1941 to dingoes. Billy Dunn, of mixed-descent, was hired to trap and poison them. Aerial baiting commenced on the station in 1949, with 70 000 baits laid over 322 square kilometres on the southern portion of the lease where the dingoes were the most troublesome. (O'Grady 1995) The aeroplane operated out of Charlie Blair's Meentheena Station on Warrawagine's southern boundary. Because the dingoes were so troublesome in the Pilbara at the time, Blair lobbied for a Government dogger, part of whose wages would be met by the local

grassmen. The versatile Dunn was contracted to do the job. He was paid £10 per week and received a bonus of £2 per scalp. Other doggers were later contracted, bringing the number to eight operating all over the Pilbara and in the DeGrey basin. The dingoes were coming in from the desert through the dilapidated rabbit-proof fence in such numbers that Dunn and his associates collected thousands of scalps a year (Wilson 1989). Even on the inhospitable Kimberley Plateau, dingoes were a menace. Bob Maxted on Morningson Station, a southern neighbour of Glenroy, was to augment his meagre income from cattle by trapping and poisoning dingoes, feral dogs and the dogs of the Aborigines. Like Dunn on the DeGrey basin, he was paid £2 a scalp and in two years earned £600 by this means (Edwards 1991).

During World war II the Rabbit Proof Fence Number One fell into disrepair through shortage of labour and materials. After the end of the war, the shortages continued and the fence was never repaired. There were huge holes where wild cattle had smashed their way through it. Elsewhere winds had blown the sand against the fence and almost obliterated it, or blown the sand away leaving it hanging in mid-air. Dingoes had little difficulty negotiating this run-down barrier, which was officially deprived of all repair work in 1948 (Broomhall 1991). Nevertheless, eradicating vermin was an ongoing process in all the river basins.

9.8 World War II and the Rangelands

With the outbreak of World War II most young men left the stations and towns of the North West to enlist in the armed forces (Cousens 1991). Included among them was the popular drover, racehorse trainer and poet Tommy Gray, of mixed descent, who lost his life in Syria (Hardie 1988). The exodus left stations with a shortage of employees, and Aboriginal labour became indispensable. Aborigines, including those of mixed descent, also took on wharf and town employment, while others remained on the stations (Wilson 1989). Of benefit to the drought-affected leaseholders, however, was the British Government's acquisition of all the wool except that needed for domestic requirements. Wool prices were stabilised at approximately 13s. 5d. per pound (£1 8s. 7d. per kilogramme) (Maisey 1979).

The impact of the war was experienced first-hand in Western Australia when Broome was bombed by the Japanese on the 3rd of March 1942 and then later Exmouth Gulf (Charlton 1988). On the 30th of July 1942, and again on the 17th of

August, Port Hedland was bombed (Hardie 1998). As a consequence, women and children from the towns and coastal stations in the Fitzroy and DeGrey basins were evacuated south. By April 1942 Port Hedland had been occupied by the Western Australian 29th Garrison Battalion, whose duties comprised mainly internal security, guard duty, coastal defence and the organisation of the cargo arriving and departing at the wharf. In the same year the RAAF established No. 78 Operational Base Unit on the edge of the town. (Hardie 1988). The North West Volunteer Defence Corps (VDC) was established in the Pilbara with Jim Lewis, who had replaced McPhee as manager of DeGrey, and Alf Unmack, grassman and owner of Hillside, as its officers. The VDC was popularly known as the Home Guard and operated under the guidance of the Port Hedland-based 29th Garrison Battalion (Wilson 1989). The VDC's main role was to guard the airfields established in various localities across the North West and in the Fitzroy basin. In the DeGrey basin the VDC numbered approximately 100 men (Hardie 1998). In Meekatharra in the Murchison basin the VDC was formed from youthful and elderly local men, who were instructed in the use of Bren guns, hand grenades, drilling, bayonet fighting and unarmed combat (Edwards 1994).

A radar base was established near the DeGrey Station homestead, and later in 1942, an air base, manned mostly by Americans, was established on Corunna Downs between Marble Bar and Nullagine (Hardie 1988). To avoid the danger of shipping large consignments of explosives and other strategic materials to Port Hedland, then by rail to Marble Bar, Meekatharra became the railhead for the delivery of material necessary for the construction of the air base. Subsequently fuel, ammunition and bombs were trucked in convoy from Meekatharra. Smaller consignments of lesser importance were shipped to Port Hedland then railed across the Abydos Plains to Marble Bar for trucking out to Corunna Downs (Edwards 1994).

In the Fitzroy basin a radar station was established at the Paradise outcamp on Liveringa, and an air force base was built on neighbouring Noonkanbah, being manned by approximately 600 Army and RAAF personnel. A branch of the VDC was also established in the Fitzroy basin and was subjected to a rigid three-to-four week training program. Included in the personnel were Aboriginal stockmen and drovers. The Army also had an extensive camp around Myall's Bore near Derby where fuel dumps were established (Watson 1988).

Mining slowed in the Murchison during the war, and in Meekatharra only about 100 men were employed on the two mines to keep them operating on a care and maintenance basis (Edwards 1994). For the grassmen, already experiencing financial hardships as a result of the drought, there was neither labour nor materials available for adequate repair and maintenance. Consequently windmills, tanks and troughing began to deteriorate, and fencing to fail. There were not even enough stockmen to maintain paddocks, muster sheep and cattle and, in some cases, organize an even spread of grazing across the lease (SROWA 1936-1938, ACC 541, AN3/6, All Files). Thus war joined with drought and flood to contribute to the general decline of the pastoral industry, which was exacerbated by the decrease in the Aboriginal workforce, as the indigenous people were preparing for changes to their existing lifestyle.

9.9 The Indigenous Population

In the report of the Royal Commission of 1940, Fyfe blamed the existing system of Aboriginal welfare for the growing shortage of Aboriginal labour on the stations. Grassmen also were concerned that the Government's practice of issuing rations to Aborigines would see them congregating at the ration depots instead of working on the stations. In the event, however, ration depots were frequented by the 700 or more indigenous people in Western Australia's pastoral area who had not been reared on pastoral leases (Fyfe 1940, 1002-1003:157-160). For the time being at least, station workers remained at their places of employment, their jobs depending upon the issuing of an annual permit.

The permit system helped to maintain a workforce by indenturing the Aborigines to particular stations. By the mid 1930s however, there was dissatisfaction among the station Aborigines over poor food, low wages or no wages at all, and inadequate accommodation. The Aborigines in the DeGrey basin would later force radical changes in these three areas, as well as promoting an autonomous lifestyle separate from the stations. Some Aborigines in the region already had a degree of independence not experienced in the other river basins. With skills learnt on the stations during the 1920s, they became contractors with their own plants, usually consisting of a vehicle, tools, equipment, and horses, and contracted for work such as fencing, well-sinking, carting, mustering for straggler sheep, water-boring and anything else that became available (Wilson 1989). Some of these men played an important role in later changes to the status and way of life of Aboriginal people in the pastoral zone.

In 1945 a special meeting was held at Skull Springs on the Davis River in the DeGrey basin, with Aborigines from the DeGrey and Fortescue basins, who conversed with white Ashburton miner Don McLeod. McLeod had previously met with some of the Aborigines in Port Hedland, such as Tommy Clark of Mulyie, Clancy McKenna, then on Carlindi, and Bruce of Warrawagine (Stuart 1959). Other influential men were Jacob Oberdoo, Snowy Judmai, both of whom were of mixed descent (McPhee and Konigsberg 1996), Dooley Bin Bin (Stuart 1959), and Ernie Mitchell (Palmer and McKenna 1978). The result of the Skulls Springs meeting saw two of the most important men, Bin Bin and McKenna, deciding that, to improve the station workers' situation, the stockmen would go on strike. With the help of McLeod, calendars were devised and provided by Ken Duncan of Hanson's Store in Marble Bar, with the strike day ringed in red. Bin Bin, McKenna (Stuart 1959), Judmai and Crow Yougarla (Warkley 1997) carried the calendars to the stockmen on all the stations in the Pilbara, and to some in the Fortescue, teaching them how to read the calendar and what to do on the strike date (Stuart 1959). As they were already receiving wages, Aborigines from Mount Edgar and DeGrey Stations did not participate in the strike (Wilson 1989).

On the 1st of May 1946, station and urban Aborigines failed to arrive for work, to the utter astonishment of the leaseholders, townsfolk and police in the Pilbara. To ascertain the cause, the police drove to the stations and, with the grassman or manager beside them, urged the men back to work, but to no avail. After the strike, some Aborigines gathered with McKenna at a site known as Twelve-Mile Camp, 19 kilometres out of Port Hedland. Others congregated with Bin Bin at the Moolyella mineral fields near Marble Bar to yandy for tin, at which the women with their yandy baskets were quite adept. Bin Bin's group, along with McLeod, also went wolfram mining in Cooke's Creek near Nullagine. By this time the emphasis had changed from the stockmen's simple demands at the commencement of the strike, to a desire for freedom and for stations of their own. Later the mobs split again, with small groups based at Condon thence southward to the beaches of Mundabullangana, to collect pearl shell. Mitchell stayed behind at the Twelve-Mile, where a school was organised for the children and run by a mission-taught Aborigine. Other Aborigines went out to collect goat skins and kangaroo hides. All the proceeds were communal and used to purchase the necessary food supplies, bullets and fuel which were distributed among the different camps. At Christmas that year, the Warrawagine mob walked off the lease and joined the strikers (Palmer and McKenna 1978).

The strike had perplexed the leaseholders, the grassmen in particular, when even stockmen who were in receipt of wages left their employ and joined the group camped outside Port Hedland. The strike extended over three years as the Aborigines, with the help of McLeod, continued their bargaining to be recognized as the Nomads, a people with rights of their own. By 1948 when the grassmen and station companies were offering better wages and improving amenities on their leases, they were still losing Aboriginal labour as men and women joined the strikers, who had achieved economic autonomy through their own work efforts and communal organisation (Wilson 1989).

The Nomads were from two main streams of people, the desert or Nyangomada people, and the local coastal Nyamal people of the DeGrey basin (Wilson 1989). The association of the two groups of people was to have important ramifications for the pastoral and mining industries over the ensuing decades. In 1950 the situation was formalised, and a cooperative was established (Stuart 1959, Palmer and McKenna 1978).

Billy Dunn the dogger remained aloof from such activities though he sympathised with them. He had previously worked as contract drover for the grassmen, building up his own plant in the process, and thus was considered independent from other struggling indigenes. Early in World War II he applied for land at Mount Divide, and registered a brand to start his own station. Unfortunately he was thwarted in his attempts by neighbours, who believed they would lose their added source of income from duffing the cleanskins on the VCL for which Dunn had applied. Furthermore, those same neighbours informed the PB that they were uneasy about Aborigines owning pastoral leases. To further his chances of land ownership, Dunn took out citizenship rights in September 1948. He had not joined the Nomads because, despite his experience with Mount Divide, he maintained that he had nothing against the grassmen, as they had always treated him well. In 1948 he was contracted by the Bureau of Mineral Resources to escort Dr Frank Reeves of the Vacuum Oil Company into the Great Sandy Desert in a search for oil-bearing country (Wilson 1989). Dunn was to accomplish other important work in later years

In the Murchison basin further south, Avey Curley was another hard-working Aborigine who held rallies and lobbied government officials and agencies against the curfews imposed upon her people of Meekatharra during the 1940s. In later

years, Curley was to devote her efforts towards the betterment of working, living and educational conditions for the town's Aboriginal population (Curley 1997).

9 10 Conclusion

Despite the severity of the Big Drought, neither the Minister of Lands, the PB, or the pastoral companies, with their sights set upon intensification and increased profits, appreciated its significance for the pastoral industry's future. The devastation of dried-up waterholes and wells, the limited recuperative powers of the over-exploited forage plants, the losses caused by occasional tropical cyclones, and any real understanding of a sustainable ECC were all foreign to their way of thinking. At the time, only the grassmen took the initiative in voluntary cutting-back on stock numbers and refusing to purchase animals in order to comply with the PB's stocking requirements. In a bid to save what stock they could, they also took to cutting-down mulga and other edible shrubs, to the ongoing detriment of the rangelands. Even more damaging were the attempts on company stations to restock during the height of the drought, with related heavy losses from both starvation and thirst. Relative newcomers on the leases in the marginal country on the periphery of the Murchison, Gascoyne, Ashburton, Fortescue and Degrey basins, were subjected to unnecessary debt and hardship because of the PB's unrealistic and unyielding stance on stocking rates. In many cases, such men walked off their leases, while others struggled to survive. Wool output declined substantially in both quantity and quality, with some relief coming in the form of a guaranteed market and price during World War II. The Royal Commission came and went, with little impact other than a few attempts at land rehabilitation; whilst vermin posed a growing threat; and the winds of change for Aboriginal people, exacerbated the problems of labour shortage which had dogged the pastoral industry since the beginning of the war. While the Korean conflict and the associated escalating wool prices in the early 1950s saved the day for the pastoral industry, at least in the short term, stock numbers were never to return to pre-Big Drought levels.

Chapter Ten

Infrastructure, Services and Mineral Booms to the 1990s

10.1 Introduction

After World War II, a major preoccupation of both government and private interests was the peopling of the isolated and severely drought-affected North West. At the time the area had a population of 7500, and was considered to be dangerously underpopulated compared to the neighbouring Southeast Asia. Its development was therefore considered to be of paramount importance, both strategically and socially. As a result of recent war and its Japanese involvement, the old adage, 'populate or perish' was still considered relevant (Maisey 1979).

Although the main objective of those involved was to achieve growth by revitalising the flagging pastoral industry, their perception of how to do it ignored the recommendations of Fyfe's 1940 report. Instead, attention was focused on the appalling road conditions, the lack of services, and the inadequate port facilities. The newly-formed Department of the North West Consultative Council and its associated committee under K.M. Hasleby, with members of the PGA and local government representatives, prepared a viability report. Its stated aims were to develop and improve transport facilities, the pastoral industry, education, mining and tourism. First of importance on the agenda was road construction, which was well under way even before the mineral boom eventuated. Other services received attention as the need arose, but the issue of rejuvenating the depleted pastoral resources following the Big Drought was largely ignored (SROWA 1963, ACC 4538A, MN 689, Item 253).

In 1945, G.C. Gooch, as a member of the North West Consultative Council, prepared a submission to the Commonwealth Government for aid to help formulate proposals for the development of the region. Canberra responded in 1948 by forming its own committee to examine the needs of all Australia north of the 26th parallel, and in 1949 provided over £1 million for construction and improvement of roads, bridges and stock routes in the North West. Funding was also to come from government grants and from local government sources (Main Roads 1947-1954). In 1949 the State Grants (Encouragement Meat Production) Act provided further funding for road development (Glendinning 1956).

10.2 Roads and Stock Routes, Railways and Mailruns

Throughout the 1950s the 2575-kilometre North West Coastal Highway from Midland Junction to Derby was converted from a sandy track to a gravel road. The Great Northern Highway was gravelled from Midland Junction to Meekatharra, and a new road constructed from Meekatharra to Peak Hill enabling access to the Midland Junction livestock markets. Altogether the projects cost £144 228.2s.9d from State funds and £94 369 12s 5d from Federal aid (Main Roads 1970). Further west the Gascoyne-Mullewa Road was reconstructed for £13 066 1s.3d. Other works included a new road from the Great Northern Highway to the mining town of Wittenoom in the Fortescue basin (Figure 10.1) (Main Roads 1947-1954). Roadworks, however, were received by the grassmen with mixed feelings. Ernest Hall at Wooramel Station complained to the DL&S that Main Roads personnel were going through his lease, leaving the gates open, sometimes destroying his fencing with their road works, and mixing up the sheep (SROWA 1937, ACC 541, AN3/6, Item 569).

In 1956, to enable roadworks to continue, the Commonwealth Government granted over £2 million in a five-year development plan (Maisey 1979). With road development a certainty and encouraging an increase of travellers, enterprising individuals constructed roadside service stations. In the same year land at the junction of the Shark Bay Road and North West Coastal Highway was excised from the Hamelin Pool lease adjacent to a water and camping reserve for travellers, and S. St John of Geraldton constructed and opened a service station on this strategic location (Figure 10.1) (SROWA 1955-1967, ACC 1778, AN3/24, Item 593.55).

A new section of the Great Northern Highway from Port Hedland to Marble Bar replaced the old road that had followed the DeGrey River from DeGrey Station to Warrawagine, with an access road from the highway graded to Warrawagine. No longer required, the uneconomic Marble Bar-Port Hedland railway was closed in 1951 (Figure 10.1) (Main Roads 1947-1954).

In the Fitzroy basin a new Great Northern Highway route was constructed from Derby to Fitzroy Crossing, taking it well away from the troublesome original route that followed the Fitzroy River (Figure 10.1) (Main Roads 1947-1954). The new road was a sandy pindan track along the telegraph line (Watson 1988). The construction of the Derby-Gibb River Road in 1961 (Figure 10.2) to facilitate the ease of moving cattle from

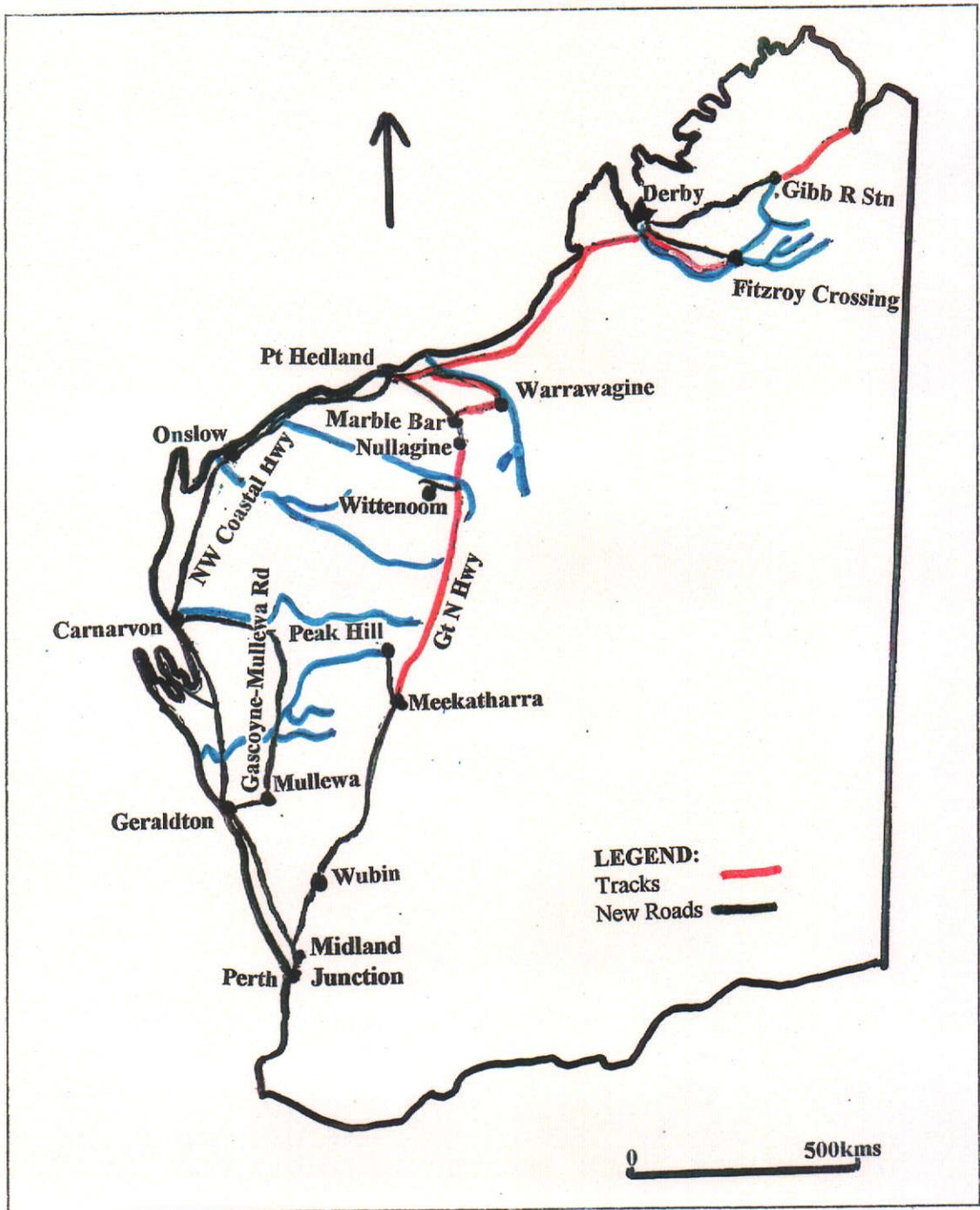


Figure 10.1: Road development in the North West and Fitzroy basin 1950-1960

the leases on the Kimberley Plateau (Edmunds 1996). It also opened up several million hectares of undeveloped country in the Central and North Kimberley. By 1968, Willare Crossing, the 16-kilometre stretch of road and three bridges across the Fitzroy River and

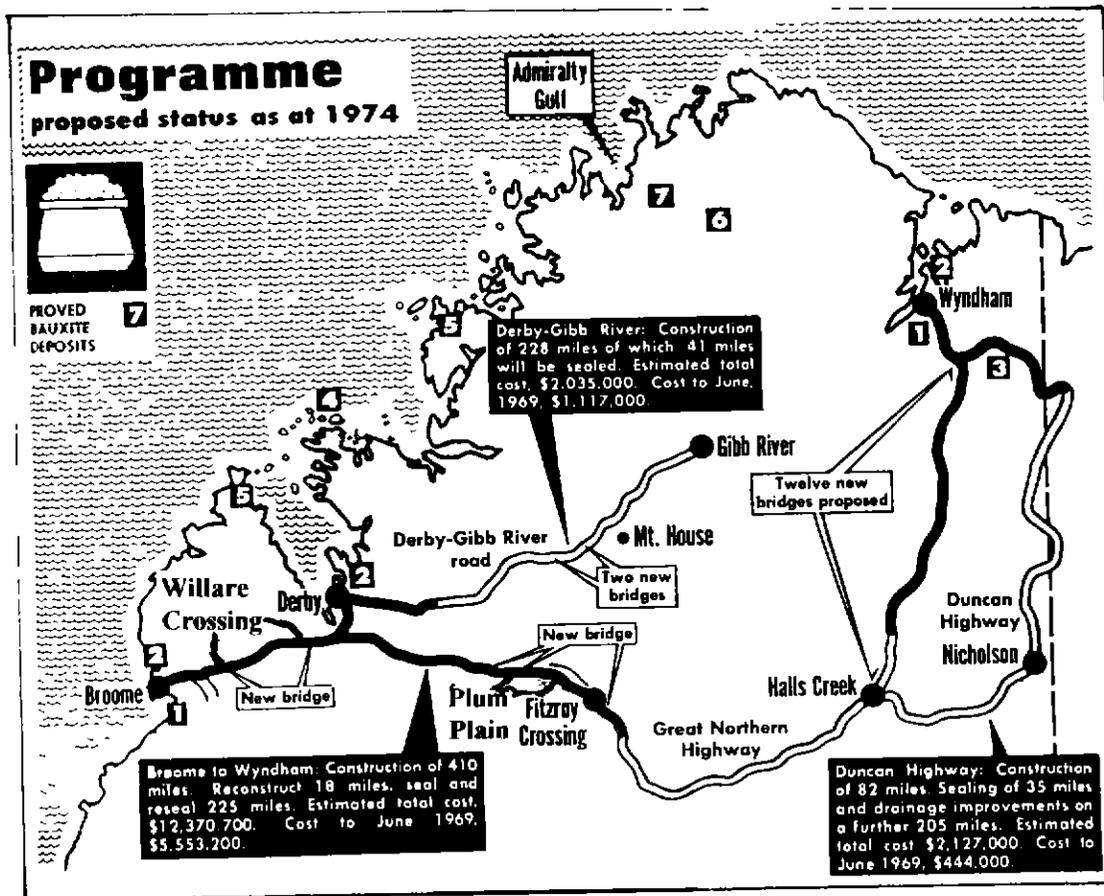


Figure 10.2: Road developments in the Fitzroy basin, Source: Main Roads 1970.

its anabranches, was opened by the Premier David Brand (Field Trip Willare 1997). The construction of the Great Northern Highway to the Derby turn-off, thence to Fitzroy Crossing, continued throughout the 1960s and into the 1970s (Figure 10.2). Unfortunately, despite the massive outlay of capital for road construction, the network in and through the river basins was often seriously disrupted for weeks on end by flooding, with Willare Crossing and Plum Plain in the Fitzroy basin the most troublesome. Willare Crossing had been lifted a metre above the surrounding floodplain and not culverted, resulting in extensive damage to the road when backed-up floodwaters reached road height. The proposed two additional bridges to facilitate ease of travel during the wet season across this bothersome plain never eventuated (Main Roads 1970). Forty-one kilometres of the Gibb River Road were bituminised over the rugged and steep King Leopold Ranges in 1969. Increased road construction meant increased staff, and transportable homes for road workers were based in Carnarvon and Derby to swell the population in those towns (Edmunds 1996). The Main Roads Department also provided miscellaneous work on the stock routes, working with the PWD in reconditioning wells,

constructing rainwater tanks, and putting up reserve notices (Main Roads 1947-1954, LePage 1986). Stock route usage, however, was fast declining, adding to the changes to the pastoral industry's workforce with the demise of the droving teams.

With the lifting of the iron ore embargo in 1960, an aura of growth and optimism over the development of mineral wealth pervaded the North West, with the problems within the pastoral industry and the rangelands virtually ignored. To meet some of the infrastructural demands of proposed growth, motor vehicle licence fees were increased and the Main Roads Department sent equipment and engineers north. In 1961 the Commonwealth Government's Western Australian (Beef Cattle Roads) Act was implemented, to provide funds for road construction to ease the trucking of Kimberley cattle to the southern markets and Wyndham. The North West Coastal Highway was sealed between Geraldton and Carnarvon in the following year. During the construction period, the highway was diverted further inland and an access road constructed to Onslow after a major cyclonic washout (Figure 10.3). With expanding mining activity providing

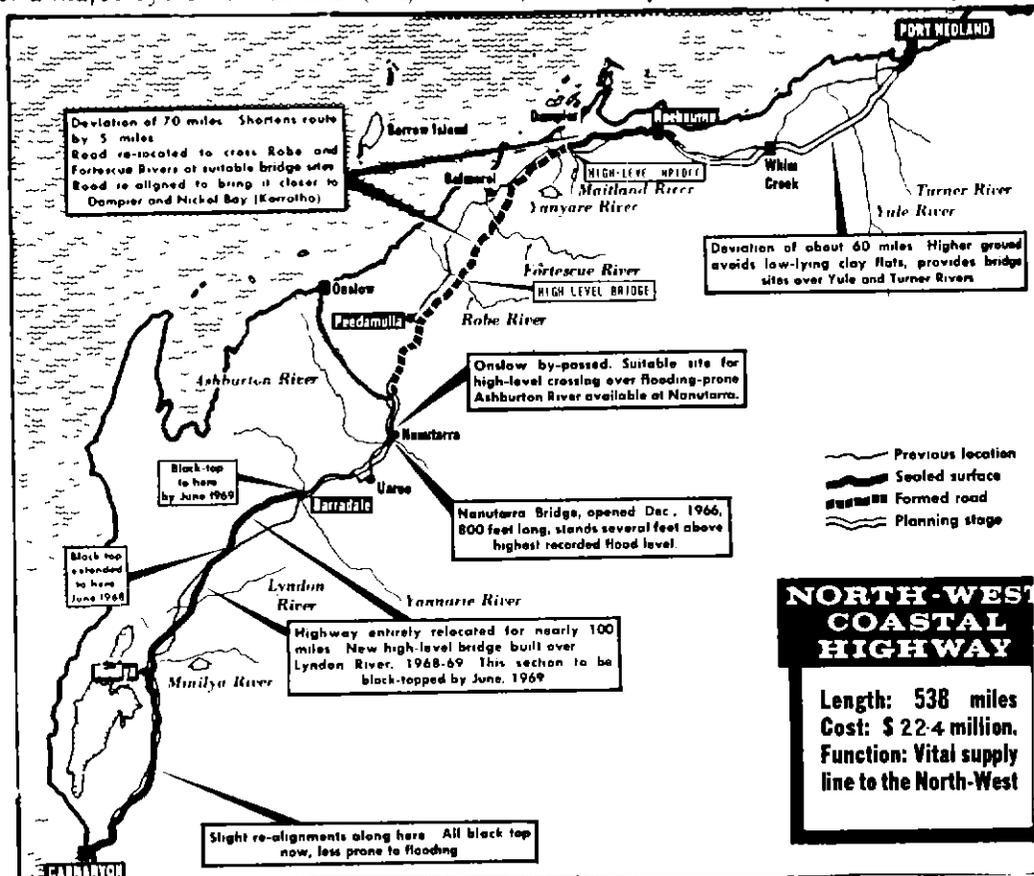


Figure 10.3: Re-alignment of the North West Coastal Highway Source: Main Roads 1970.

the impetus, funding from state and federal sources continued to increase (Edmunds 1996).

Between 1966 and 1974, with the swift progress of mining activities in the North West, the 965-kilometre section between Carnarvon and Port Hedland was remade and finally sealed (Figure 10.3). Twenty-nine bridges replaced the previous flood-prone causeways. The first bridge to be constructed was at Nanutarra over the Ashburton River (Main Roads 1970). Meanwhile, the Great Northern Highway was sealed from Wubin to Meekatharra (Figure 10.1). Nearly three decades following Gooch's study, bitumen strips finally ribboned northwards and vehicular traffic increased as the all-weather roadwork continued.

Like the railways of earlier years, but on a much wider scale, the development of the all-weather beef roads was a major boon to the leaseholders in the river basins, who were able to move stock to markets in record time (LePage 1986). Expert droving teams were no longer required as the age of the big rigs arrived, but the leaseholders' expenses increased with their introduction (Maisey 1979). In due course, the pioneering stock trucks that had battled along the rough gravelled roads were replaced by larger vehicles with tandem trailers on the ribbons of bitumen. By the 1990s road trains were up to 50 metres long, pulling two, three or four double-decked trailers with loads varying from 2.5 metres to 7 metres in width. Many weighed well over 100 tonnes, and carted everything needed in the north, from stock to mining machinery (Plate 10.1) (Kerr 1999). Main Roads workers, however, had to mow the long grass on the road verges of the Great Northern Highway in the Fitzroy basin, to reduce the risk of wildfires caused by passing vehicles (Main Roads 1998).

Increased traffic meant additional costs, as repairing of the minor roads was an expensive operation and a source of despair to the shires whose boundaries encompassed the river basins. In 1997, Dalton, Engineer for the Shire of Carnarvon, reported that the dangerous guttering that had occurred on the minor roads in the Gascoyne region during flooding needed immediate expensive repairs. His local authority had an annual income of less than \$1 832 243 and was responsible for over 15 000 kilometres of unsealed roads. Such routes deteriorated dangerously also, particularly during the tourist season, and causeways over rivers and creeks were extensively damaged when used by road trains (Dalton 1997). In the Fitzroy basin prior to the tourist season,

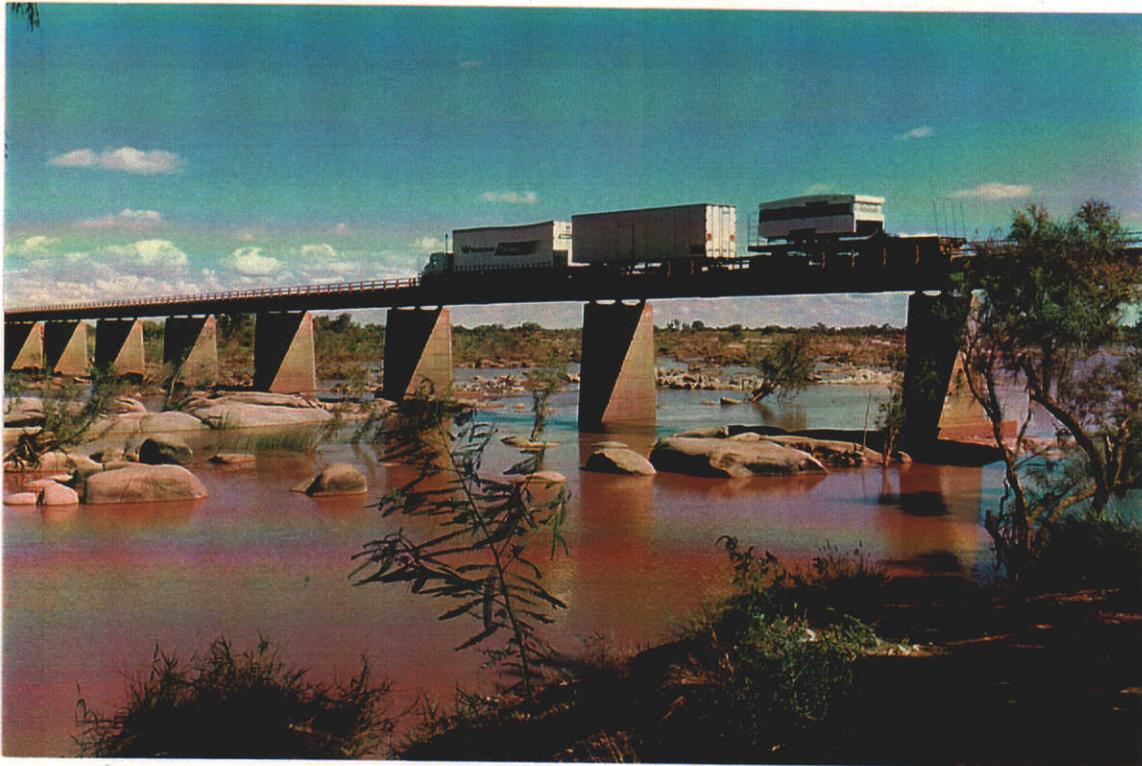


Plate 10.1: A three-trailer road train, Nanutarra Bridge, Ashburton River, 22nd May 1997.

the Derby West Kimberley Shire paid \$200 000 alone for annual repair and maintenance of the narrow 123-kilometre Windjana Gorge Road, a minor road between Fitzroy Crossing and the Gibb River Road (Stevens 1997).

In some situations, the newly -constructed major roads followed the old stock routes. These lifelines for stock movement, which had served the pastoral industry well for nearly a hundred years, were gradually being rendered obsolete. Wells fell into disrepair and stockyards deteriorated as their importance diminished (LePage 1986). In 1976, as a memorial to the drovers, the Meekatharra Lions Club restored to No. 25 Well on Stock Route 16360 (Plate 10.2) (Broad 1988). It became a popular travellers' rest where the Great Northern Highway passed beside it.

With the advent of the new roads, big rigs and new mining towns, the importance of the railway diminished. The Mullewa-Meekatharra line, which was the remaining railway that serviced the Murchison goldfields and pastoral industry, finally closed in 1978. Road trains hauled the necessary commodities to the towns. The former Meekatharra railway yards were taken over by the Shire for a storage and maintenance depot, and the railway station was renovated and used as a museum and billet for visiting



Plate 10.2:The Number 25 Well Travellers Rest north of Meekatharra, 27th August 1996.

schoolchildren (O'Grady 1988). Ever on the lookout for unwanted but useful material, grassmen and Aborigines in the DeGrey basin had already recycled the rails from the closed Marble Bar line in homestead fences, tank stands and trough supports (Taylor et al 1997, Mills 1997).

As road trains increased, some mailruns declined or were abandoned. Partially replacing the former motorised mailruns were the regular aircraft services as well, commonly known as milk runs, which continued to deliver regular mail, spare parts, fresh food and passengers to station air strips in the early postwar period (Lewis 1963). As mechanisation progressed and roads improved, however, and refrigerated semi-trailers transported mail, bulk stores and other necessities, the milk runs were abandoned except in the Fitzroy basin where weekly plane deliveries continued in the 1990s. With the advent of regular and frequent deliveries, the large storehouses constructed on the stations in the early years to hold the massive annual consignments were reutilised for other purposes. The building on GoGo Station in the Fitzroy basin became a recreation room and cinema (Harris 1997). Other mailruns were abolished. The 52-year-old Meekatharra to Marble Bar mailrun, its 1 712 kilometres the longest in the world and passing through the Murchison, Gascoyne, Ashburton, Fortescue and Degrey basins, closed in 1975. Rising

costs of fuel, wages, tyres and vehicles (Edwards 1994), and the mail services available at the mining towns of Newman, Tom Price and Paraburdoo (SROWA 1964, Cons 3525 (was 211), Item 1884, V 2), were responsible for its demise.

10.3 Important Minerals of the River Basins

The plans of the North West Consultative Council included schemes to develop the region's mineral resources. Prior to 1950 and with the exception of gold production, mineral output from the river basins had been limited. In the Gascoyne 16 465 kilogrammes of mica were extracted from Yinnietharra Station, and asbestos from the Fortescue basin reached 9 305 tonnes. Other minerals included beryl (967 tonnes) and copper ore (86 136 tonnes) from Whim Creek. From the DeGrey basin came tantalite (266 tonnes) and tin concentrate (6 054 tonnes) from Marble bar, including small parcels yandied by the Aborigines, with 4 031 tonnes of lead and associated concentrates from the Ragged Hills mine on the eastern perimeter of the DeGrey basin. The Blue Spec mine east of Nullagine, which had produced 969 tonnes of antimony concentrates by 1950, was the only operating concern by 1963. Gold, however, was more lucrative than other minerals. The Murchison had yielded 101 532 kilogrammes of gold, the Gascoyne 440 kilogrammes, the Ashburton 4130 kilogrammes and the Pilbara 147 072 kilogrammes during the early postwar period (SROWA 1963, ACC 4538A, MN 689, Item 253).

With the lifting of the iron ore embargo, however, mining was to gain new importance. Iron ore companies spent millions of dollars opening up new mines and their associated towns on former pastoral leases and in national parks. Open-cut gold mining also generated economic growth and changed former landscapes. The iron ore mining boom, however, brought modern technology into mining and transport operations at an unprecedented level. Grassmen were to complain that prospective employees preferred to work for top wages in the mining industry than for little return on the stations. Mining, however, had an uneasy relationship with the landscape. According to the well-known 'flying bishop' of the North West, Bishop Howell Witt (1979:226):

... every ton of ore that leaves us for Japan has done its dash; it can never be mined again. Now you see it, now you don't. But the sheep, having been shorn one year, will be back with another contribution the year after, and the year after that. So the miner and the geologist and the technician and all their hangers-on are in transit. The pastoralist is there for good. Even when times are bad.

10.4 Goldmining and Services in the Murchison Basin

When the gold price almost trebled during the 1970s, mining was revived in the Murchison basin at Nannine, Tuckanurra, Day Dawn, Big Bell, Cuddingwarra near Cue, and Meekatharra (Figure 10.4). By the 1990s, new open cuts were in operation along the Great Northern Highway between Cue and Meekatharra. Important centres that developed as a result of road construction and mining included the flourishing tourist

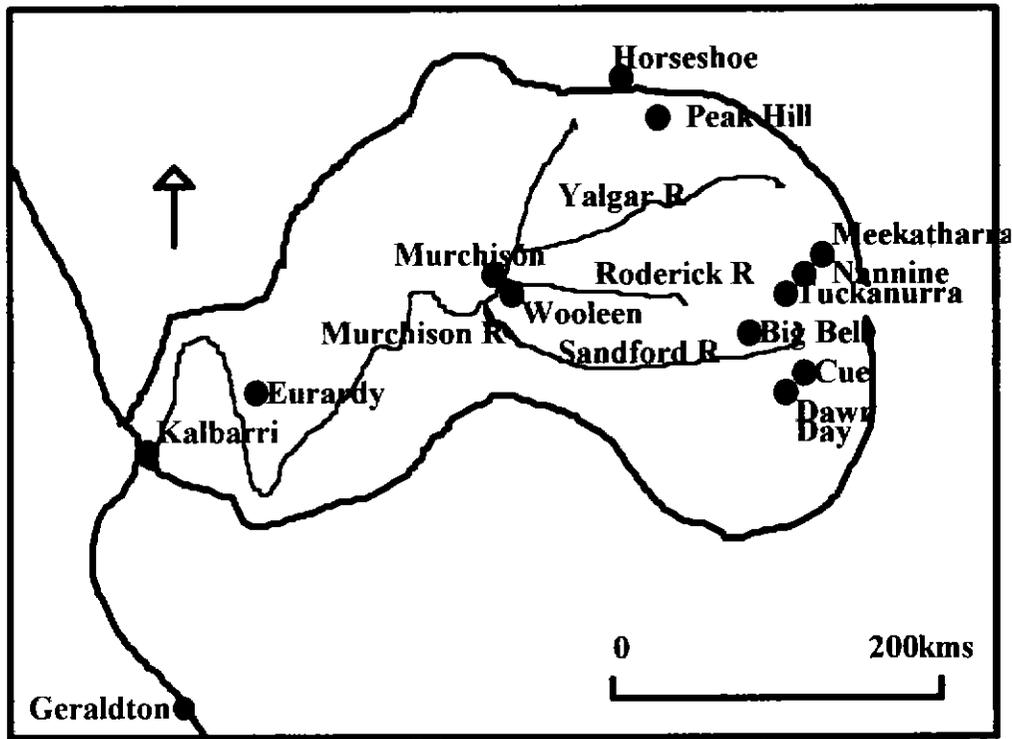


Figure 10.4: Mineral fields, towns and popular tourist venues in the Murchison basin

resort of Kalbarri at the river mouth, the small Murchison settlement in the central basin and the defunct and developing goldmining towns on the basin's eastern rim.

The Big Bell mine situated on Coodardy Station north-west of Cue, its railway a support to the station's movement of stock, was closed in 1952 due to the expense of extracting gold through the deep mining process (McCaskill 1952). Miners' houses were jinkered to other mining centres, and the bell from the church was erected at the front of the main homestead at Coodardy to warn employees of meal times. In 1988 the Big Bell Mining Company, armed with new extraction technology, commenced open-cut operations on its previous minesite. The former swimming pool was turned into a cyanide treatment plant, an airstrip replaced the old railway line, and a new road was

constructed to link with Yalgoo and Perth in the south. The life span of the new mine was expected to be 13 years. As part of its regeneration program, the mining company planted hundreds of trees surrounding the minesite, though mulga, the important fodder for starving sheep of the mid 1930s, was conspicuously absent (O'Grady 1988).

In the Murchison River headwaters, there were open cuts at Peak Hill and Horseshoe, the latter just outside the basin. Peak Hill Resources began mining at Peak Hill in the late 1970s. During the 1980s, 500 000 tonnes of ore were being crushed annually. In 1987 the company began to work over old alluvial tailings (Heydon 1991) Water for the mine was pumped from a borefield some 13 kilometres away at an average of 2 500 litres daily and employees were housed in on-site donghas (Clarke 2000).

In Meekatharra the only operational mine during the 1950s and 1960s was the Haveluck owned by Lou Rinaldi. During the 1970s most Rinaldi leases passed into the hands of Whim Creek WL, with private buyer Ross Atkins acquiring the Ingleston lease (Heydon 1994). Atkins, with the help of new partners, improved facilities by constructing a new crusher that handled 400 tonnes of ore an hour, compared to the 600 tonnes crushed annually by the State Battery. After becoming a millionaire in the short space of four years, he sold the mine to the Bond Corporation in 1980, but eventually purchased most of the shares back. In the mid 1980s, open cut mining commenced at Meekatharra. Ten years later Meekatharra and the surrounding area boasted 19 open pits. Following the introduction of new methods of ore treatment the State Battery closed down in February 1987 and was demolished in 1994 (Hartford 1997) The stampers were re-erected on the edge of the town to greet travellers as they entered Meekatharra from the south.

The boom-and-bust of the goldfields was reflected in the growth and decline of the towns. Meekatharra during the 1950s was in a state of apathy with the closure of the Fenian and Ingleston mines. An increasing number of empty shops pervaded Main Street. It was only the surviving functional Haveluck mine, the State Battery with its skeletal staff, a few stubborn prospectors, and the outlying stations that kept the town operating. Big Bell Carriers, operated by the Bell family, controlled the store and the mailruns (Bell 1997). A number of houses and a mine winder shed were transported from Wiluna when that town's mine closed down, the shed to be re-used as the hangar for the Royal Flying Doctor plane (Heydon 1994) Meekatharra's main achievement at the time was the construction of a new hospital in the mid-1950s (LePage 1986) and a new police

station in 1964. In 1958 Prime Minister Robert Menzies visited the town and predicted the boom that would later eventuate (Edwards 1994). With the Fortescue basin's grassman and prospector Lang Hancock's lobbying the Federal Government since 1951 for the ore embargo to be lifted, his comment was based on inside information (SROWA 1963, ACC 4538A, MN 689, Item 253). By the 1960s, however, with a population of 675, many houses were still unoccupied (ABS 1967). The jealous populace was becoming accustomed to the north-bound, dirt-spattered heavy haulage vehicles parked end-to-end in Main Street, loaded with materials for the Fortescue basin's iron mines and their new towns (Edwards 1994).

There was little improvement in Meekatharra until the revival of the goldmining industry during the 1980s, when a flurry of activity occurred. Old buildings were renovated and new buildings constructed, including a post office, a high school, a five-star motel, another new police station, shire offices, and many brick homes which replaced some of the corrugated iron dwellings of the earlier gold rush days. Others were constructed on newly-planned streets. The Meniarra Aboriginal community swelled the population with its State Housing-constructed homes. Under the advance of open-cut mining, poppet heads vanished from the skyline that was transformed with revegetated waste dumps providing convenient hills for tourists and townsfolk to climb and view the town and its fenced-off open cuts. By 1996 the population had almost doubled to 1270 (ABS 1996). In the mid 1990s however, Plutonic mines in the hinterland of Meekatharra were placed on a care and maintenance program because of declining gold prices and flooded mine sites. Plans were formulated to re-open them as deep mines (Harford 1997). Thus were the oscillating fortunes of goldmining.

The nearby ghost towns of the earlier goldrush, however, were popular tourist attractions. Thousands of visitors travelled annually to see the old stone buildings of Cue and the ruins of Day Dawn (Plate 10.3), Nannine and Peak Hill (Shire Clerk Meekatharra 1997). The latter, which was once a thriving town during the goldrush days, had a precarious existence during the 1950s, with the licensee of its hotel also operating as the barber, storekeeper, dentist and baker. The licensee passed away in 1962, precipitating the demise of the town, and the hotel was soon dismantled, with roofing iron and other parts of the building taken by the mindful grassman Pazzini for his Mount Vernon Station homestead in the Ashburton basin (Plate 10.4) (Heydon 1991). In 1998 the town ruins were surrounded by a large, fully-operational open cut mine on old and new waste dumps,

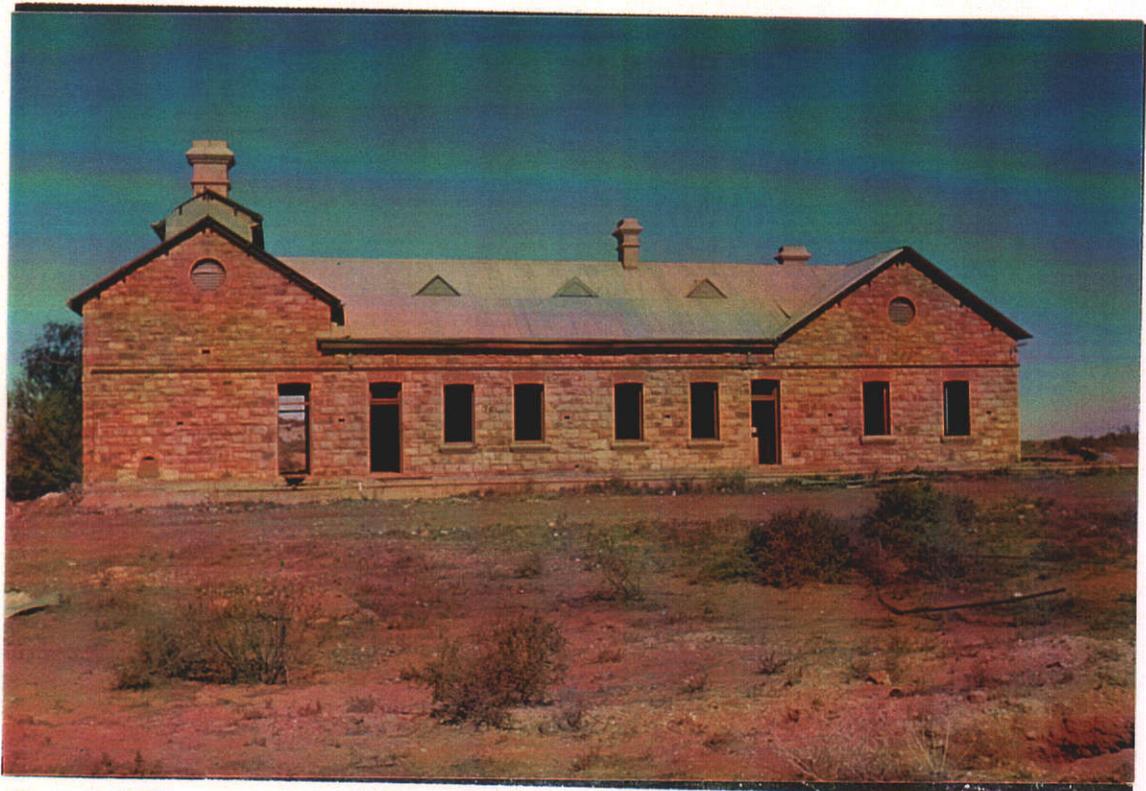


Plate 10.3:The assayer's workshop, office and residence at Day Dawn as it was in July 1988.



Plate 10.4: The ruins of the Peak Hill Hotel, 20th August 1997

discarded mining equipment, the poisonous rosy dock (*Rumex vesicarius*), cotton bush, (*Ptilotus obovatus*) and old empty beer bottles.

The township of the postwar Nannine slowly dwindled as the gold ran out. By 1947 most houses had been jinkered out to Meekatharra, including the corrugated iron and timber dwelling of retired carrier Guy Bell, in which he had been born and raised (Plate 10.5). The cemetery, on the banks of Lake Annean, continued to be used at the request of early Nannine residents who desired to be buried there (Bell 1997).

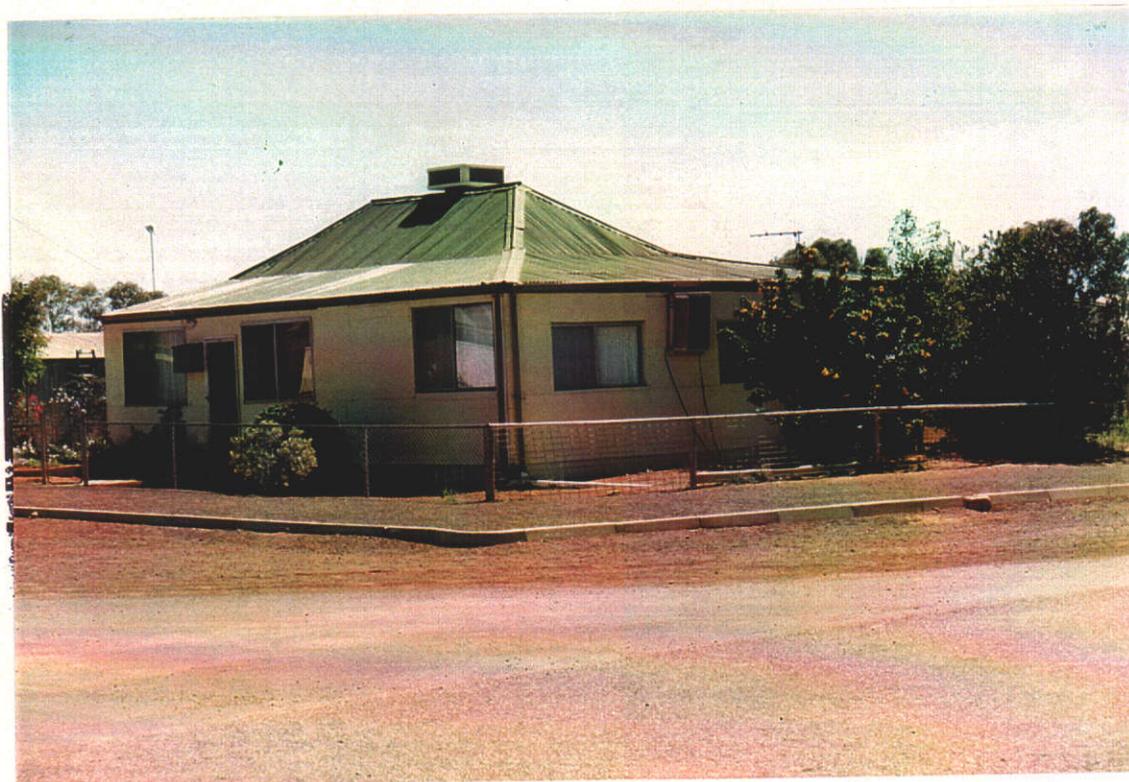


Plate 10.5: Guy Bell's former Nannine home in Meekatharra, 18th August 1997.

Kalbarri provides a case study of a growing tourist centre in the North West. With its beginning as a small fishing settlement visited by a limited number of dedicated holidaymakers in the late 1940s, the future Kalbarri became identified as a locality called the Mouth of the Murchison. As its popularity grew, tourist accommodation was established and basic services provided. Access to the settlement was along a notorious sandy track from the North West Coastal Highway, with the manager of the nearby Murchison House Station being frequently called upon to pull vehicles out of sandy bogs (Blood 1980). In 1950 a townsite was surveyed on 259 hectares of land excised from

the station. The Mouth of the Murchison was gazetted as Kalbarri in 1951 as a crayfishing and tourist centre. By 1959 there were 21 permanent residents. In 1963, as an impetus towards further development by enticing the tourist trade, 186 000 hectares of surrounding sand plains were excised from the Murchison House lease and gazetted as the Kalbarri National Park, encapsulating the beautiful gorges of the Murchison River. By 1971 the permanent population had grown to 300 people, and tourists were increasing in numbers (Kalbarri Townscape Committee 1995). By 1996 the town, with 1788 permanent residents, was a thriving tourist centre with wide, green lawns fronting the river estuary. A two-lane bitumen road replaced the notorious sandy track, linking it with the North West Coastal Highway, and an upgraded road provided a scenic coastal drive south to Port Gregory, providing an alternative route south to Geraldton (Prause 1999). Fishermen and retirees had added to the town growth. To further enhance Kalbarri's importance, the Shire of Northampton relocated from Northampton into new offices fronting the small estuary (Administration Officer, Shire of Northampton 1996).

In the central Murchison, which was once totally bereft of service centres, a settlement for the purpose of local government was constructed on the Gascoyne-Mullewa Road. The former Murchison Roads Board had met for many years on selected stations in the area until the decision was made to find permanent accommodation. In 1964 plans were developed to house the Shire in its own buildings, and Yarric Paddock of Wooleen Station was excised from the lease. In 1965 the Shire commenced operations from its new headquarters with a full-time shire clerk in residence (Plate 10.6) (Wendland 1996). In 1968 land was again excised from the Wooleen lease for reserves. By that time houses had been constructed for the shire clerk and employees. A further 19 hectares of land were excised in 1973 for a recreation area for the Murchison Sports Club (SROWA 1964, Cons 3525, Item Vol No 3504, V 1). An ablution building and sports pavilion were constructed in 1981. A 15kW power plant provided electricity. A small golf course and tennis courts completed the sporting arena. A total of 400 hectares comprised the Murchison Settlement, proclaimed as such by Dudley Mason MLA in July 1988 (Figure 10.5). The pavilion was used for meetings for the Murchison Gardening Club, the Disabilities Service Committee, Busy Fingers Craft Club, the Country Women's Association, and travellers passing through who wished to spend the night. The sports grounds were used by the local grassmen for gymkhanas, polocrosse matches, tennis tournaments, cricket matches and field days. As a service to the local grassmen, the Shire had a library and small tourist information centre, provided a boardroom for special

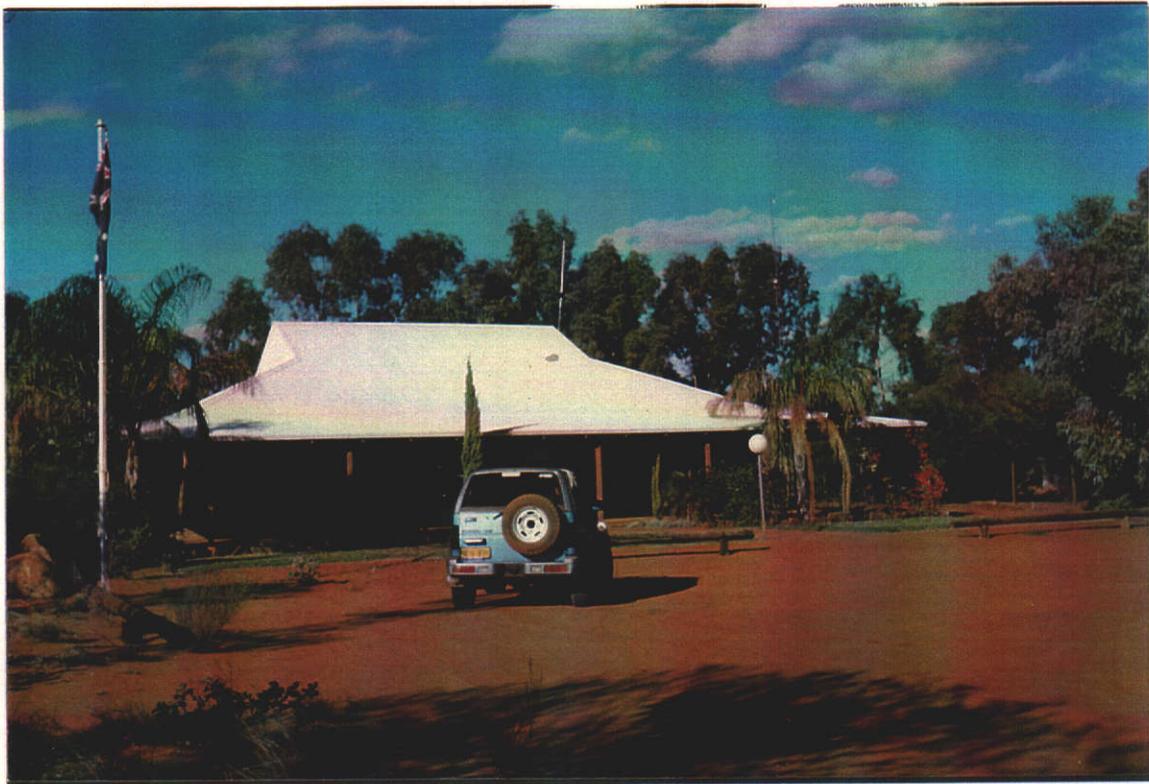


Plate 10.6: The Murchison Shire offices in the Murchison Settlement, 13th June 1996

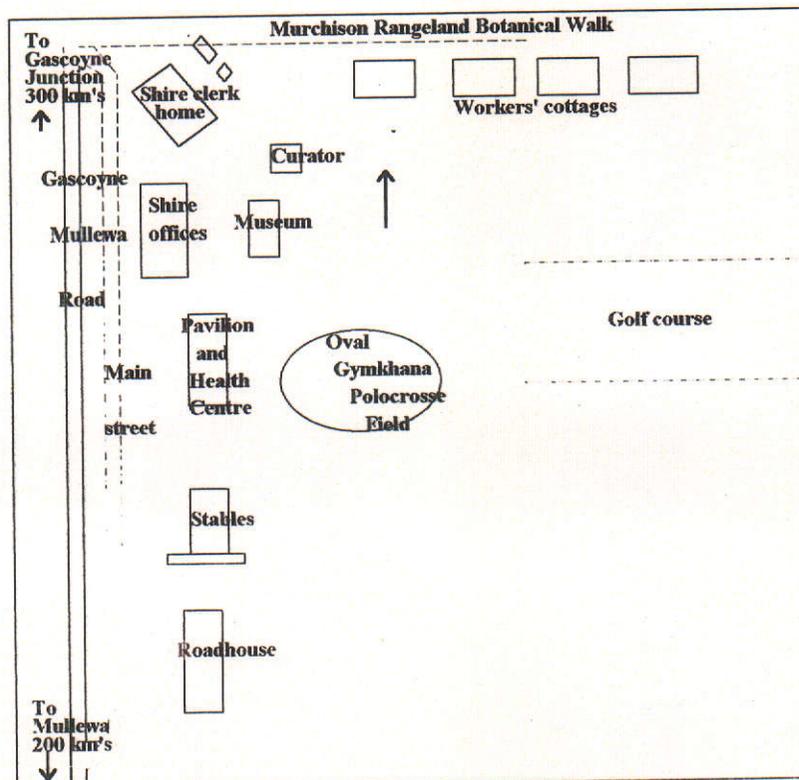


Figure 10.5: Sketch plan of Murchison Settlement. Field Trip 1996.

conferences, made photocopying facilities available, and held the mail for the grassmen. Tourists were encouraged to drive along the shire roads, photographing the wildflowers (Plate 10.7). A final service included the publication of the monthly *Murchison Monologue*, keeping the locals up to date with Shire news and forthcoming events (Keogh 1996).



Plate 10.7: Wildflowers, Gascoyne-Mullewa Road, Woolgorong Station, 9th September 1996

To encourage visitors to the small settlement, and preserve the pastoral history of the central Murchison basin, the Murchison Museum opened its doors in 1985, with Irish immigrant Marie Wendland as Honorary Curator. Another home was constructed for her benefit. The Murchison Roadhouse, with its small caravan park, commenced business in the same year (Wendland 1996). As an encouragement for rangeland users to investigate and travellers to stay awhile, Meg Officer of Woolgorong Station, a member of the Murchison Land Conservation District Committee, in conjunction with CALM, devised a scheme for a botanical rangewalk at the settlement. With the help of the Shire a one-kilometre trail was laid, significant plants pegged and numbered, and a pamphlet prepared for tourists. Officer had, over the years, identified and

established thousands of native plants in the paddocks of Woolgorong Station and submitted her finds to AGWA (Officer 1996a).

10.5 Mining and Services in the Gascoyne Basin

Mining was of a small scale in the Gascoyne basin where Plutonic Operations had a gold mine on the river's headwaters (Figure 10.6). Water supply for the

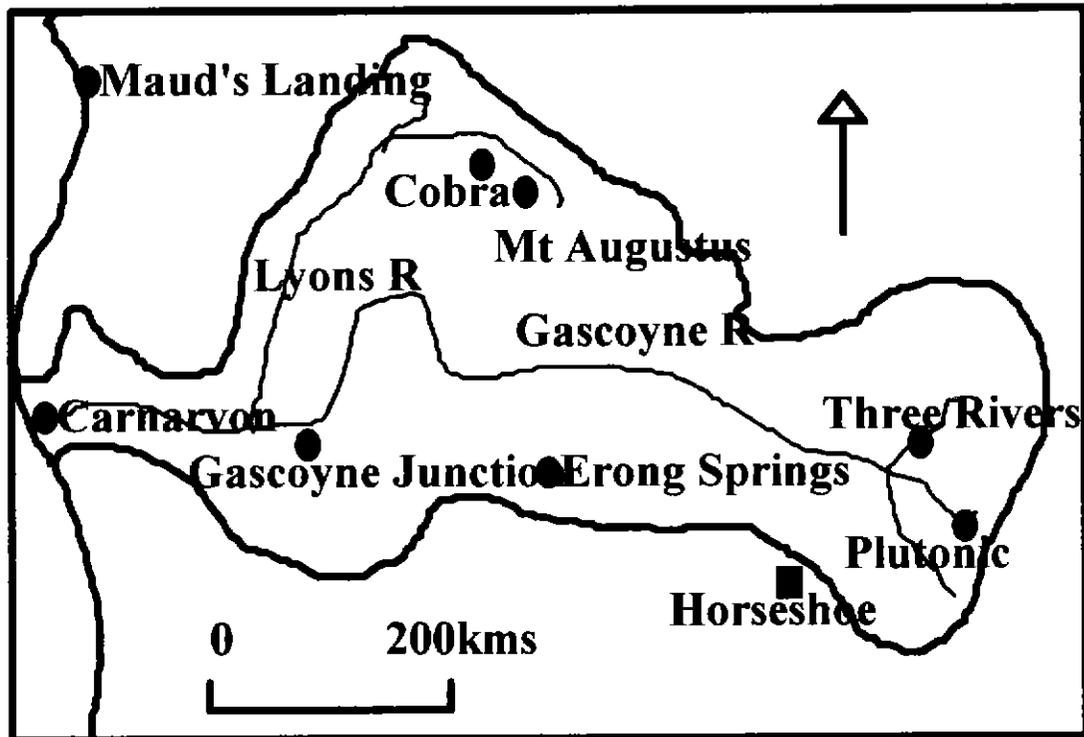


Figure 10.6: Location of the Plutonic mine site, towns and tourist centres in the Gascoyne Basin.

operation was from a borefield 100 kilometres to the west (Figure 10.7). Plutonic employed 400 people, with plans for an increase to 700, who lived on the site, working under the fly-in, fly-out system. Prior to the commencement of mining operations the area was searched for Aboriginal artifacts and sites, with the help of the local Aboriginal people. Several were discovered and reported to the Western Australian Museum, with at least one site being fenced-off (Plutonic Gold Project 1989).

There were only two towns in the Gascoyne basin, one designed to grow through agriculture, the other through local government. Both benefited from tourism with up to 160 000 a year in the Gascoyne region (GDC 1999). Carnarvon was at first the grassmen's town, but by the 1960s plantation ownership had increased to replace their

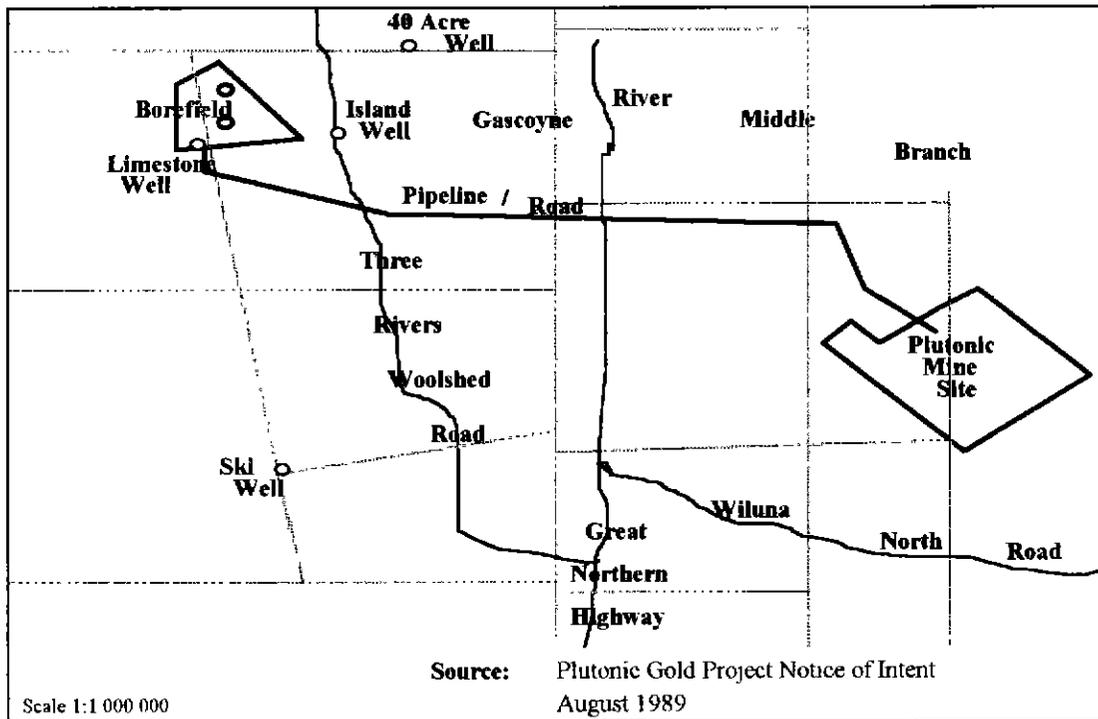


Figure 10.7: Plutonic Operations Limited within the Three Rivers lease

dominance (Theaker 1983). Apart from the construction of a new hospital, however, little changed until that period. In 1967 the population was 2719 (ABS 1967). Major development of new plantations in the immediate hinterland resulted in population growth, and further land was alienated from Brick House Station (SROWA 1955, Cons 1755, AN3/9, Item 2908). By 1976 the population had increased to 5341 (ABS 1976). With the easier access provided by the sealing of the North West Coastal Highway in the 1960s, tourists, holidaymakers and immigrants taking up plantations flocked to the town (Main Roads 1970). By 1997 the population exceeded 6300 and there was a shortage of residential land. Development plans therefore were implemented that included a housing estate on Babbage Island (Figure 10 8), which was connected to the mainland by a tramway (*NorthWater News* 1996). A new suburb, named Brockman after one of the first settlers, was under development east of the town (Shire of Carnarvon 1997). To alleviate the problem of flooding in the town and the developing plantations, as well as to increase the replenishment rate of the underground water supply, the PWD constructed barriers in the Gascoyne River bed (LePage 1986).

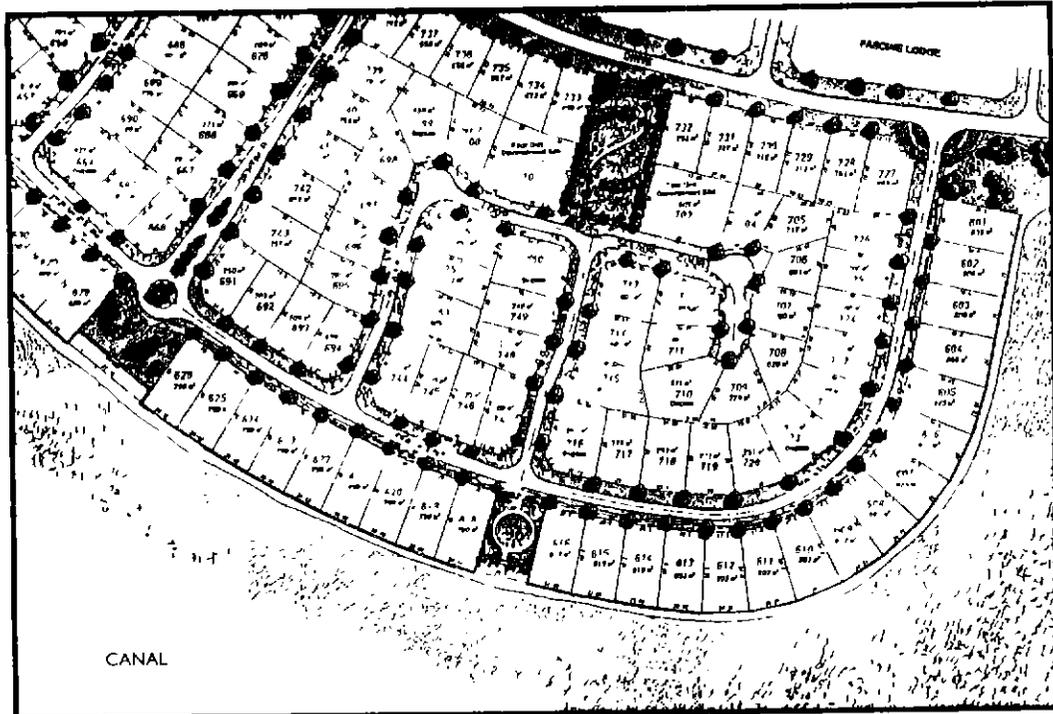


Figure 10.8: The proposed Babbage Island Northwater Estate. Source: *NorthWater News* 1996.

In the central Gascoyne basin the only change in Gascoyne Junction was the establishment of a school in 1959, a result of the continual lobbying of grassman and Shire President Lachlan McTaggart of the nearby Bidgiemia Station. Classes at first were held in the original Gascoyne Roads Board building. A total of fourteen children, whose ages ranged from six to 14 attended, including four Aborigines (McDonald 1991) A new school building was constructed in 1965. Nearly 30 years later, however, the school closed after Lachlan McTaggart's grandchildren left for their secondary education in Perth (McTaggart 1996). The settlement comprised the administration buildings and yards of the Shire of Upper Gascoyne, the police station, several homes, a cultural hall, a small sports and crafts centre in the original school building, and an hotel/motel with a caravan park and service station (Figure 10.9). Tourists visited the nearby Kennedy Range National Park with its varied bird life and native flora (WANPARA 1996). Further to the north east was Australia's largest monocline, Mount Augustus, at 1 105 metres above sea level, 858 metres above the surrounding plain, and covering 4 795 hectares. There were facilities for caravans, campsites and cabins, and a small store, on land excised from Mount Augustus Station (Plate 10.8). Nearby Cobra Station, and to the south Erong Springs, provided further holiday venues for tourists with their station stay enterprises (Graham 1997).

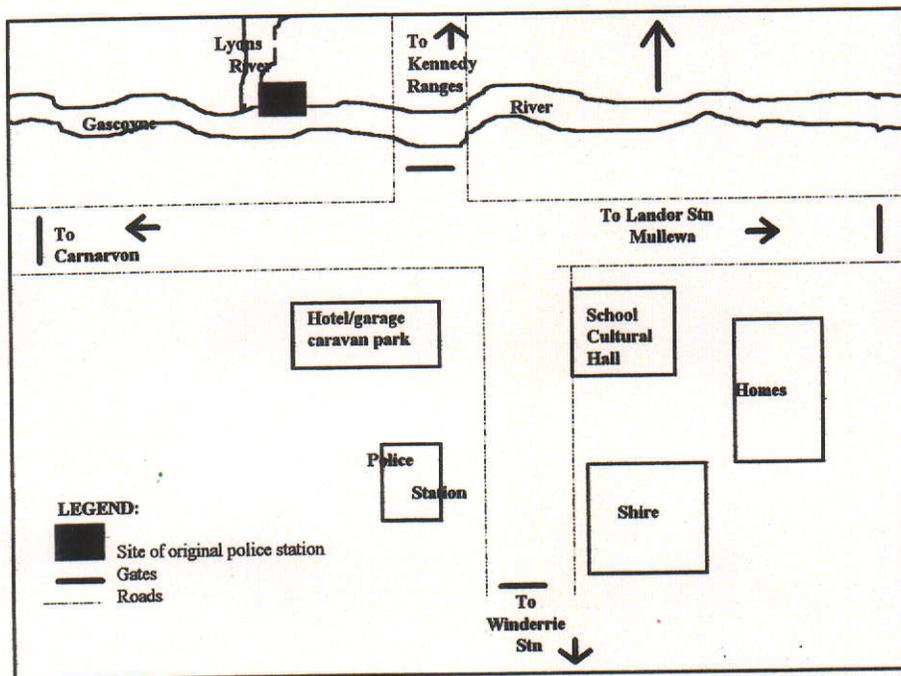


Figure 10.9: Sketch map of the settlement of Gascoyne Junction. Field Trip 1996

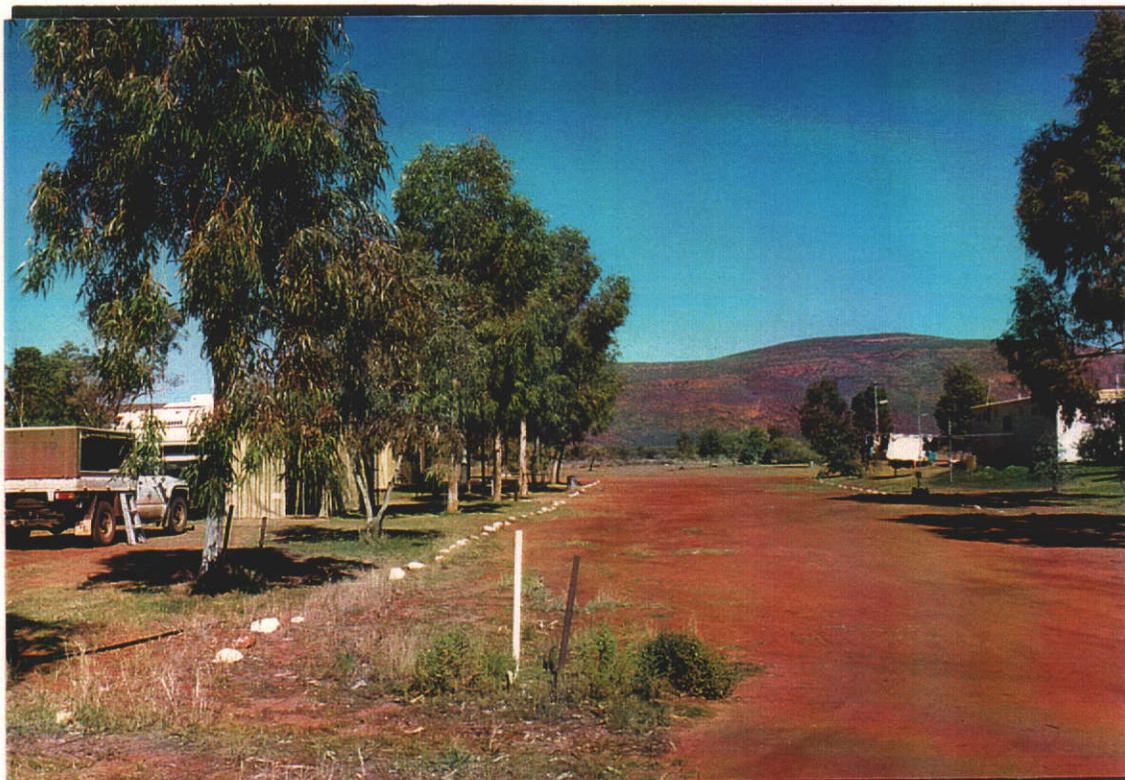


Plate 10.8: Mount Augustus from the Mount Augustus Caravan Park, 12th August 1997

10.6 Mining and Services in the Fortescue and Ashburton Basins

The first modern mining construction in the Fortescue and Ashburton basins was on the flanks between the two basins (Figure 10.10). Mulga Downs Station grassman Lang Hancock, and Perth accountant Peter Wright had been mining blue asbestos in the Hamersley Range since 1938. In 1943, operating as Australian Blue Asbestos, a subsidiary of Colonial Sugar Refinery (CSR), Hancock and Wright

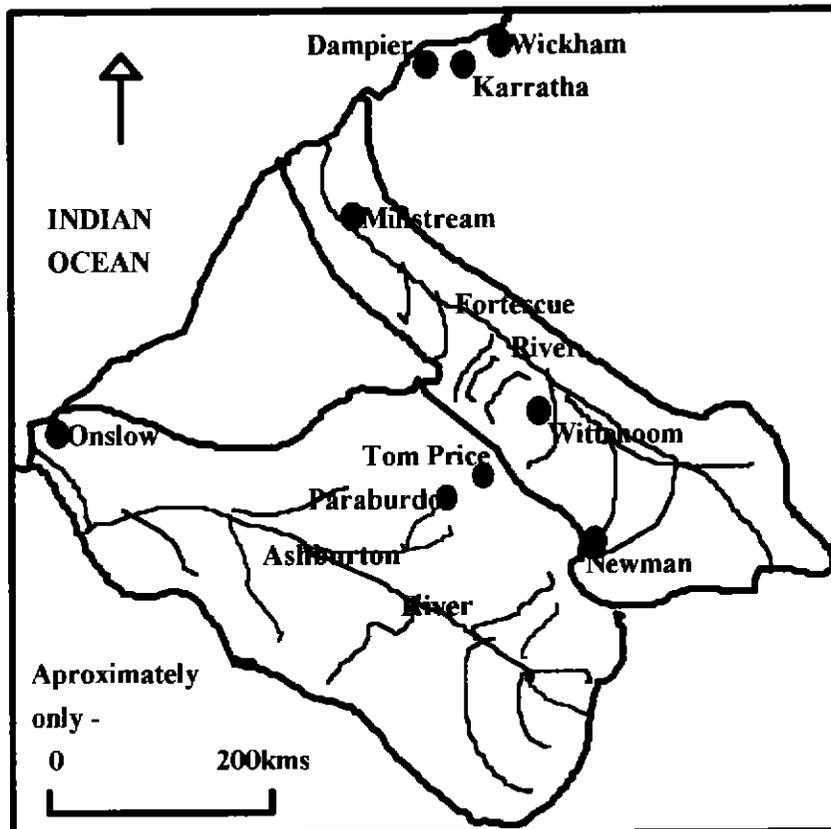


Figure 10.10: Mining and towns in the Fortescue and Ashburton basins.

commenced large-scale operations and the fibre was transported overland to Point Samson near Roebourne for shipment. The town of Wittenoom was constructed with the help of the State Government to house the workers (Duffield 1979). It was a company-owned town of approximately 2000, and run, according to Bickerton (1989:76) like a concentration camp. Services included the Hotel Fortescue, the company store, a delicatessen, an open-air cinema, the single men's mess, a police station, the Tableland Roads Board office, a primary school, a hospital and banking agencies. The houses, on quarter-acre blocks, were constructed of timber and asbestos, with no lining (Cooke 1997,

LePage 1986). Asbestos tailings covered the airfield, roads and paths (Bickerton 1989). After earning its company \$2 million a year and in 1966 at the time that iron ore was taking off nearby, the mine closed. Most of the population of around 1800 dispersed through the North West to more lucrative employment (Duffield 1979). In later years, the mine tailings were found to be a serious health hazard, causing asbestosis and mesothelioma (Bickerton 1989) but in 1997 there were still 30 residents who chose to remain despite the removal of most services, including the telephone (Reed 1997).

It was iron ore that provided the impetus for major growth and development on the flanks of the Fortescue and Ashburton basins. In 1970 it was estimated that there were approximately 15 000 million tonnes of high grade ore available in the Hamersley Range. (Main Roads 1970). Thirteen years previously prospector Stan Hilditch discovered the Mount Whaleback iron ore deposits in the Ophthalmia Range on the divide between the headwaters of the Fortescue and Ashburton basins. Hilditch and a partner, C.S. Warman, were granted the mining leasehold in 1962 and a 426-kilometre single track railway (Figure 10.11) was constructed to link Mount Whaleback with a new

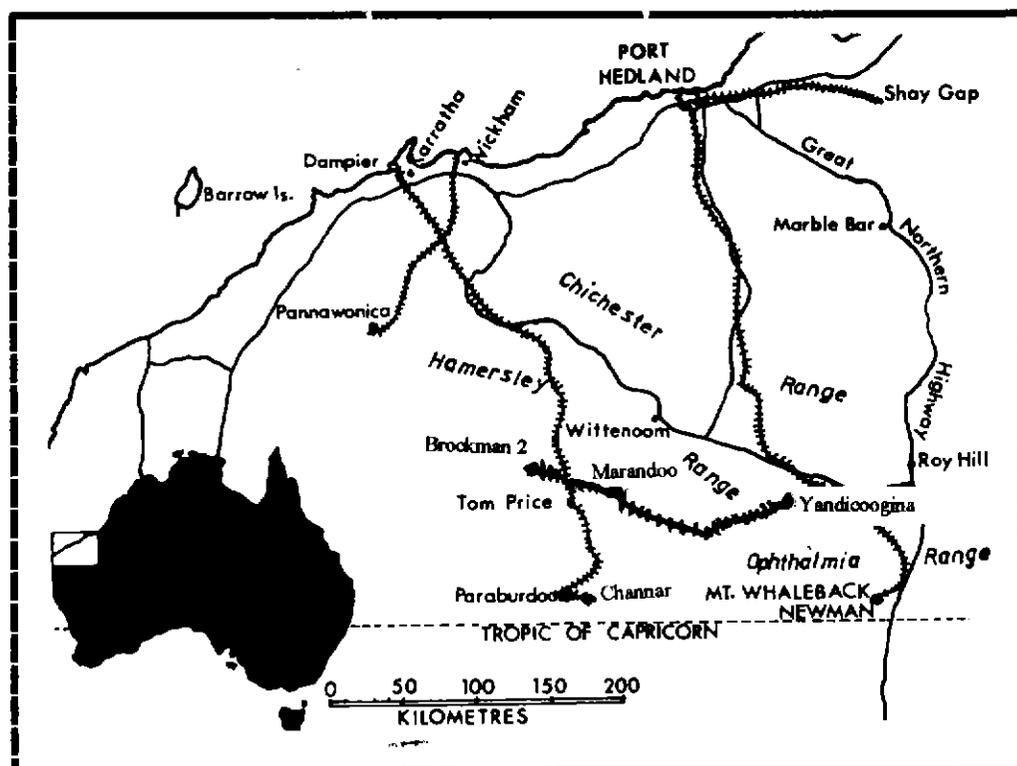


Figure 10.11: Map portraying the localities of the mining railways in the Pilbara, Channar is linked to Paraburdoo by a conveyor belt. Source: BHP Iron Ore 1994.

port at Nelson's Point near Port Hedland (Plate 10.9) (BHP Iron Ore 1994). In 1968 the mining town of Newman was gazetted to house the workers and administration staff. In



Plate 10.9: BHP loading facilities at Nelson's Point near Port Hedland. In front of it are a long line of the wagons of an inland ore train, July 1997.

1969, the new mine produced 34 million tonnes of ore, for markets in Japan, Europe, Britain, and China. A small quantity was absorbed by the Australian iron and steel industry (Eckhart 1996). By 1975 output had grown to 40 million tonnes and in 1980 a \$25 million crushing facility was constructed at Nelson's Point. In the same year Newman ceased to be a company town and was handed over to the Shire of East Pilbara. Production continued to increase, and transport and port facilities were upgraded accordingly (BHP Iron Ore 1994).

By then, however, environmental conditions could no longer be ignored. Millions of litres of water were used daily to keep the dust down during the mining, storage and loading operations, and millions of dollars were spent on rehabilitating the waste dumps at Mount Whaleback (BHP Iron Ore 1994). Water was of paramount

importance to BHP and other mining operations. In 1981 the company constructed the Ophthalmia Dam on the southern headwaters of the Fortescue River, with consequent hydrological instability downstream. At risk was the recharging of the aquifers below the river bed near Millstream Station, which had supplied much of the water for Port Hedland and Tom Price and its mining, and was subsequently closed, with Port Hedland's supply replaced with the borefields for other mining industries near the Yule, Turner and Strelley Rivers (Figure 10.12) (Clarke, 1996, LePage 1986).

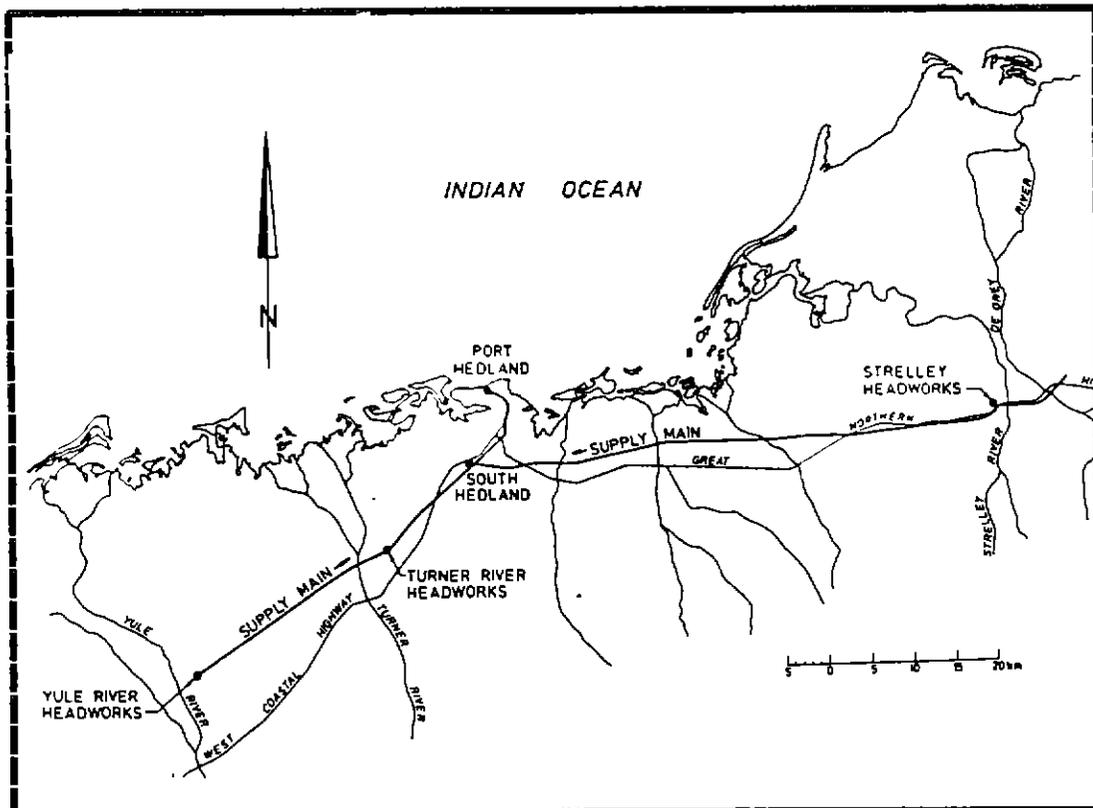


Figure 10.12: Pipeline for Port Hedland's regional water supply Source: LePage 1986.

Hamersley Iron (HI), in partnership with Conzinc Rio Tinto, commenced mining at Mount Tom Price in the Hamersley Range in 1966, just across from the northern-located Wittenoom. The township of the same name was constructed to house over 3500 people. On the coast the port of Dampier was constructed, with a township to house 1800. Both were company towns. In the same year a 288-kilometre railway was constructed between the two points (Figure 10.11). The operation was on a larger scale than Mount Whaleback. Dampier handled 50 million tonnes of ore annually. The produce

was shipped to Europe, the United States, Taiwan, Japan, Korea and China (Hamersley Iron 1991). By the late 1990s, Mount Tom Price had disappeared (Plate 10.10), and giant waste dumps had created a new skyline. Because of site limitations at Dampier, HI



Plate 10.10: This was once Mount Tom Price, with waste dumps in the rear. 14th August 1996.

established a town at Karratha beside Nickol Bay, the first landing area of the North West, 20 kilometres to the south-east. The two towns' water supply from Millstream Springs on the Fortescue was reinforced by the construction of the Harding River Dam in 1985 (Clarke 1996). Construction work and the laying of the borefield and pipelines was carried out by the PWD at a cost of \$22 million (LePage 1986).

HI commenced commercial production at Paraburdoo, 50 kilometres south of Tom Price, in 1973, and a town of 2200 people came into being. Operations also commenced at Channar (1990), Marandoo (1994), Brockman No. 2 and, after an historic land-use agreement with the Gumala Aboriginal Corporation, Yandicoogina (1997). These mostly operated under a fly-in, fly-out arrangement for their employees. To secure access to the Yandicoogina mine site HI offered the Gumala Aboriginal Corporation and 13 Native Title claimants \$60 million over 20 years in employment, training and business development. (Reardon 1997). A similar program was already operating in HI's other

mines, with the formation of the Aboriginal Training and Liaison Department, to develop good relationships with local Aborigines, provide employment and education opportunities, and foster Aboriginal support for company activities. Trainees were encouraged to apply for work with HI either at the port, or on the mines. Other avenues fostered by HI were clerical traineeships, apprenticeships and tertiary scholarships for Aboriginal people (Hamersley Iron 1990). The company went even further in its attempts to respect and preserve Aboriginal heritage. Doris Cooke of the Makathunni Community reported in 1997 that HI was seeking an Aboriginal lecturer to inform its employees about traditional food resources and history. Cooke felt the idea ludicrous, considering no community members had the necessary skills to present lectures (Cooke 1996). By 1997 there was a cluster of large open-cut mines within the iron-rich Hamersley Range National Park (Reardon 1997), and a number of other deposits were under feasibility studies by HI and BHP (*Prospect* 2000). There was also growing concern that extended mining operations in the future might well have a detrimental effect on the ecology of the Ashburton and Fortescue Rivers and the Hamersley Range.

A different mining activity was Onslow Salt Pty Ltd, which commenced the establishment of the Onslow Solar Saltfield on the mud flats near Onslow (Figure 10.10). Halpern, Glick and Maunsell (1997) constructed the 11 kv powerline, perimeter fencing, drainage, seawater pipeline, new jetty and shiploading conveyor. With soil disposal areas, dredging and infrastructure, the operation was expected to be completed in 2000, despite the millions of dollars worth of destruction caused by Cyclone Vance in March 1999. One hundred people were employed during the construction, with 65 expected to be permanently employed when the plant was fully operational (PDC 1999).

Further growth of the coastal town of Onslow was assured with the development of the new solar saltfield. It was still however, the only coastal town in the Ashburton basin, and had served its hinterland since pastoral settlement. In 1973, with the new highway bypassing the town and the port being closed (Webb 1983), it became a backwater. In 1976 its population was a mere 220 (ABS 1976). In January 1990 the headquarters of the Shire of Ashburton were relocated to Tom Price, thus removing a major function from Onslow. Its hinterland now much restricted, Onslow no longer serviced the pastoral industry of the hinterland, whose business was conducted at Paraburdoo and Tom Price (*Ashburton Shire Directory* 1995). By 1996, however, the

number had more than doubled to 588 (ABS 1996) through tourism, Aboriginal resettlement and a thriving fishing industry (*Ashburton Shire Directory* 1995).

10.7 Mining and Services in the DeGrey Basin

Postwar mining in the DeGrey basin (Figure 10.13) was mainly localised and conducted by small operators. The Shaw River tin deposit was worked by Arthur Bickerton and 16 employees who lived on the site (Bickerton 1989). The Stubb family

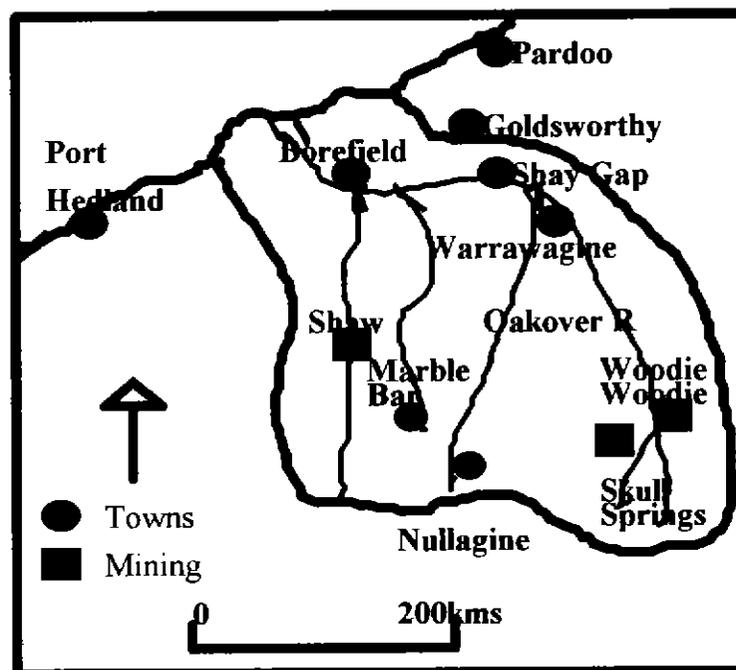


Figure 10.13: Localities of towns, mines and a borefield in the DeGrey basin

worked the long-lasting deep gold mine, Comet Mine, near Marble Bar. Further east on the Oakover River, the Woodie Woodie manganese mine was re-established by Len Ives and his partners Bell Brothers in 1952. Bell Brothers at the time also ran a manganese mine at Skull Springs on the Davis River. They were granted a limited permit to export 10 000 tonnes of ore, the first shipment leaving in 1953 (Hardie 1988). By the 1990s, large-scale operations continued at Woodie Woodie through Consolidated Metals, with four-trailer road trains carting the manganese ore to Port Hedland (Clarke 2000b).

On the northern edge of the DeGrey basin Goldsworthy Mining, a subsidiary of BHP, had operated the Goldsworthy iron ore mine for 20 years since 1962. At its closure the buildings were bulldozed and buried on site (Figure 10.13). In 1973

BHP commenced iron ore mining at Shay Gap near Yarrie Station, on land excised from that lease. The company town of the same name housed 1000 people. Dwellings were hermetically sealed and air conditioned, steel-framed and fibreglass-walled for better cyclonic protection, with several inches of rubber between the outside fibreglassed wall and the hardiplex-covered interior. Water was supplied by a bore on Pardoo Creek several kilometres away. Twenty years later BHP was developing the Yarrie mine further eastwards, billeting the contractors at Shay Gap and bringing objections from the residents. Workers went on strike in 1993, and BHP retaliated by closing the town. In 1994, similar to the fate of Goldsworthy, the township of 20 years was razed to the ground. The houses, complete with appliances, furnishings and furniture, were wastefully bulldozed down and buried many metres beneath the red dirt (Plate 10.11) (Clarke 2000a).



Plate 10.11: Beneath the dirt were the homes of Shay Gap, 10 July 1994, Courtesy Sue Clarke

BHP had previously transported several of the houses to the Nomads community at Waralong, which, much perplexed by the gift, was unable to secure financial assistance for the preparation of foundations, the connecting of electricity, or the installation of plumbing. The houses, not used by community members, were destroyed by Cyclone Kirsty in March 1996 (Taylor et al 1997). The Yarrie mine was still in operation in 2000, its workers employed on a fly-in, fly-out basis (Clarke 2000b).

During the 1950s Marble Bar (Figure 10.13), with a population of 598, had a reputation as the hottest town in Australia. Treeless and dusty, it owed its continuing existence to the grassmen and managers of pastoral leases, the prospectors and the Comet and Shaw River mines (Mallett 1992). Modern conveniences were few. Some houses were lighted by electricity from the local store; others depended on acetylene or kerosene lamps (Edwards 1993). By 1996 the population of Marble Bar had shrunk to 318, despite a flurry of exploration and mining activity in the basin, and an influx of Aborigines. In the 1990s, its streets were tree-lined and shady (Plate 10.12), but visitors were discouraged by

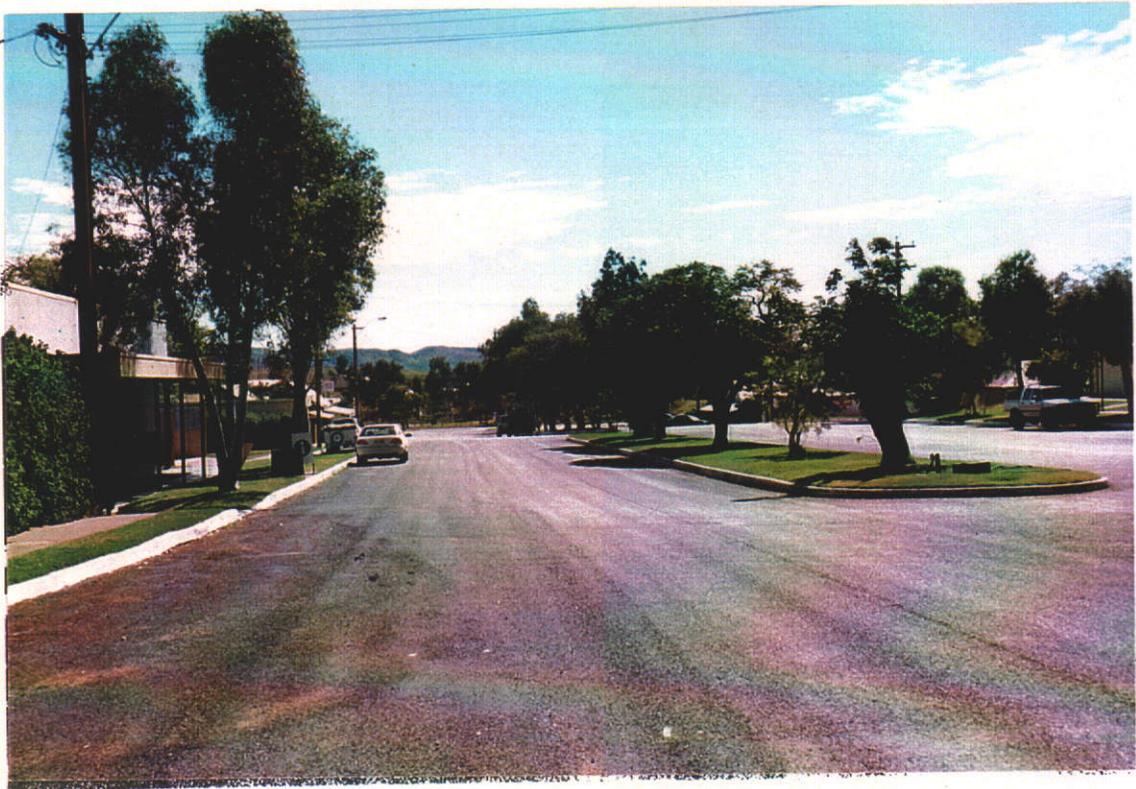


Plate 10.12: Francis Street, the main street of Marble Bar, 2nd August 1997

the forbidding state of the gravel access road (Logue 1997). In fact, DeGrey basin had little to offer the tourist, and mining companies operating a fly-in, fly-out workforce were not likely to generate economic stability in the basin or aid town growth.

10.8 Mining and Services in the Fitzroy Basin

Mining activity in the Fitzroy basin was limited until the search for minerals intensified after 1969 with the purchase of pastoral leases in the West Kimberley by large corporations. The search for diamond-bearing country was of paramount importance.

Other projects included oil and uranium explorations (Anderson 1997). Transoil found a miniscule number of diamonds beneath the Lennard River, and other companies found traces around Ellendale Station (Figure 10.14). Geologists with magnetometers flew across the basin in search of mineral deposits, and ground crews were also active. The station people locked their gates and complained but their warning signs were ignored and the gates were breached. Leases in the basin were covered with mineral claims, but nothing of importance was found at the time (Anderson 1997, Matthewson 1997, LeLeivre 1997).

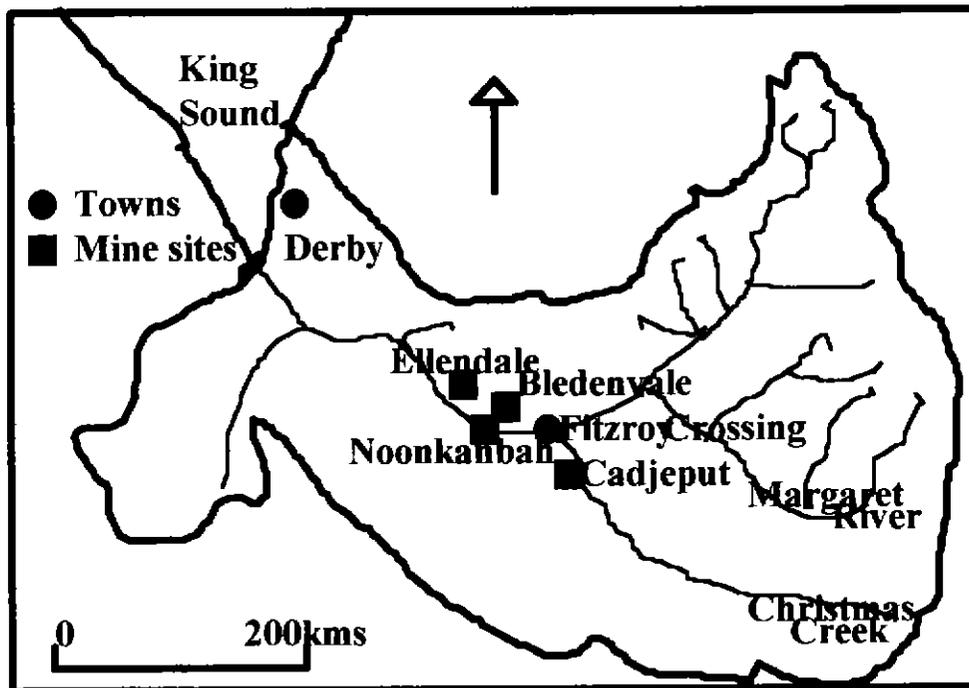


Figure 10.14: Location of mine sites and towns in the Fitzroy basin.

Mining began to expand rapidly however, during the 1990s. Western Metals opened zinc and lead mines at Cadjeput, Goongewa, Kapok and Blendenvale (KDC 1997). The company expected to transport 120 000 tonnes of concentrate annually, first from Wyndham, then from Derby after port development was completed, to markets in Thailand, Korea, Japan and India. Operations were expected to continue to 2008 (Western Metals 1997).

Two towns, Derby and Fitzroy Crossing, serviced the Fitzroy basin. In the early 1950s Derby and its 900-odd people benefited from the commencement of iron

mining at Cockatoo Island and the opening of the Derby Meatworks to service Glenroy Air Beef. During the 1960s, the population more than doubled with the need to house and service road construction workers and mineral exploration personnel (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964, V 1). As part of the North West Consultative Council's development scheme for the transport and marketing of livestock, a new concrete and steel jetty was constructed in 1964, and the Derby West Kimberley Shire offices and civic centre were built (Derby Shire Clerk 1997).

Nevertheless, Derby, with a population of two-and-a-half thousand, remained a pastoral leaseholders' town until the 1980s, when Aboriginal in-migration, mining developments and the tourist trade brought change to the town's functions (Plate 10.13). Mining, offshore as well as inland, made demands on the small port, and further development to cope with the need was under way in 1997, when the population had



Plate 10.13: Clarendon Street, Derby, the main shopping precinct, 13th July 1997

increased to 3236 (ABS 1996). A further source of economic stability was provided by the establishment of the Curtin RAAF Base in 1998, which also served as a confinement area for the numerous illegal waterborne immigrants. Small market gardens in the old

Knowsley Agricultural Area near Derby produced various types of melons and vegetables, with some being trucked to Perth and the remainder sold to local buyers, though major development of that area never occurred (Stevens 1997). The town also serviced the surrounding cattle industry

Possible further development for the town and hinterland was linked to the exceptionally high tides at Derby, which provided the basis for the proposed development of a hydroelectric power station on Doctors Creek, 12 kilometres north of the town (Figure 10.15). The scheme could provide electricity to the towns of Broome, Derby and



Figure 10.15: Plan of the tidal power plant, Source TidalEnergyAustralia 1997
26.

Fitzroy Crossing, to inland mining centres, and pastoral leases (TidalEnergyAustralia 1997). Although the State Government was unenthusiastic and many environmentalists opposed it, the Federal Government, believing the plan had some merit, was funding a feasibility study (Rose 2000).

In the postwar period Fitzroy Crossing had a sleepy existence servicing the surrounding pastoral industry. Then in 1975, the small centre was relocated beside the newly-completed Great Northern Highway, a kilometre west of its former flood-prone site (King Ranch Glenroy Pty Ltd 1975-1982). Development of the new town was of prime importance at the time to meet the needs of Aboriginal resettlement, the mining industry, and the increasing tourist trade. A hospital was constructed in 1976, a police station and court house in 1978, a post office in 1985, and a recreation centre in 1986 (Derby Shire Clerk 1997). With the increasing population, numbers grew from 428 to 1147 between 1981 and 1996 (ABS 1981, 1996). The town now possessed a modern shopping village (Plate 10.14), a light industrial area, extensive health and education facilities, and a

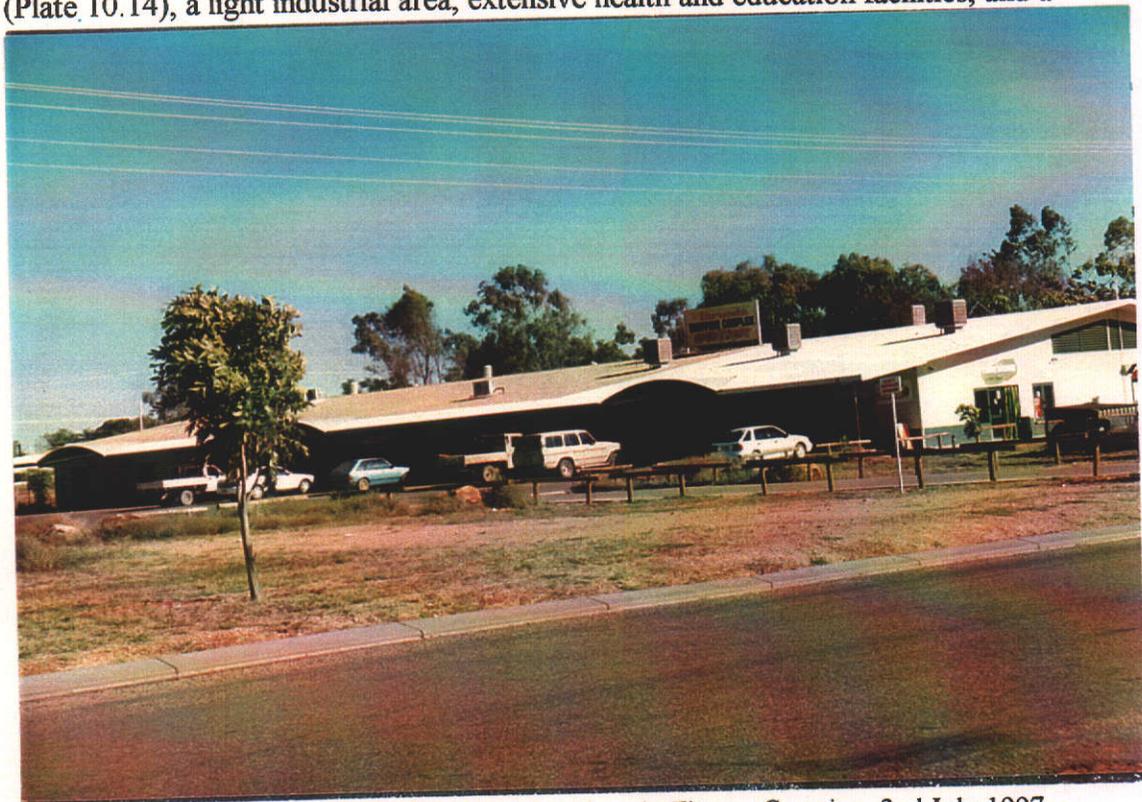


Plate 10.14: The Tarunda shopping village in Fitzroy Crossing, 2nd July 1997

power house, which supplied electricity to Aboriginal communities and the nearby GoGo Station. Other services included an RFDS Base, the Wangki Yupurnanupurra Aboriginal

radio station, a caravan park, and the quite elaborate Fitzroy River Lodge with its camping area, chalets, motel rooms, swimming pool and golf links. Tourist services included scenic flights and safaris. Fitzroy Crossing was playing its part in accommodating some of the 300 000 or so tourists who visited the Fitzroy basin each year (KDC 1997).

10.9 Population Growth in the North West

The development of infrastructure and mining resulted in the North West, experiencing population growth from the mid-1960s. Towns already established had population explosions associated with mining, the resettlement of Aborigines and tourism. The PWD was kept busy building jetties and hospitals, and providing water supplies, sewerage and other necessary infrastructure associated with the booming growth (LePage 1986). As sealed highways replaced gravel tracks, isolation diminished. Traffic increased, with road trains delivering goods and tourists venturing northwards in huge numbers for the first time (Edmunds 1996). In 1967, the population of the North West was 7951. By 1981, it had increased dramatically to 61 761 (Figure 10.16), with the highest concentration in Port Hedland (12 948), and Karratha (8341). Other new mining industry towns of Dampier (2471), Goldsworthy (923), Newman (5466), Pannawonica (1170), Paraburdoo (2357), Shay Gap (853), Tom Price (3540) and Wickham (2387) accounted for most of the population growth. Tourism was responsible for the growth of Broome's population from 3666 in 1981 to 11 368 in 1996 (ABS 1967, 1981, 1996). In that year the region contained almost exactly nine times as many people as it had 30 years previously.

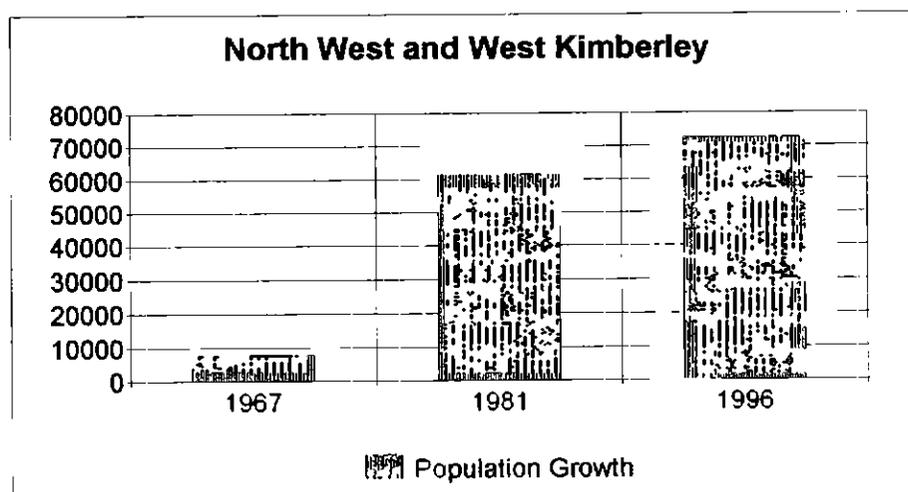


Figure 10.16: Population growth in the North West and West Kimberley over 30 years, Source: ABS 1967, 1981, 1996.

10.10 Communication Lifelines of the North West: The RFDS and Telecommunications

Another important development at the time, and unique to Australia, was the breaking-down of isolation between the towns, the pastoral industry, including that in the river basins, and Perth, by radio and telecommunications and the provision of health services. Largely due to the efforts of the Reverend John Flynn, who founded the Australian Inland Mission (AIM), and with the technical support of Alfred Traeger, a medical communications network with an aerial ambulance service was developed with station personnel operating a short-wave transceiver, commonly called a pedal radio (Miller, 1982, Idriess 1986). The network developed into the Royal Flying Doctor Service (RFDS). As well as providing access to the RFDS, the transceivers also enabled organisations such as the School of the Air to be established, a telegram system for the isolated stations, and a short-wave system enabling them to keep in radio contact with one another. The RFDS was as important to the remote stations, mining areas, Aboriginal communities and towns as the Aborigines had been to the development of the pastoral industry, in its caring for the health, education and social welfare of people in the sparsely populated river basins (Northover 2000).

The first to receive the benefits of Flynn's inovativeness was Derby on the border of the Fitzroy basin, where the Australian Aerial Medical Service (AAMS) commenced operations in 1934 (Shire Clerk Derby 1997). Up on the Kimberley Plateau Gibb River Station was the first to receive a transceiver, linking it with Derby. The RFDS reached the DeGrey basin in October 1935 when Marble Bar's established AIM base enjoyed a regular aerial service from Port Hedland under the popular Dr Vickers (Northover 2000). The first transceiver was installed at the remotest of stations in the DeGrey basin, Warrawagine, in the same year (Miller 1982). By 1936 there were 19 stations connected to the service, including Nullagine and the mining community at Bamboo Creek (Edwards 1993). During World War II radio transmission was transferred from Port Hedland to Marble Bar, though the base remained at the port. At the war's completion, transmission was resumed from Port Hedland (Northover 2000).

Later in 1944 the RFDS established a base at Meekatharra in the Murchison basin, providing medical services to the surrounding pastoral and mining industries within a radius of 800 kilometres and including the eastern half of the Gascoyne basin. By 1956 the base had contact with 61 stations and had sent 13 136 telegrams on

their behalf (Lauren 1997). In 1962 the aerial dental clinic commenced its services through the RFDS base (Edwards 1994). The Gascoyne-Ashburton RFDS was established at Carnarvon in 1951. In 1955 it was communicating with 35 stations in the western Gascoyne and southern Ashburton regions. By 1957 the Carnarvon Local Advisory Committee was fundraising for the purchase of a Cessna aerial ambulance. The base was invaluable during the floods of 1960 and 1961 (Memory 1967). By 1965 it had connections with 76 stations (McDonald 1991), and an aerial dental clinic was also operating (McTaggart 1996). The grassmen and others in the river basins used this service daily, sending and receiving telegrams concerning stock markets, prices, ordering of necessary equipment, and contacting family. The system was more efficient and quicker than by mailruns. The change to solar powered microwave communications in 1983 in Carnarvon, Gascoyne Junction, Meekatharra, Derby and Fitzroy Crossing marked the end of the daily telegram transmission from the RFDS bases, with telephones being installed in remote homesteads (Lauren 1997), but the RFDS bases, stations and communities' radios remained for health, emergency and education purposes (Northover 2000).

The first Western Australia broadcast of the School of the Air reached the isolated children of the Meekatharra RFDS district in 1959. By 1964 transceivers were being hired from the Western Australian Correspondence School and jointly funded by the Parents and Citizens for the School of the Air, the Lotteries Commission and the Education Department (Lauren 1997). Branches of the School of the Air were later established in Derby, Carnarvon and Port Hedland. By the 1990s the School of the Air, with state-of-the-art technology, was operating out of Carnarvon, Derby, Meekatharra and Port Hedland, the transceivers still supplied by the RFDS base at Jandakot, which had always provided technical support to what is claimed to be the largest classroom in the world. Computers were also provided with each School of the Air radio (Plate 10.15) (Northover 2000).

In the 1950s telecommunications lagged behind the radio. The Gascoyne Junction settlement was not connected to Carnarvon until 1952, when the exchange was transferred to Mullewa (Shire Clerk Gascoyne Junction n.d.). In the DeGrey basin the Marble Bar Exchange serviced surrounding stations, including Warrawagine and Bamboo Creek (O'Grady 1995). Unfortunately for the consumers, the service was not part of the national network, and an interstate call could only be made from Carnarvon, a time-consuming and costly 800 kilometres away (Bickerton 1989). A telephone linked

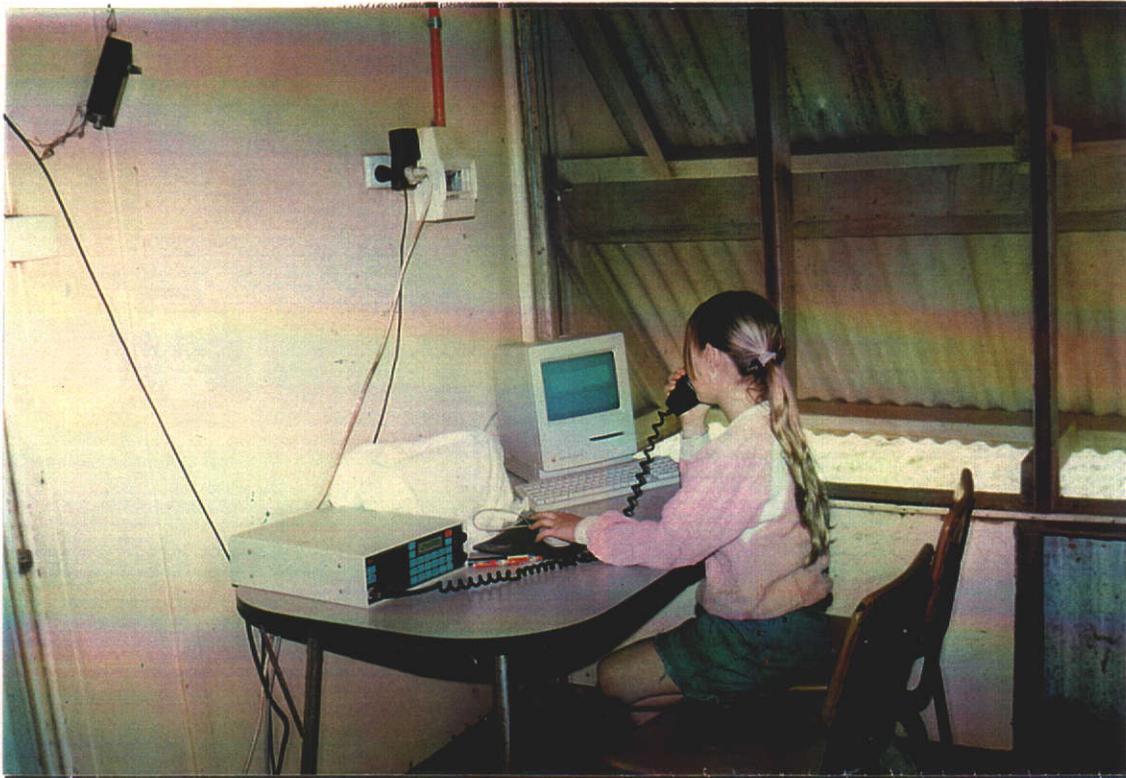


Plate 10.15: Linda Henney of Myroodah Station in the Fitzroy basin talks to her teacher in the Derby School of the Air base while using the computer 12th June 1997

Marble Bar with the Kimberley and the south of the State via Meekatharra (O'Grady 1995).

10.11 Law and Order in the Outback

The police stations and their personnel had passed through many stages since the establishment of the early outposts and depots, but gradually increased in importance as the population grew. In the 1950s regular patrols were conducted in battered vehicles from town bases, competing with other traffic over the rough, corrugated roads and sandy tracks into the vast, isolated areas of the river basins. In the Murchison basin for example, the Meekatharra police conducted annual patrols in their Chevrolet utility, passing through the northern stations of Belele, Moorarie, Mount Gould, Berringarra, Byro, Mount Narryer, Nookawarra and Landor, the latter in the Gascoyne basin. On the southern run they visited Nannine, Gabanintha and Hillview. Officers were responsible for native welfare, child welfare, married women's relief, public health, the issue of vehicle and gun licences, the closure of wet roads, the search for lost individuals,

and at times also acted as Bailiff, Gaoler, Clerk of Courts, Clerk of Petty Sessions, Mining Registrar, Registrar of Births, Deaths and Marriages, Treasury Paymaster and undertaker (Heydon 1994). They were also required to apprehend bird smugglers (SROWA 1964, Cons 3685, Item Vol 3743). In 1964 a new police station, lockup, quarters and other necessary buildings were constructed at Meekatharra and a powerful new radio installed that was connected to the main base in Perth (Heydon 1994).

At Gascoyne Junction the need for a police presence had dwindled after World War II, and the dilapidated police station was closed in 1954. As travellers and workers increased in the district, however, a new brick station was opened on the 10th of February 1969 to cope with the influx of tourists to the scenic spots of the Kennedy Ranges and Mount Augustus, and of hotel-visiting workers from the Dampier-to-Perth natural gas pipeline. The station continued to function in the 1990s (Shire Clerk, Gascoyne Junction n.d.). In the 1950s there was a two-man station at Marble Bar (Edwards 1993). At Nullagine the one-man station had the biggest patrol area in the nation. For the officers of both stations, cattle duffing was an additional preoccupation. It was a difficult crime to prove, and equally difficult to apprehend the culprits (Hugh 1999). Other duties included those mentioned for the Meekatharra patrols. During the 1950s, additional duties for policemen operating out of Fitzroy Crossing and Derby included shooting troublesome Aboriginal dogs, and capturing and returning absconders from the stations (Shandley 1988). In the 1970s officers helped to relocate Aborigines from the drought-stricken Great Sandy Desert into local communities (Woia 1997). The first Aboriginal police aide, Jock Shandley, was employed at Fitzroy Crossing during the same period (Shandley 1988).

By the 1990s police stations had expanded to meet the demands of a greater travelling population, emerging Aboriginal communities and increasing mining operations, with patrols being conducted in large four-wheel drive vehicles, and modern technology providing sophisticated communications systems, including immediate contact with the main police establishment in Perth. Helicopters and aeroplanes provided further means for mounting emergency operations. Thus the pastoral industry in the river basins, after World War II up to the 1990s, benefited incidentally from improved road conditions, increased services with the development of towns and settlements, and better health, education and communication systems.

10.12 Conclusion

Great changes had occurred in the landscape of the North West since the years of the Big Drought, with the region's urban geography being substantially altered and widely separated mining activities with their associated infrastructure also making their mark. In addition, the progression from sandy tracks and stock routes to all-weather bitumen roads had stimulated tourism and generated significant growth in numbers of people employed to cater for visitors' needs. The new mining ventures also swelled the population numbers. As transport technology continued to improve, the region's few railways, which had fulfilled an important function for many years, were replaced by swift and efficient road trains. The new lines which were built in the Pilbara were single-purpose ventures, designed to do little other than move iron ore to modern port facilities. Communications improved overall, effective distance education became readily available for isolated children, and the health requirements of scattered stations and communities were addressed. As far as most of the river basins of this study were concerned, for the foreseeable future at least the mining and tourism industries would continue to grow, population would increase and isolation would be further reduced. The prospects of progress in the DeGrey basin, however, appeared limited, with the burying of obsolete mining towns, the engagement of fly-in , fly-out mineworkers, and the lack of tourism potential.

It appeared that the North West Consultative Council had met at least part of its original objective towards economic development in the region, with the improvement of communications and the construction of major highways and minor roads to encourage its attractiveness to tourists and to facilitate the movement of stock. Indeed, the grassmen and others in the river basins undoubtedly benefited from easier access to markets, goods and services. Though such achievements were admirable and necessary in breaking-down the isolation barriers in a large and comparatively arid North West, there were still no positive plans, either for the regeneration of the natural resources of the drought-stricken rangelands, or for the future security of a financially struggling livestock industry.

Chapter Eleven

Pastoral Landscape and Climate to the 1990s

11.1 Introduction

Despite Fyfe's (1940) recommendations concerning financial and economic aid, little except for the commencement of roadworks was accomplished at the official level over the ensuing decade to attempt to revitalise the pastoral industry. On the other hand, climatic conditions from 1950 to 1960 produced sufficient though variable falls of rain to aid new growth of the native vegetation in the drought-ravaged rangelands. At the same time, noises of concern regarding rangeland condition began to rumble through the government agencies. In 1951 a committee of members from the Department of Agriculture and the University of Western Australia's Institute of Agriculture researched the factors underlying heavy stock losses in the Murchison. High on the list was the vermin problem. Questions of sheep fertility, flock improvements, rangeland regeneration, fodder conservation and rainfall reliability were also investigated. The major problem with the research was its meagre funding and inadequate facilities (Maisey 1979). The North West Consultative Council's auxiliary the North West Committee investigated the Pilbara pastoral industry, which was suffering from the effects of the drought, the Aboriginal strikers, a consequent labour shortage, the abandoned stations and the degraded state of the rangelands, but little was accomplished here either. (SROWA 1959, ACC 1302, AN40/4, Item 2). Speck and others from the Commonwealth Scientific and Industrial Research Organization (CSIRO) examined the rangelands of the West Kimberley, to advise on the feasibility of land settlement for irrigated agriculture, and reported on the deplorable condition of the Fitzroy River floodplains (Speck et al, 1964).

By the late 1960s, experienced Department of Agriculture officers traversed the Murchison, Gascoyne and Ashburton basins, classifying the country into land systems and noting and mapping the degraded rangelands (Wilcox and McKinnon 1972). Leaseholders everywhere were under scrutiny regarding their methods of rangeland management, to the bemusement of the experienced grassmen who, through careful management in depasturing stock, were reviving the rangelands their own way and could scarcely be expected to ruin their livelihood by overgrazing (Maisey 1979) Over the ensuing 20 years there was a slow, lengthy but continuous succession of rangeland surveys and their published findings (*Pastoralism Beyond 2000 Conference* 1996).

Throughout the period, wool prices escalated and fell, the marketing of beef was a major issue, particularly in the Fitzroy basin, leaseholders changed from sheep to cattle in badly degraded areas, and hoped for good sales on the Asian markets. Meanwhile, grassmen struggled to maintain a viable economy in the face of market fluctuations, while company-held leases experienced a succession of managers, or were taken over by other corporations, and a new and damaging breed of pastoral operators, the speculators, sought quick returns from their pastoral interests (SROWA 1965, Cons 3525 (was 211), Item 1356, Vol. 1). During the 1960s, to encourage progress and development, the PB, through its auxiliary the Pastoral Appraisal Board (PAB), introduced the concept of five-year plans. Grassmen, speculators and managers of company-owned leases were required to outline on maps any planned developments and changes pertaining to their properties. All leaseholders were also requested to submit their annual lists of shareholders (All SROWA references listed). In 1967, to further aid the pastoral industry, lease tenure was extended to the year 2015 under the Land Act Amendment Act 1963 (SROWA 1965, Cons 3525, Item Vol. 1019, V 1)

11.2 The Wool Boom, Beef Marketing, Station Infrastructure and Stock Numbers

During the 1949 and 1950 wool sales the average price of wool was £88 6s. 0d per bale. The invasion of South Korea by Communist forces in 1950 triggered-off a wool-price boom, with the United States authorities requiring 600 000 bales for their military. In 1951 the price escalated to an average of £175 13s. 1d. per bale. Such was the demand for wool that it exhausted Australia's World War II stockpile of seven million bales within 18 months. By 1958, however, the wool price had dropped to 46.5d. per pound (8s. 6d. per kilogramme), as part of the worldwide general trend of decline in the price of raw materials. Grassmen were also confronted with strong competition between wool and synthetic fibres (Maisey 1979), something that Fyfe (1940:696) had predicted. The price rose, however, after decimal currency was established during the 1960s, to reach 104 04c a kilogramme in 1979 (Maisey 1979). During this period, significant developments in the marketing of Kimberley beef were also taking place.

In 1949 the Air Beef Scheme, which was the first of its kind in Australia, was established by the Blythe family at Glenroy Station on the headwaters of the Fitzroy River on the Kimberley Plateau. Carcasses were flown by ex-RAAF Dakota and Bristol

freighters first to the Wyndham meatworks, and later to Derby after the opening of its meatworks (Blythe 1946-1954). The meat was for the local market and ration-bound Britain (Maisey 1979). By 1958 the scheme had expanded, with local deliveries to Wyndham, Darwin, Port Hedland, Roebourne, Wittenoom, Onslow, Carnarvon and Perth. Thirteen hundred tonnes of beef and 67 tonnes of offal were transported in 1961 in 273 flights over 20 weeks, from 5695 slaughtered cattle. The following year Air Beef production slowed due to the construction of the Gibb River Road over the inhospitable King Leopold Ranges, enabling the trucking of cattle to Derby. In 1963, Air Beef transported its beef to Derby by refrigerated trucks, but was operating at a loss and in 1965 the company folded. The Glenroy Abattoirs continued to function however, for several more seasons, with beef trucked to Derby for approximately \$25.00 a tonne (SROWA 1964, ACC 3458A, MN 1158).

Table 11.1 reflects the growth of the cattle industry from 1950 to 1969, particularly in the Upper Gascoyne and Gascoyne-Minilya region, the Ashburton, the Hamersley Tableland in the Fortescue basin, and the Nullagine area in the DeGrey basin.

CATTLE NUMBERS	1950	1969
Murchison	19 751	20 406
Upper Gascoyne	9770	13 878
Gascoyne-Minilya	612	4 111
Ashburton	3447	10 327
Hamersley Tableland	1664	11 012
Marble Bar	19 476	6813
Nullagine	567	10 809
West Kimberley	157 883	258 907
TOTAL	222 170	336 263

Table 11.1: The growth of cattle numbers in the North West.

Source: *W.A. Statistical Register* 1950, 1969.

By far the highest growth of nearly 100 000 head was in the West Kimberley, where the changeover from sheep to cattle was a major development. Table 11.2 depicts the relative stability of overall sheep numbers in the North West, with quite substantial growth in the Murchison and Gascoyne basins, but declines elsewhere, including a reduction of over 46% in the West Kimberley (W.A. Statistical Register 1950, 1969). Numbers had dropped by over 213 000 in the 13 years since the end of the Big Drought, due not only to the depleted rangeland resources, but also to the changes in the sheep industry of the North

SHEEP NUMBERS	1950	1969
Murchison	462 418	575 928
Upper Gascoyne	252 126	261 745
Gascoyne-Minilya	401 146	435 122
Asburton	267 869	242 673
Hamersley Tableland	51 364	45 143
Marble Bar	126 665	68 178
Nullagine	81 623	53 298
West Kimberley	141 559	75 847
TOTAL	1 784 770	1 757 934

Table 11.2: Sheep numbers of the North West from 1950 to 1969.
Source: *W.A. Statistical Register* 1950, 1969.

West. The pastoral industry never regained the sheep numbers of the 1920s and 1930s (Table 2.3), though overstocking from speculation led to an increase in flocks on some leases.

During the postwar period labour and materials were hard to procure, and repair and maintenance work and stock management were continued on a financially reduced scale, exacerbated by the fluctuating markets. From the 1950s to the 1970s, however, work on the leases continued, though employees were increasingly difficult to secure, particularly when mining developed on a large scale in the North West (Maisey 1979). Employees and shearing teams were hired through a Perth-based employment agency (Billabalong Station Day Book 1966-1972) - a task later taken over by the Employment Division of the PGA (Hayter 2000). From the 1950s to the 1960s, grassmen continually called for replacement stockmen, musterers, rouseabouts, governesses, cooks, domestic servants, mechanics, windmill men and gardeners (Billabalong Station Telegram Book 1966-1983). The Award of 1966, with its insistence on white men's wages for all, discouraged the continued employment of Aborigines, many of whom left the stations and moved to reserves. In the DeGrey basin most of the Aboriginal workers had already left to join the strikers. Grassmen were being forced to rely on inexperienced and inferior white labour from coastal towns and from the South West. As new methods of station management and modern mechanisation developed, however, the need for a large workforce declined. In the 1990s most grassmen managed their leases themselves, employing staff only for the duration of mustering (Steadman 1996b, Officer 1996b, Mills 1997b).

The advance of mechanization saw the demise of the horse in the North West, though it remained very much in use in the Fitzroy basin. During the 1960s aerial mustering using helicopters and light aircraft, with mostly a ground crew using four-wheel drives and motorbikes, revolutionised station management by replacing the time-consuming horse mustering plants as trucking had replaced the drover, bringing about the closure of most of the manned outcamps. The noted pioneer of helicopter mustering, John Roulston of Glen Florrie Station in the Ashburton operated from the Murchison to the Fitzroy. In 1970 Roulston's pilot Hugh Mclean mustered Billabalong's sheep in the Murchison in March, then flew to Warrawagine in the DeGrey in the same month for a stock muster (Billabalong Station Telegram Book 1996-1983). When I visited the basins in the late 1990s, grassmen and managers on stations such as Brick House, Yallalong, Bidgiemia, Landor, Three Rivers, Warrawagine and DeGrey, flew their own aircraft to muster stock and employed a ground mustering team driving bull buggies, motor bikes, and four-wheel drive vehicles. Harris of GoGo Station in the Fitzroy basin owned two helicopters and permanently employed the pilots to fly them (Harris 1997).

By the 1970s economic downturn, technological change, shortage of labour and the change from sheep to cattle had made the large homestead complex obsolete. Many of the outbuildings such as employees' quarters, Aboriginal housing, staff kitchens, saddle rooms, harness rooms, wagon sheds and blacksmith shops were no longer required, particularly with the change from the more labour-intensive sheep management to cattle enterprises. The structures were either pulled down, or used for storage. At Myroodah Station in the Fitzroy only traces remained of many of the buildings that comprised the homestead complex of the earlier sheep-rearing years, and the wool shed had become a convenient workshop, storage base and fuel depot (Plate 11.1) (Henney 1997).

Following the completion of the sealed Geraldton to Carnarvon Highway in the 1960s, however, visitors travelled to the North West by the thousands to the towns, the coast, the rivers and the scenic spots. Some grassmen, such as Pollock of Wooleen in the Murchison (Pollock 1996a,b) and McAlary of Mount House in the Fitzroy (McAlary 1997a), diversified with station stays, being granted special leases by the Minister for Lands under Section 116 of the Land Act. Station stays were a lucrative business and contemporary grassmen were lobbying to have their homestead areas declared freehold so

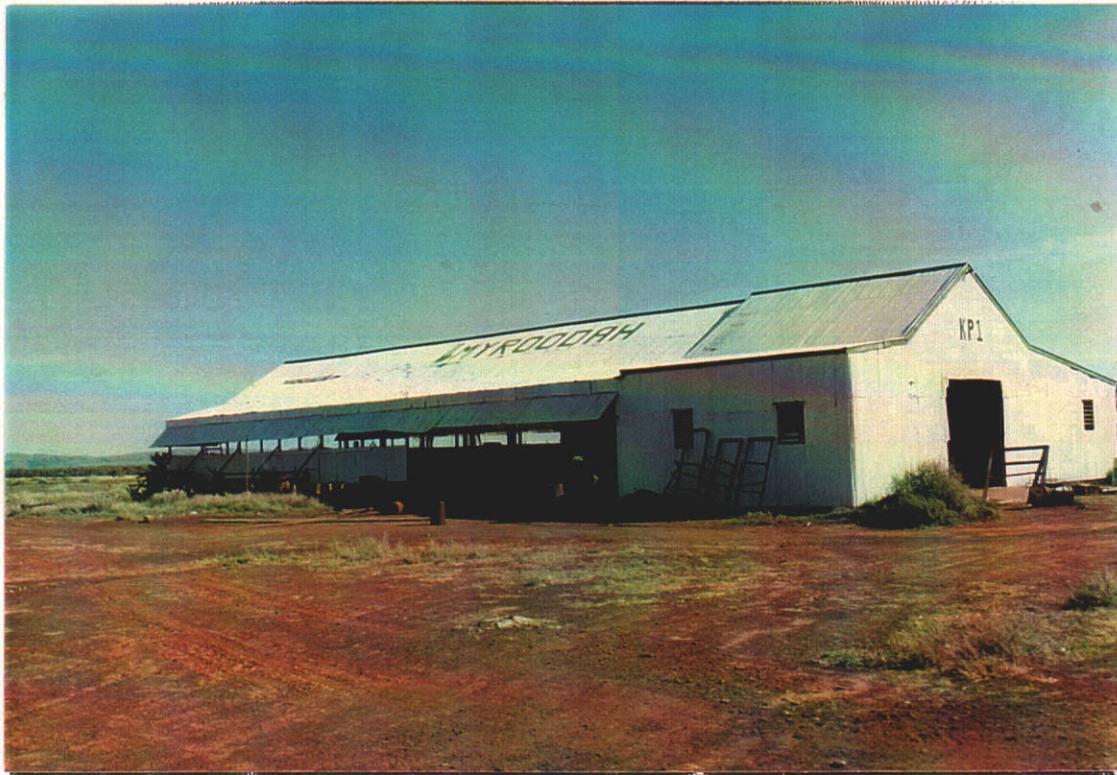


Plate 11.1: Myroodah Station's obsolete wool shed.

that station-stays could be a full-time business, while continuing to run their pastoral enterprises under leasehold tenure (Richardson 2000).

11.3 Rangeland Degradation and Rehabilitation

Throughout the 1950s, repair and maintenance programs on the stations in the river basins were executed by most grassmen and managers. During the heady years of the 1960s and 1970s, however, leases frequently changed ownership and some stations were seriously and deliberately overstocked with consequent land degradation, much to the disgust of the grassmen (Barndon 1996b, Steadman 1996b). Wealthy speculators, many of whom also owned farms in the South West, were mainly responsible. Their activities prompted further surveys into the basins by the PB pastoral inspectors to determine stocking rates and development, maintenance and management of leases, and to devise further ECCs for the various overstocked and badly-degraded stations. At the same time Department of Agriculture officers, also in the field, devised a more equitable ECC format based on the rangeland condition of each land system and paddock (SROWA 1964, Cons 3525, Item No Vol 3504, VI, Wilcox and McKinnon 1972, Payne et al 1988). Unfortunately the PB inspectors' reports and the surveys of the Department of Agriculture attributed rangeland degradation entirely to mismanagement, ignoring the effects of the

Big Drought still apparent on the landscape (Price 2000), thus lumping the degraded, overstocked leases with the slowly-recuperating leases of some grassmen, much to the latter's annoyance (Barndon 1996b, Officer 1996b, Steadman 1996b, Bettini 1997). Dead mulga trees for example, were still conspicuous on the landscape during the 1990s, as well as bare and scalded landscape where mulga had been cut down to feed starving stock (Halleen 1997, Price 2000, Field Trips 1996, 1997).

In the 1970s, to aid regeneration and monitor progress of plant growth, the Western Australian Rangeland Monitoring Site (WARMS) technique was developed by the Department of Agriculture. WARMS involved the photographing of selected degraded sites where markers were placed, then monitoring the changes (Hacker et al 1992), a task carried out by the grassmen and managers and reviewed every three years by the Department of Agriculture (Jeffries 1996b, Bettini 1997, Addison 1997). Monitoring sites had been established in the Kimberley since 1972, and in 1997 there were 450 of them (Addison 1997). Some badly degraded areas, such as on Billabalong in the Murchison, and Dalgety Downs in the Gascoyne, were fenced-off from foraging stock (Jeffries 1996b, Kaluder 1996). Experienced grassmen faced the dilemma of coping with PB demands, recommendations of the Department of Agriculture and rangeland regeneration after deliberate overstocking by ruthless speculators, and of running a viable industry for their own economic survival.

11.4: Case Studies in Rangeland Management

11.4a Murchison Basin

In the Murchison basin during the speculative period of the 1960s and 1970s accelerated soil erosion was widespread through the loss of perennial plants, the commonest form being scalding and sheet erosion of denuded surfaces from wind and water. Climatic influences dictated carrying capacity through their impact on rangeland resources. The driest years in the Murchison basin were 1950, 1954 and 1959 (Figure 11.1). In 1952 Yallalong received well-above average rainfall that was distributed over the whole year apart from December. Its neighbours by contrast, experienced a normal year. Even so, the falls were significantly higher than those experienced during the Big Drought (Figure 9.6) (McCall 1999). Given such average falls, the rangelands were able to demonstrate their capacity to rejuvenate throughout that period. Vermin was still a serious problem, with grazing pressure from sheep and cattle covering less than 50% of the

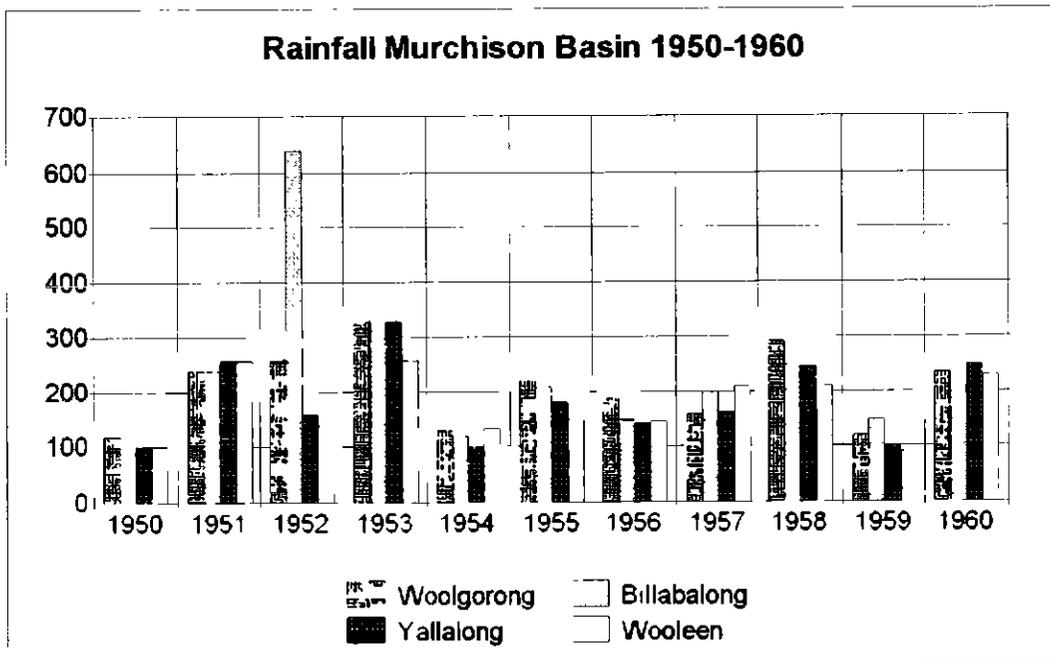


Figure 11.1: Rainfall over a ten-year period in the Murchison basin portrays a relatively even distribution between the stations except for Yallalong in 1952. Source: McCall 1999.

region. (Curry et al 1994). Overstocking exacerbated the situation. Yallalong Station (Figure 11.2) provides a case study of degradation and recovery.

After many years of operation, the Mitchell family sold Yallalong in 1955 to the Rubin group (SROWA 1957, Comap Box B, 0512, No 57). Under the management of Rodney P. Lockyer, the lease carried a conservative 10 000 to 15 000 head of sheep from 1955 to 1959 (SROWA 1956, Comap Box 56, Item 15). The only cattle were milking cows. (SROWA 1956, Comap Box 56, Item 9). In March 1961 speculator Eric Fitzgerald, who also held Mount Padbury near the river's headwaters, purchased the lease from the Rubins (SROWA 1964, Cons 3685, Item Vol 3743). In a decade when experimentation was popular, he attempted to grow wheat, which yielded six bags to the acre (0.4 hectares). The winter was too dry for the subsequent crop and the experiment was abandoned. Disgusted with the failure, Fitzgerald sold to Donald Davey from Melbourne in 1966, who died on the station in tragic circumstances later in the year. Experienced grassman Vaughan Barndon managed the lease until its sale in 1969 to another speculator Leslie Schubert and his family (Barndon 1996b), who also held

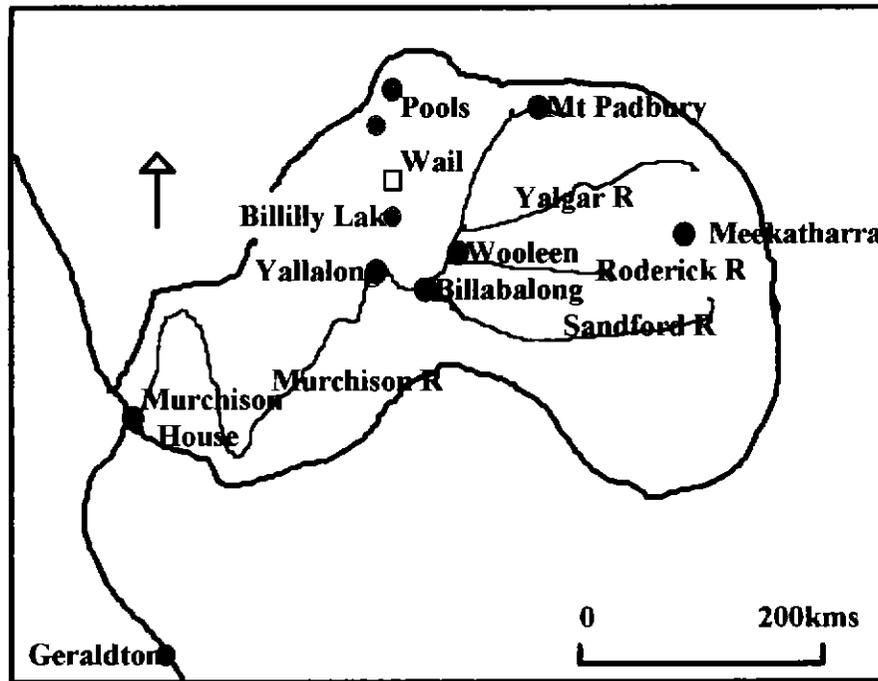


Figure 11.2: Location of stations under study in the Murchison basin

interests in the Australian Land and Cattle Company's (ALCCO) Louisa Downs in the Fitzroy basin, Dalgety Downs in the Gascoyne, land in the South West and interests in the fishing industry (SROWA 1964, Cons 3685, Item Vol 3743, V1).

By the early 1970s the lease was described as being heavily overstocked, with poorly maintained watering points. Few of the 47 paddocks and nine holding paddocks were stock-proof (SROWA 1964, Cons 3685, Item Vol 3743, V 1). Schubert had 22,000 sheep and 1400 cattle, of which approximately 650 were running wild at Wail Outcamp (Barndon 1996b). Seven years later in 1976, the Schuberts sold the run-down, overstocked and degraded lease to the mining company Wright Prospecting Pty Ltd for \$288 685.50. There were 22 000 sheep, 750 cattle and 20 horses on the lease at the time. Rangeland scientist from the Department of Agriculture G.W. Kennedy inspected the lease after Wright's purchase in the same year. Kennedy, with colleague J.R. Fenwick inspected the lease again in April 1978. Both reports stated that the river vegetation was in a degraded condition. Fencing and windmills were in poor form with tanks and troughing almost non-existent. At the time of the inspection, Wright Prospecting had cut back sheep numbers to 11 000 and increased cattle to 1 000 head. When in good condition the lease

had a high carrying capacity of one sheep to eight hectares on the saltbush river country. In its 1978 degraded condition the ECC was one sheep to 18 hectares, except in the Woodrarrung Range, Badgeradda Hills and breakaway country, where it was even less (SROWA 1964, Cons 3685, Item Vol.3743, V 1).

Wright Prospecting spent 17 years endeavouring to remedy the rangeland degradation by maintaining cautious stocking rates (SROWA 1964, Cons 3685, Item Vol.3743, V 1). The operations, however, were run at loss of approximately \$2000 per year. The company sold to Barndon in 1993 for \$600 000. Barndon continued the conservative stocking rates and, aided by some good seasons, the country regenerated by natural processes. In 1995 Barndon commenced a program of herd improvement to access the Indonesian market. He purchased a Droughtmaster bull for \$2800 in 1995, and another in 1996 for \$3000 at the Narngalu Bull Sales. The bulls were put over Hereford cows. Feral goats coming in from the nearby national park provided a lucrative income of approximately \$60 000 annually, which paid the station's yearly fuel bill. They were exported to Taiwan (Barndon 1996b). In 1998 wool was paying \$10 a kilogramme from the stockpile and Yallalong was holding its own (Barndon 1998). In 1999 sheep were grossing \$28 a head, with Barndon receiving \$14 after meeting freight and other costs, with the more lucrative goats at \$14 each on the Malaysian market (Barndon 2000).

Other leases in the Murchison were also run down by speculators. Since its sale in 1962 by the long-established Campbell family to speculators from the South West, who in turn sold it to another group, the Billabalong rangelands suffered from overstocking (SROWA1965, Cons 3525, Item 1902, V 1). In 1991 the Department of Agriculture contour-ploughed a considerable area of land for regeneration purposes. In 1994 the badly degraded lease was sold to grassman Pete Jeffries and his wife Kate, who inherited the degradation but, with conservative stocking rates, were witnessing rangeland regeneration through good seasons and the Department of Agriculture's rehabilitation efforts (Jeffries1996a,b).

As an example of the official inability to ascertain an accurate ECC, the Sharpes of Wooleen were refused rent relief and the Transport Freight Concession subsidy by an inconsistent PB in the 1970s. They were informed that the station was seriously overstocked, with 15 182 sheep and 324 cattle, and had been for some years. Five years previously, and in a good season the PB had ruled that the lease was understocked with its 17 000 sheep and 289 head of cattle (SROWA 1964, Cons 3525, Item Vol. No. 3504, V 1)

thus showing lack of wisdom and knowledge of what was an adequate and economic ECC.

On the Murchison headwaters, Billy Martin's Mount Padbury had been held for a number of years by the Yallalong speculator Eric Fitzgerald until its sale to the Garritys in 1972, when wool prices had dropped. Fitzgerald had also overstocked this lease with sheep, no doubt to take advantage of the high wool prices of that era. The Garritys, however, commenced phasing-out sheep in the late 1980s in favour of cattle, due to previous land degradation at the hands of Fitzgerald, depressed wool prices and high freight costs. In 1996 there were 1700 left, which Garrity expected to be gone by 1997 (Garrity 1996).

As an example of careful management, the capable grassman of Woolgorong, James Officer, continued improvements of the Lee-Steeres' old lease, carrying conservative stock numbers of approximately 10 000 sheep for many years and within ECC requirements. However, Officer would sell stock during a dry period, then purchase more sheep during good seasons (SROWA 1918, Cons 1384, Item Vol. 1735). His son Ted, with the help of his wife Meg, carried on the tradition (Officer 1996a,b)

11.4b Gascoyne Basin

The 10 years from 1950 to 1960, while leases in the Gascoyne basin were under repair and maintenance, were mostly good seasons, which helped rejuvenate the drought-ravaged rangelands in some areas. Variability of rainfall, as was normal, was quite pronounced, where dry spells were recorded, with 1950 and 1959 the driest years for the leases under study, and 1956 recording the lowest rainfall for Three Rivers (Figure 11.3) (McCall 1999). Whilst Rutter of Landor was complaining of stock losses and grass-depletion and was refused rent relief, the neighbouring Mount James received assistance for the three-year duration of the dry period, though fewer losses were recorded, the PB preferring to reward a more diligent manager in terms of their ECC, than a lackadaisical one (SROWA 1936, ACC 541, AN3/6, Item 2258). A neighbour of these leases, Dalgety Downs, received the highest fall of 170mm for that year (McCall 1999).

In March 1960, a dry spell broke when a cyclone struck Carnarvon with high winds and teeming rain, demolishing homes and buildings, overturning caravans, uprooting trees and tangling power lines. Heavy rain fell on the stations upriver and the

Grascoyne River flooded, the water racing under the North West Coastal Highway Bridge near Carnarvon at an estimated rate of five million litres a second (Memory 1967, Water and Rivers 1996). Figure 11.3 portrays the high rainfall for 1960 received on selected

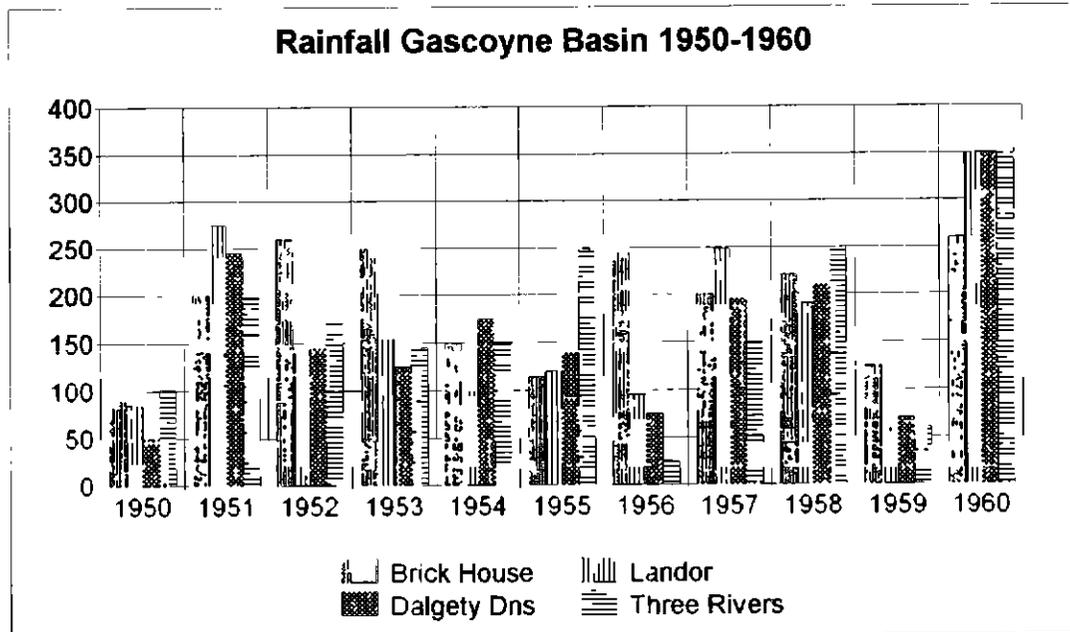


Figure 11.3: Rainfall across the Gascoyne Basin. 1950 and 1959 were very dry years for the basin, with 1956 a dry year for Landor, Dalgety Downs and Three Rivers. Source: McCall 1999.

stations. Debris and floodwaters covered the roads rendering them impassable (Edmunds 1996). In February 1961 Carnarvon was evacuated when another cyclone passed over the town, isolating it for two weeks.

Another prolonged dry spell which commenced in 1974 was considered by at least one manager of a badly-degraded lease to be as severe as that of the Big Drought. Terry Hall, managing Landor Station for the Viveash family at the time, resorted to shooting starving cattle. At one stage he burnt 400 dead animals in heaps. He complained that there was no feed on the rangelands, the stock was too poor to be sold and not worth sending south on agistment (Zekulich 1977). It would appear to be a case of bad management by Hall to be caught in such a way, when trucking facilities for transporting stock from a property were far superior than those available during the Big Drought. Landor lost 6269 sheep and 818 head of cattle from the paucity of feed. Furthermore, dingoes were particularly troublesome, placing the sheep at risk (SROWA 1964, Cons

3525, Item Vol 3376). Other leaseholders reported dry conditions in the basin, but Chief Pastoral Inspector R.J. Johnson, an old hand of pastoral and rangeland affairs, blamed the leaseholders for not adjusting stock numbers earlier during a period of limited rainfall (SROWA 1965, Cons 3525, Item Vol 1019, Vol. 1). Indeed, the 1960s and 1970s were a period of substantial overstocking by many Gascoyne operations.

Leases in the Gascoyne basin (Figure 11.4) finally underwent rangeland inspection following the severe flooding of Carnarvon in February 1961, prompting an inquiry into the basin's soil and vegetation condition. In June 1969 a joint survey team consisting of members of the Department of Agriculture and DL&S, investigated the conditions on 33 stations and recommended changes to the PB's ECC, which ignored special needs of the pastures of the various land systems. The unrealistic stocking rates set by the PB were at last being officially challenged, after the experienced grassmen had been reporting reduced carrying capacity for the 25 years since the Big Drought. The joint survey report recommended that grazing stock be withdrawn from a severely-eroded

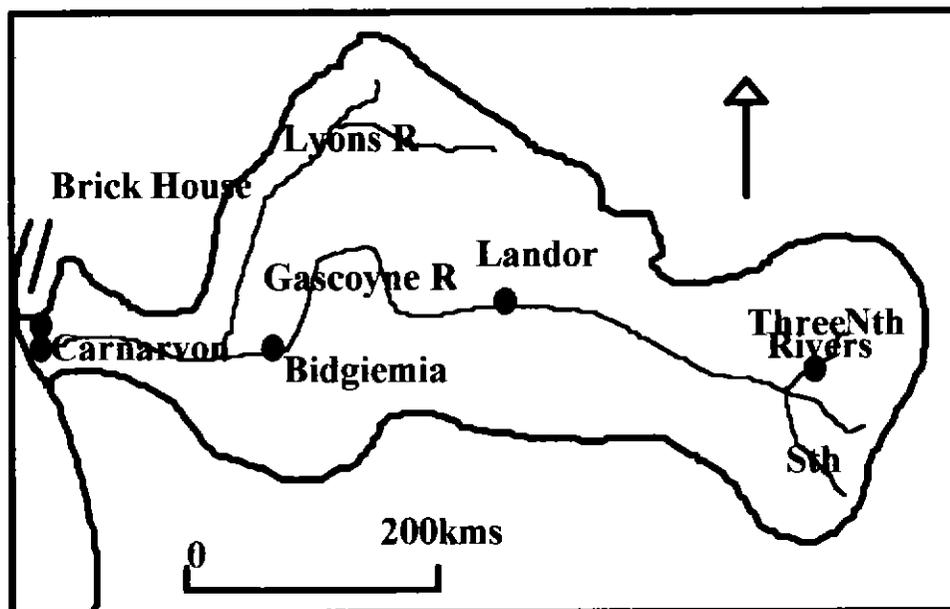


Figure 11.4: Location of stations under study in the Gascoyne basin

9324 square kilometres, and that stocking rates on a moderately eroded 37 296 square kilometres be reduced (Wilcox and McKinnon 1972). As well, 23% of the Carnarvon artesian basin was considered to be in poor condition at the time (Payne et al 1987).

The official attitude toward the degraded Landor Station exemplifies the extent to which the PB was out of touch with the real situation. During the 1950s the property was managed by Rutter, who complained in 1954 of dry seasons. He reported the loss of 5295 sheep and 20 cattle, with no lamb increase for that year, which, he claimed, was the driest in the decade for the station, recording 100mm. He also continued to lose stock through the shortage of natural grasses (SROWA 1936, ACC 541, AN3/6, Item 2208). Thus the country had not picked up after the Big Drought. Despite his complaint, Rutter was refused rent relief, and admonished for understocking and badly managing the lease (SROWA 1936, ACC 541, AN3/6, Item 2208). The Viveash family purchased Landor and was confronted with the ECC dilemma. Nevertheless the PB continued to insist that Landor, and several other leases in the basin were understocked.

The station comprised some 346 036 hectares and carried 21 916 sheep, 1225 cattle and 73 horses during the mid 1960s (Figure 11.4). The Board's ECC for Landor was 30 000 sheep and 2000 head of cattle (SROWA 1964, Cons 3525, Item Vol 3376), whilst rangeland scientists Wilcox and McKinnon (1972:5.30) recommended only 18 650 small animal units, (which was well below one-half of the ECC) and the withdrawal from grazing of at least 333 square kilometres of former saltbush land south of the Gascoyne River. They also informed the PB that the station's Granite Paddock was inadequately watered and fenced. Consequently the PB refused to accept the station's five-year plan unless watering points were developed. Once again the city-based agencies, responsible for the welfare of the rangelands, showed little knowledge of the country they were responsible for, including the rangeland scientists. The Viveash family pointed out that hydrologist O'Driscoll and the station's competent water diviner both reported that Granite Paddock was on granite and that no underground water was available (SROWA 1964, Cons 3525, Item Vol 3376, Vol 1).

After the death of the leaseholder in unfortunate circumstances during the early 1970s, disheartened Viveash family members sold the station to Joe de Pledge later in that decade. The new owner, aware of the rangeland condition, dispensed with the sheep in favour of cattle following a three-year dry period, then sold to Jimmy Thom about 1988, who in turn sold to the McCusker family in 1993. Thus the lease changed hands quickly as neither de Pledge nor Thom was financially equipped to rehabilitate the lease. The McCusker family, financially more secure, operated as the Martindale Pastoral

Company. Under the instructions of this environmentally-aware organisation, the manager and employees fenced off the river frontages, pulled up old sheep fences, and generally worked at conservative stocking rates to aid land regeneration. In 1996, new rangeland management methods were introduced with no more than 3000 head of cattle on the lease at any one time. Marketing cattle were sent to the McCuskers' Boolardy lease in the Murchison prior to selling, and heifers for breeding brought back to Landor. Breeders of up to eight years of age were held on Landor, and steers sold at two years. Similar to other operations in the river basins, new breeding plans using Murray Grey bulls to put to the Santa Gertrudis-Shorton heifers in an endeavour to capture the Indonesian markets were introduced (Halleen 1996).

At the Gascoyne River's lower reaches, Brick House, held by the Burt family for over 100 years, had fewer rangeland problems regarding degradation. Their problem was of another kind. Continual excisions from the lease worried Richard Paull Septimus Burt, MLA for Murchison-Eyre and member of the family company, as good saltbush pasture was being alienated for agricultural and town purposes (SROWA 1955, Cons 1755, AN3/9, Item 2908). In the 1960s and 1970s thousands of hectares of land were resumed (SROWA 1964, Cons 3525, AN3/20, Item 2234, Vol 2&3). Meanwhile, through careful station management by successive family grassmen, degraded areas were rehabilitated, with only the eastern Stock Route 21350, and another that came down from the northern stations, causing concerns (Payne et al 1987). A member of the Burt family still held the lease in 1997 (Burt 1997).

A more questionable system of pastoral management was being developed on Three Rivers Station in the basin's headwaters. It had previously been the victim of mismanagement and overstocking when the lease was held by the Meehan family, whose managing director lived on a farm in the State's agricultural area. The company also held Austin Downs Station in the Murchison, and land in the South West. The station was operated by a manager and considered an established lease, which was under a repair and maintenance program throughout the 1950s when adequate rainfall would have helped rejuvenate the drought-stricken pasture (Figure 11.4). By 1970, however, the property carried only 8957 sheep, 20 horses, and had cattle on agistment, with Meehan claiming that the station was experiencing a severe drought (SROWA 1965, Cons 3525, Item Vol 1019, V. 1). Wilcox and McKinnon (1972) inspected the lease in the same year and recommended that 65 786 hectares of chenopod pastures were to be removed from

grazing, knowing that it could take many years for the perennials to recover. Nevertheless their ECC was 14 000, well above what the run-down lease was carrying.

In 1971, proposed improvements included 288 kilometres of boundary fencing and 560 kilometres of internal fencing, which would result in a further division into 24 sheep paddocks equipped with mills, tanks and troughing. In that year also the lease was up for sale. The Chief Pastoral Inspector R J Johnson reported that the lease was of a sound economic size but, due to rangeland degradation and mismanagement, would function better as a cattle unit. Meehan, however, was experiencing financial difficulties and the intended improvements were not forthcoming. In the following year the station was still on the market with a manager and one employee on reduced salaries. Meehan was considering abandoning the station as it was heavily committed to Elders Goldsborough Mort and Co (SROWA 1965, Cons 3525, Item Vol 1019, V. 1). By June 1973 the recommended grazing restrictions were in force, with prime river frontage closed to stock (Wilcox and McKinnon 1972).

In April 1979 Meehan finally sold the station to speculating Meekatharra road contractors Roder, Mead and Boys (SROWA 1965, Cons 3525, Item Vol 1019, V. 1). After running at a loss for twelve years, they sold to the Forsythe family, who in turn sold in September 1992 to Plutonic Operations Limited, which had opened a gold mine there. They sub-leased the station back from Plutonic to run stock in a family operation with their three sons as the Beefwood Pastoral Company (Forsythe 1996a). The Forsythes also held three farms at Enneabba. Cattle on all properties were mostly South Devon-Shorthorn cross and were regularly mustered and culled, with all young bull calves castrated except those selected for breeding. The calves were then sold the following year direct from metropolitan abattoirs to selected restaurants and butchers in Perth, and exported to Japan. Breeding Shorthorn cows were usually kept until they were around eight years old, then they were sold. The maximum number of South Devon bulls on the lease in 1996 was 74 (Forsythe 1996b).

A new type of relatively inexpensive rangeland management commenced with cattle movements controlled by small turkey dams at bores 30 kilometres apart and checked from an aeroplane every two to three days. A member of the family would return by vehicle with a pump to activate the bore if a dam needed filling. According to John

Forsythe, such an operation restricted the movement of vehicles over the degraded and eroded landscape and the cattle were easily manageable (Forsythe 1996b). Grazing areas were rotated by opening and closing bores as seasons dictated, with 70,000 hectares being shut down at a time. Two holding paddocks were all that was required for mustering cattle. Even boundary fences were a thing of the past (Forsythe 1996a). Allowing cattle to range over millions of hectares without any control except watering points is a dubious practice, as the animals are notorious for wandering along river courses when the seasons are good and may finish up on anyone's rangeland. Not surprisingly AGWA frowned upon the practice (Mitchell 1997). Neighbouring operators were also practising the same rangeland management system, and would sort one another's cattle out after mustering (Forsythe 1996a). Some rangeland regeneration was occurring, with the common *Ptilotus obovatus* (cotton bush) in abundance (Field Trip 1996).

11.4c Ashburton Basin

The 10-year period from 1950 to 1960 portrays the typical variability of rainfall in the Ashburton basin (Figure 11.5). The driest years were 1950 and 1959. A

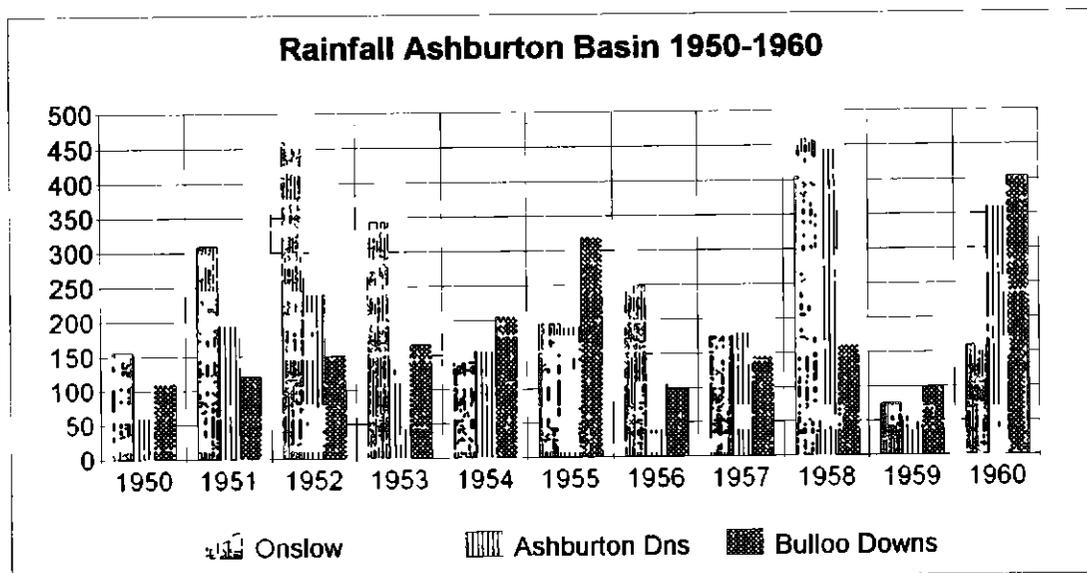


Figure 11.5: Rainfall figures across the Ashburton basin depicts its variability McCall 1999.

series of cyclones during the 1950s and 1960s earned Onslow the title of Cyclone City (Webb 1983). In March 1953 a cyclone severely damaged the jetty, which subsequently required 240 new piles (LePage 1986). Cyclonic rain appeared not to have travelled far

inland, as Ashburton Downs recorded only 290mm and Bulloo Downs on the headwaters 150mm (McCall 1999). According to Webb (1985) another cyclone struck the town in 1955 though rainfall figures appear to argue against the claim as the town recorded only 200mm, with Bulloo Downs on the headwaters recording over 300mm (McCall 1999). Two cyclones lashed Onslow in March 1958, extensively damaging the jetty once again and eroding the foreshore. A storm surge also inundated the low-lying areas of the town (LePage 1986). Onslow received 460mm and Ashburton Downs also benefited from these cyclones, recording over 400mm, whilst Bulloo Downs received a miserly 155mm (McCall 1999). Three cyclones battered Onslow in January, February (which also lashed Canarvon), and March of 1961, resulting in 1600mm of rain in six weeks. The rainfall flooded 96 kilometres of the North West Coastal Highway, caused extensive damage to the town and port, and demolished the jetty. An accompanying severe storm surge flooded the town as well. The PWD, no doubt fed-up with continual jetty-repairs, refused further reconstruction, and a lighter service commenced at Beadon Creek, which was dredged for ease of navigation. Following the cyclones, in 1966 a substantial sea wall, costing £80 000, was constructed fronting the ocean-side of the town to hold back storm surges (LePage 1986). The highway was subsequently re-aligned away from Onslow (Edmunds 1996).

A study of selected stations in the Ashburton basin (Figure 11.6) to the late 1990s suggests that there had been little improvement since the Big Drought, with

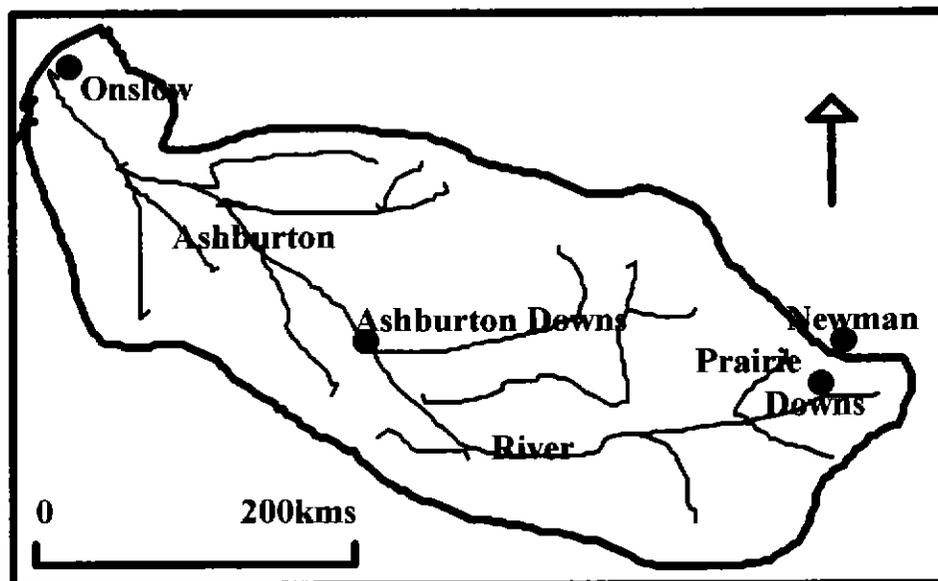


Figure 11.6: Location of stations in the Ashburton basin

absentee owners unwilling to input the capital necessary for improvements, and some resident leaseholders lacking the necessary resources to regenerate the run-down properties. Little rangeland rejuvenation had been attempted and, with lack of return for company investment with the deterioration of the rangelands and with the forced reduction of stock numbers, leases were frequently sold. Finally, from 1976 to 1978, when it appeared that the pastoral industry in the basin was going from bad to worse, rangeland scientists conducted a survey. The basin at the time contained 30 pastoral leases grazing sheep and cattle. The survey discovered that approximately 9% of the rangelands were in a seriously degraded condition (Payne et al 1988). Pastoral companies continued to face the prospect of receiving no returns for their investment, while experienced grassmen faced difficult times. By the 1980s the high cost of labour, poor rangeland condition and the depredations of dingoes were responsible for the decision by most grassmen and companies to change from sheep to cattle (Zekulich 1977), and by operators on non-viable leases to sell up and get out.

In the 1950s Prairie Downs, of 157 148 hectares, was held by Jack Edward Hammond and Gordon Ralf Mattiske. In 1964 the Surveyor General remarked that the station, located in the headwaters where rainfall was limited, was too small to be a viable proposition due to aridity. Infrastructure was dilapidated, the homestead and outbuildings were in a deteriorated condition, and the commercial Shorthorn herd urgently in need of the introduction of new blood (SROWA 1964, Cons 3525 (was 211), Item 1884, V2). In this state the leases were transferred to Peter Bondini in 1967. In the following year he reported that there were 400 head of cattle, 10 horses, 28 kilometres of fencing, three holding paddocks, three mills and bores and two trap yards, all in a sorry state (SROWA 1964, Cons 3525 (was 211), Item 1884, VI). In 1974, Bondini, striving to develop an economic lease, procured those portions of the forfeited Mount Newman (previously Cockatina) Station, on the edge of the neighbouring Fortescue basin, which had been resumed for the Mount Whaleback mine and town of Newman (SROWA 1976, ACC 1569, AN3/10, Item 1067), plus several thousand hectares of VCL, increasing his leasehold area by 50% in the process (SROWA 1964, Cons 3525, Item 1884, VI). Development was minimal, however, due to Bondini's ill-health.

An inspection by the rangeland scientists from the Department of Agriculture with officers from the DL&S, revealed that the station was run on the open

grazing principle, with few fences, the existing paddocks being used for mustering purposes. There were no permanent natural watering points on the lease. Recommendation included long-term fencing for control of grazing and the installation of further watering points (Payne et al 1988). Ten years later there were 1219 cattle and 25 horses, with an ECC of 1894 large stock. Bondini was to complain that developing further watering points was hazardous, as water levels had dropped in existing wells due to the neighbouring development of the Mount Newman mine (SROWA 1976, ACC 1569, AN3/10, Item 1067).

With his health failing, Bondini was forced to offer Prairie Downs for sale on a walk-in walk-out basis in December 1981, but he died before a buyer was found. In 1983 the lease was finally transferred to Brosnan and Cook who also held Hooley Station in the Fortescue basin. Disheartened with the poor water supplies, the heavy expense needed to develop the lease, and the troublesome vermin, they sold it the following year to Brenton and Susan Hicks of South Australia. Paradoxically at the time the station's rangelands were considered to be in first-class condition, while the stock were poor due to competition with the kangaroos, donkeys, and brumbies and to general mismanagement. On this unprofitable lease requiring large injections of cattle and experience, Hicks commenced a successful re-development program (SROWA 1976, ACC 1569, AN3/10, Item 1067).

Companies also faced difficult times through speculation and mismanagement. In 1966 a group of speculating city-based lawyers and businessmen John Oxbrow, John D'Esterre, Kevin Salt, Geoffrey Wardle, Alkin Wallace, Ivan Gunning and Thomas Wardle purchased the historical, centrally located 300 802-hectare Ashburton Downs lease. By 1968, the company was castigated for failing to submit a five-year development plan. Two years later, with the development plan not yet available, company secretary Kevin Salt reported that it was in financial difficulties and experiencing upheaval among the shareholders, who were seeking to increase their membership in order to inject further capital into the lease. He claimed that bad seasons, stock losses and low wool prices had all contributed to the problem. At the time the lease carried only 5900 sheep, 216 cattle and 55 horses, and the company was gradually disposing of sheep in favour of cattle (SROWA 1964, Cons 1764, AN3/20, Item 3484/64), a vast difference from the 37 000 sheep and no cattle on this well-established lease in 1936 at the commencement of the Big Drought (SROWA 1936, ACC 541, AN3/6, Item 2171). In 1971 Chief Pastoral

Inspector R.J Johnson reported that conditions had deteriorated because of poor management. In fact, the lease was capable of carrying 24 600 sheep even in a poor season. Surveyor General John Morgan agreed and the company was in danger of lease forfeiture. By 1972, sheep numbers had dropped to 4984 and cattle increased to 1100. Horses were reduced to 33 (SROWA 1964, Cons 1764, AN3/20, Item 3484/64).

Finally in 1974, when the Wardle and D'Esterre interests had been purchased by Pellews of Fremantle, which was an Oxbrow company, new development plans were submitted that included cattle troughing, new bores and a fencing program along the degraded river areas, which were part of the old stock route to Onslow. The eroded areas had been planted with buffel and Birdwood grasses to stabilize the country (SROWA 1964, Cons 1764, AN3/20, Vol 3484/64). Payne and others inspected the station the same year, finding the rangeland in a deplorable condition along the tributary plains. As an example of overstocking and bad management, 35 square kilometres surrounding four watering points had to be closed-off from stock. The area required strip cultivation to aid infiltration of moisture and the cultivation of plots to provide for a range of grass seeds and chenopod shrubs as there was no natural vegetation to generate recovery. The expected period for regrowth was five years. Despite their submitted five-year plan, the company received further condemnation for the lack of fencing, which rendered control of grazing pressure impossible (Payne et al 1988).

In 1976 the station was purchased by the company's manager of nine years Robert James Lee-Steere. By that time sheep had been replaced with 2265 cattle and 65 horses (SROWA 1964, Cons 1764, AN3/20, Vol 3484/64). The recommended ECC for cattle at the time was 2240 head. The rangeland was not in good shape, with 28% of the country eroded, and 79% of the pasture in fair to very poor condition (Payne et al 1988). After experiencing a sequence of dry seasons, cattle numbers had climbed to 3000 head, and astonishingly, nearly 2000 fewer than PB's new recommendation of 4952. In the absence of enough rainfall to recharge them, the bores had turned salty, rendering some established watering points useless. At the commencement of the dry spell, Lee-Steere had spent about \$14 000 for fodder and feed charges, on which he received a substantial rebate. The unsympathetic PB claimed, however, that the difficulties were due to mismanagement of an established lease. Disheartened by the poor condition of the lease, and experiencing financial difficulties, Lee-Steere sold it two years later to speculators

John Carstairs and Peter Martin, farmers of Kalamunda, for \$180 000 on a walk-in, walk-out basis. By this time cattle numbers had dropped to 800 head of cattle and there were 60 horses (SROWA 1964, Cons 1764, AN3/20, Item Vol 3484/64). The new owners, also unable to generate a return from their investment, sold the station in the early 1980s to the experienced grassman John Bettini. Under conservative stocking methods and development programs for watering points away from the river, the rangelands gradually regenerated. By 1996, Bettini had purchased the much-coveted, well-grassed DeGrey lease from Dick Vincent and the improved Ashburton Downs was once again on the market (Bettini 1997).

11.4d Fortescue Basin

In contrast to the cyclones that lashed the Ashburton basin, the neighboring Fortescue basin recorded little cyclonic activity after 1950. The coastal Mardie Station reported nearly 600mm for 1958 with an exceedingly dry year for 1959 with a very low 80mm (Figure 11.7). Indeed that year was very dry throughout the basin. Similar to the other basins, the variability of rainfall was quite pronounced. Both Ethel Creek and Millstream reported dry conditions and sheep losses, particularly on Millstream, but the

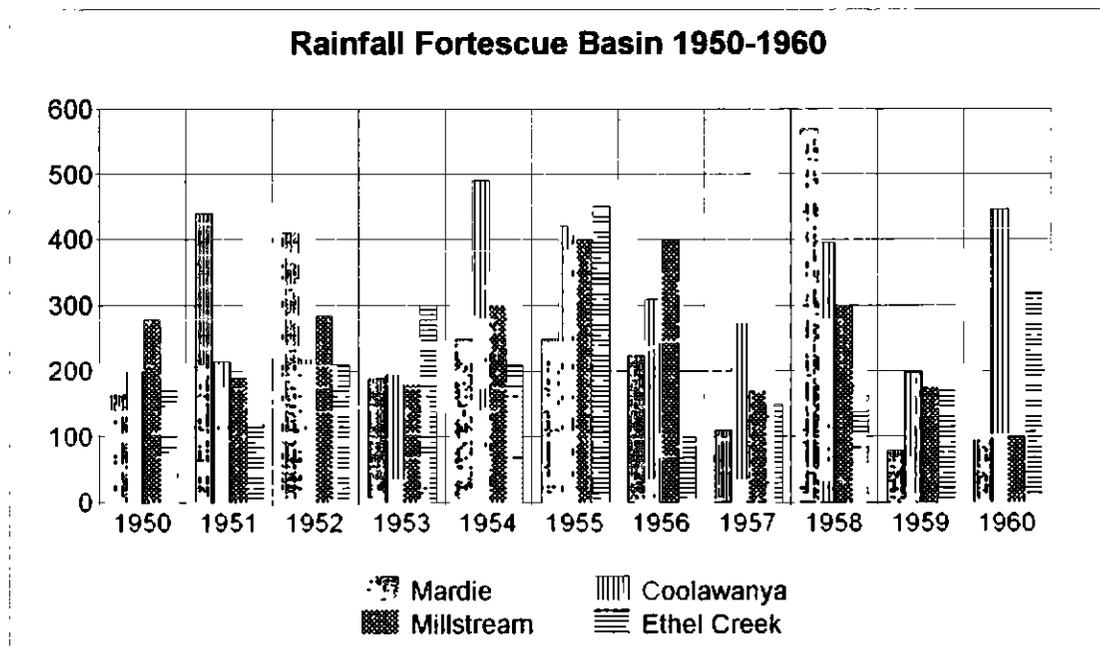


Figure 11.7: The variable rainfall patter of the Fortescue basin from 1950 to 1960. Source: McCall 1999.

latter could be attributed to the dingoes rather than the weather (SROWA 1936, Cons 1699, AN3/16, Item 2643/36). Cattle losses recorded by the Ethel Creek manager and attributed to dry seasons, were associated with its recent history of neglect and mismanagement and not lack of rainfall (SROWA 1909, Cons 1384, ACC3/Pas, Item 7785/09), as the lease received over 185mm, with Millstream a close 190mm, for the year, compared to coastal-Mardie's 80mm. Thus although sufficient rain fell over the 10-year period to help rejuvenate the grasses, mismanagement and the rapid turnover of owners prevented some leases from being adequately stocked and developed. Nevertheless, the high cost of labour, adverse seasonal conditions and the dingo problem were also considered responsible for the decision by most grassmen and companies to change from sheep to cattle. Furthermore, with mining dominating the economy and environmental issues an important concern, some leases were subjected to mineral leasing and sub-leasing, whilst others were incorporated into national parks.

Alex McRae's historic old Millstream Station (Figure 11.8) was sold by the Gordon family to the Kennedys. In 1980 the lease was resumed by the State Government for its water reserves and for mining purposes (Clarke 1996), and part of the area was

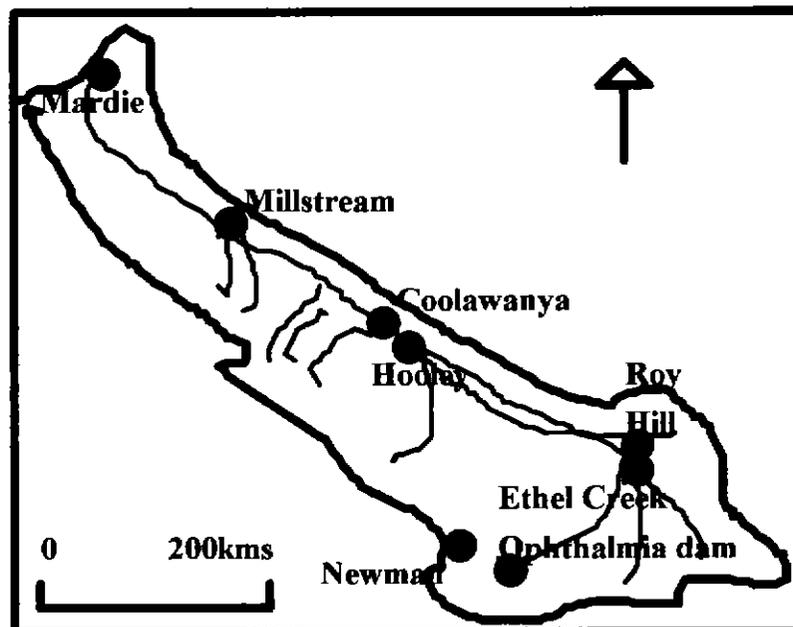


Figure 11.8: Location of stations under study, Newman and the Ophthalmia Dam in the Fortescue basin.

incorporated into the Millstream-Chichester National Park under the care of CALM rangers and the Aboriginal Indjibandi people (Park Notes 1996a). Important work carried out by both groups was the gradual eradication of the encroaching date (*Phoenix dactylifera*) and cotton (*Washingtonia robusta*) palms. These plants had grown and spread through neglect, the contraction of the work force prior to World War II preventing control measures previously carried out by Chinese gardeners and Aborigines (Field Trip 1996). The fibrous root systems of the palms blocked channels, altered water courses and restricted water flow to the native plants. The dense canopy of fronds restricted the light to the understorey, resulting in the death of some species of native plants. Bare areas from the gradual removal of the palms were rehabilitated with native plants of the region (Park Notes 1996b).

The historic Hooley Station, owned by the Coolawanyah Pastoral Company and suffering from mismanagement, was up for sale in 1959. The ECC at the time was one sheep to 12 hectares and the lease held 10 000 sheep, mainly wethers bred on the neighbouring company-owned Coolawanyah, which had been leased and well cared-for by grassman Roy Parsons during the drought years. There were 16 bores and wells, with another seven requiring attention, several springs and pools, with 250 kilometres of five-wire fencing enclosing 10 paddocks. A further six paddocks required repair and maintenance. At the time of sale to speculators chemist Derek Chadwick, fauna warden Robert Dear and his wife Marjorie, of the nearby town of Wittenoom, for \$51 700, there were 7500 sheep and 15 horses on the lease, and the dingoes were considered to be under control. In 1961 Chadwick and Dear, operating as the Hooley Pastoral Company, introduced 20 head of cattle. In 1971 they were on the verge of bankruptcy, and struggled to obtain a living for a further three years. The Dears then moved south, leaving Chadwick to cope with 140 sheep, 400 head of cattle, mostly breeders, and the increasingly troublesome dingo packs (SROWA 1965, Cons 3525 (was 211), Item 1356, Vol.1). In a deplorable condition by 1976, Hooley and Coolawanyah Stations had been abandoned, to be later taken up by descendants of Roy Parsons, who were endeavouring to rejuvenate the rangelands and repair the dilapidated paddocks (Parsons 1998). The Hooley lease, however, was later purchased by speculators Warner Marshall Brosnan and Peter Gilbert Cook, who also purchased the Prairie Downs lease in the Gascoyne in 1983 (SROWA 1976, ACC 1569, Item 1067)

In 1955 Charles Smith's vexatious and degraded Ethel Creek lease on the headwaters of the Fortescue basin was sold to speculators Frederick and Muriel Vellnagel who also purchased substantial amounts of agricultural land in Gingin in the South West, and the Mount Newman and Sylvania Stations (SROWA 1909, Cons 1384, AN3/Pas, Item 7785/09) In 1971 Vellnagels sold the station to B.A. and P.M. Panizzi who complained that the dry period between 1974 and 1978, together with low cattle prices, prevented them from meeting mortgage and stocking obligations. At the time the leases had been improved to 4500 head of cattle, 80 kilometres of fencing, and 80 wells and mills (SROWA 1920, ACC 1384, AN3/9, Item 7960). By 1998, however, the lease was owned by BHP, owner of the Mount Whaleback Mine, and run by a manager (Fox 1998).

The managers for the Smith family had abused the rangelands on the Roy Hill lease also, by neglecting to establish watering points away from the river and its tributaries. The river frontage was severely degraded, a situation which was exacerbated by the junction of Stock Routes 9700 and 15159 at Battle Hill, and 9698 and 9700 further south on Ethel Creek Station, in the vicinity of Jigalong Creek and its junction with the upper reaches of the Fortescue River (Figure 11.9) (PLAP 1924, 91/300). By the 1990s there were more serious problems to contend with that affected both Ethel Creek and Roy

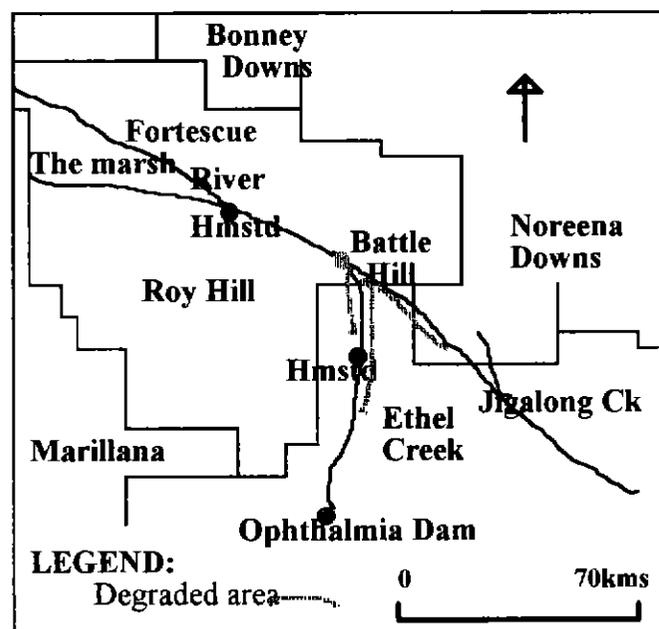


Figure 11.9: The area of the death of trees, perennials and erosion on Roy Hill and Ethel Creek Stations, Source: Webb 1995

Hill. On either side of their common boundary were 214 square kilometres of denuded and eroded land from the widespread death of *Eucalyptus coolibah* (coolibah), *Acacia aneura* (mulga) and many perennials (Payne and Mitchell 1992, Webb 1995). Rehabilitation was required urgently at that date, by destocking and fencing off the area. The situation was attributed to the construction in 1981 of the Ophthalmia Dam for the Mount Whaleback Mine, which prevented flood flow. The Kennedy brothers of Roy Hill had continually lobbied and complained to environmentalists and the Mount Newman Mining Company, and had collected photographic and video evidence since 1990 (Webb 1995, Seddon 1998, Gale 1999). Dams were environmentally problematic, and their effects little-studied in cases where river systems flowed irregularly (Water and Rivers 1997). The successful revegetation of Ethel Creek's degraded areas by BHP after de-stocking was assisted by a mobile research team from Curtin University of Technology (Fox 1998) and above-average rainfall in the 1990s (Water and Rivers 1997). The replacement of dead trees had not taken place, however, and the effect of negative flood-flow through the marsh on Roy Hill and down-river to the Millstream Springs had yet to be studied.

11.4e DeGrey Basin

Rainfall patterns for the DeGrey basin in the 1950s depict a similarity with the Fortescue, with 1959 the driest season for the ten-year period from 1950 to 1960, with, from the three stations selected along the river, only Warrawagine recording above 100mm (Figure 11.10). The figures indicate that from 1953 to 1957, mostly good rainfall was recorded. The variability of rainfall is seen for 1954, where DeGrey recorded over 550mm, suggesting cyclonic activity, while the neighbouring Muccan received a miserly 205 and Warrawagine on the Oakover 295mm (McCall 1999). None of these stations, however, requested rent relief for the dry 1959. T.A.L. Howard of Bonney Downs Station south of Nullagine requested rent relief for that year. He stated, however, that most of his stock losses were from the dingoes and not through lack of green feed, with large numbers of kangaroos also a problem (SROWA 1936, ACC 541, AN3/6, Item 2245). Cyclonic weather, however, was experienced further north during the 1960s, with Bessie in January 1964 demolishing every building, destroying fences and windmills, and washing away stock, on Nita Downs Station on the Eighty Mile beach south of Broome (Fox 1997). Kirsty in 1996 battered stations in the DeGrey basin, but demolished buildings, wells and fences, and washed stock out to sea on the northern-neighbouring Pardoo (Leeds 1997). In comparison to the Big Drought, rainfall was more plentiful during the years 1950 to 1960 to further enable grass regeneration.

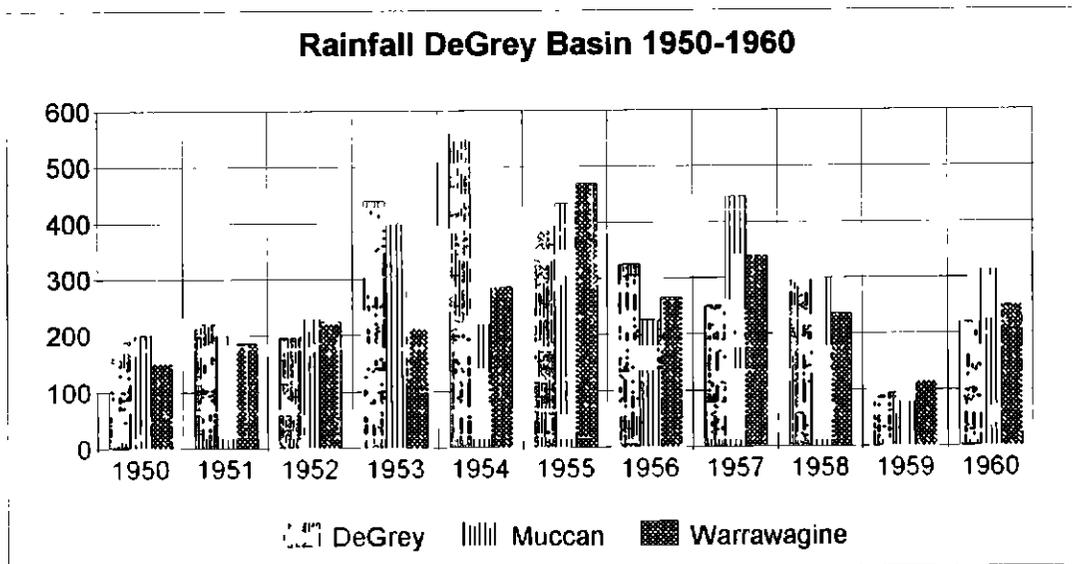


Figure 11.10: Rainfall pattern in the DeGrey basin portrays a very dry season for 1959. Source: McCall 1999.

The post-World War II DeGrey basin (Figure 11.11) presented a contrast to the other basins, with well-grassed leases along the rivers, and degraded and abandoned

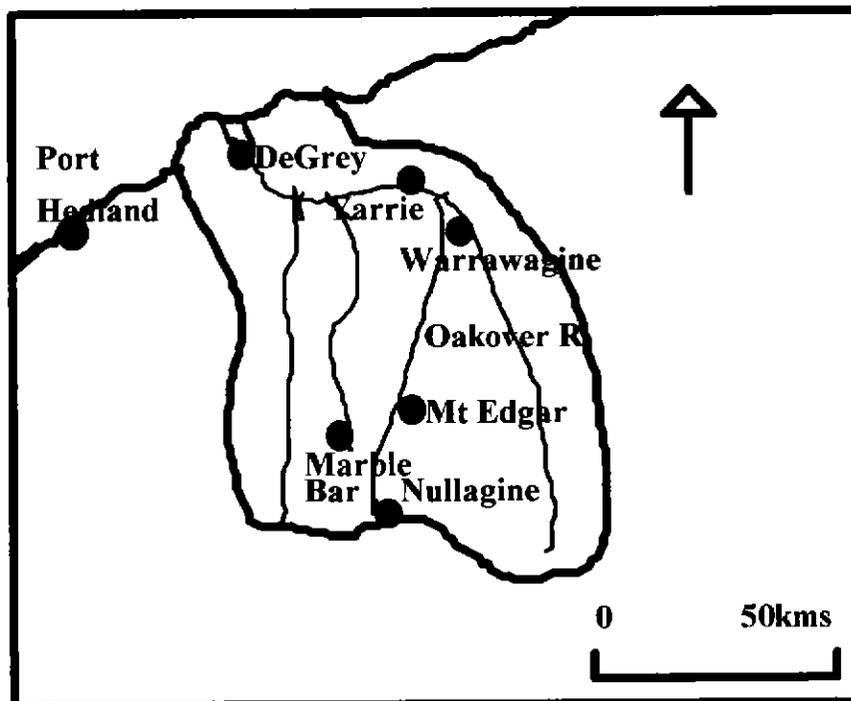


Figure 11.11: Locations of stations in the DeGrey basin

properties elsewhere. Many stations controlled by absentee leaseholders were undercapitalised and poorly managed. Difficulties experienced by the industry in 1959 included the shortage of labour, the inability of ewes to produce lambs and rear them to weaning age, the inexperienced owner- operators and managers, and the abundance of kangaroos and euros competing for the rangeland resources. The North West Committee recommended summer fires and deferred grazing in the paddocks of some of the degraded leases (SROWA 1959, ACC 1302, AN40/4, Item 2). Its report resulted in a five-year plan for vermin control, pasture regeneration, and strong recommendation for leaseholders to switch from sheep to cattle (Maisey 1979). The well-grassed but mismanaged DeGrey and Warrawagine Stations, owned by the New South Wales-based Rubin interests, were on a repair and maintenance program throughout this period, coupled with their paddock rotation program, until plans for the changeover from sheep to cattle were implemented in 1967, with Warrawagine running a fully operational cattle enterprise in the early 1970s, followed by DeGrey some time later (O'Grady 1995).

In 1976 an inspection of Warrawagine, Mulyie and DeGrey revealed that although the grassed plains, a mosaic mixture of bunch grass, Mitchell grass and spinifex, were in excellent condition, areas around the homestead paddocks of DeGrey, Mulyie and the Shaw River Outcamp were badly degraded from the concentration of sheep at shearing time. Some waters situated in the coastal region of the lease had turned to salt also, and been rendered useless. Pastoral Inspector Stephen Lillyman stated that all improvements on the leases were in a deplorable condition and needed large injections of capital, or lease forfeiture would result. Capital was a scarce commodity for the Rubins, with all leases already mortgaged to the Commonwealth Bank and Dalgety Australia Limited. (SROWA 1964, Cons 1764, AN3/20, Item 2524, V1). Regeneration was carried out with the planting of buffel grass in some of the degraded areas of DeGrey, Mulyie and the Shaw River Outcamp (SROWA 1965, Cons 1764, Item 2524, V 4). Excision of land from DeGrey for the requirements of the Mount Goldsworthy railway, which divided the lease in half, also contributed to problematic lease management (SROWA 1965, Cons 1764, AN3/20, Item 2525, V1). A Main Roads quarry, PWD gravel pits and the Goldsworthy borefield were other unwelcome developments (SROWA 1965, Cons 1764, Item 2524, V 4).

In the 1970s also, no doubt in response to similar projects in the Fitzroy basin, the Rubin group requested public accountant G.R. Schwab to investigate the

viability of expanding a system involving supplementary feed production and feedlot operations with the Port Hedland-based Pilbara Meats (Schwab 1975). Their attempts were thwarted by the lack of capital and the sudden appearance of brucellosis in cattle in 1976, which placed the DeGrey lease under quarantine, the contagion occurring through the purchase of cattle by Warrawagine from Anna Plains Station to the north (Nickels 1976). The brucellosis quarantine was lifted in 1979 (Barrow 1979). A surprise arrival on Mulyie Station in the 1980s was *Macrochelles peregrinus*, a type of dung beetle that helped reduce the number of flies breeding in a dung pad. It had been introduced to the Fitzroy basin in 1983 by the CSIRO through Derby and crossed the desert in the following year, much to the jubilation of the Canberra-based scientists (Wallace 1984).

In 1985 the Rubin group sold DeGrey to Richard Vincent, retaining some shares. Vincent, however, let the cattle graze at will and carried out no cattle-breeding programs. He finally sold the lease to John Bettini in 1996, who considered it the best-grassed lease in the Pilbara, even after a half-century of mismanagement and neglect. In 1997 Bettini was busy mustering the last of the mickie bulls prior to the introduction of Droughtmaster bulls to put over the Hereford cows. The lease carried approximately 15 000 cattle (Bettini 1997).

In the late 1970s the Timms family purchased Warrawagine Station from the Rubin group. By the mid 1980s Timms was running approximately 12 000 head of cattle. No improvements were carried out, no breeding programs implemented and the stock roamed freely along the Nullagine, DeGrey and Oakover Rivers, using the permanent waterholes and severely degrading the river frontages. As mentioned with DeGrey, brucellosis had broken out from wandering Anna Plains cattle, and for years Timms refused to participate in eradication programs, much to the annoyance of his neighbours, who remained under quarantine though their cattle were free from the disease. In 1988 the station was sold to Robin and Lyle Mills and partners, and a Department of Agriculture eradication team moved in, taking four years to rid the lease of approximately 25 000 brucellosis-infected cattle (O'Grady 1995). The large degraded areas of tussock grassland on the DeGrey River benefited from de-stocking, and revegetation plans were carried out to further enhance the once-degraded area (Water and Rivers 1997). In 1992 Robin and Lyle Mills finally took over a station that was unstocked, unfenced and with few watering points, and proceeded to restore it. In 1995 the lease carried about 14 000 head as a commercial herd (O'Grady 1995).

11.5 Intensification Attempts in the Fitzroy Basin

Though rainfall was sufficient from 1950 to 1960 to regenerate pasture in the Fitzroy basin, managers of the stations recorded dry periods. The lowest falls occurred at variable intervals, with 1952 the driest year for Yeeda, Liveringa and Noonkanbah, followed by 1958 and 1959 for the three leases (Figure 11.12) Noonkanbah,

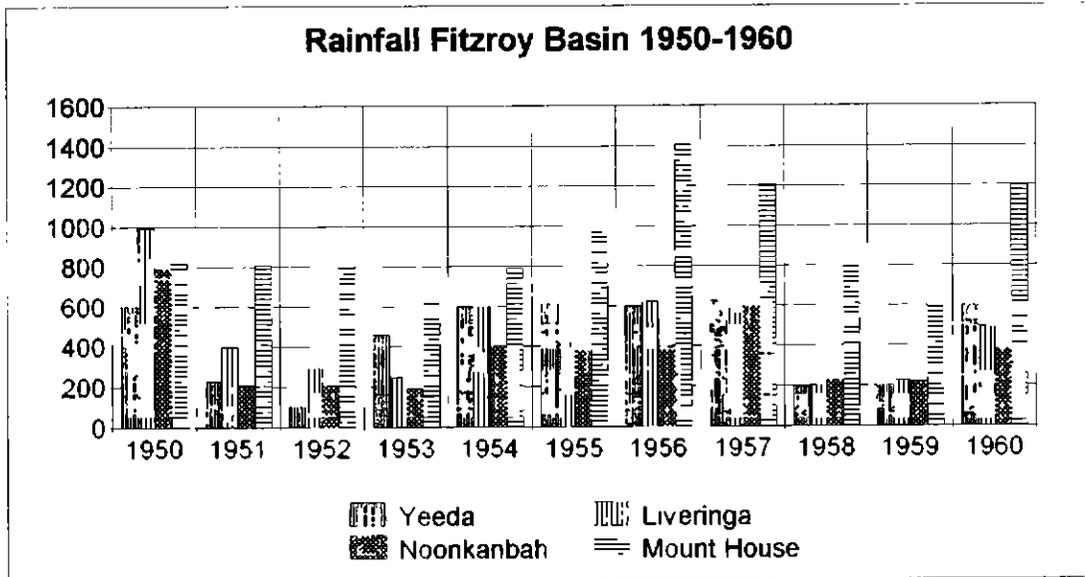


Figure 11.12: Rainfall of the Fitzroy basin, equally as variable as the basins further south. Source: McCall 1999.

predominantly a sheep station, had exceptionally dry years for 1951, 1953, 1958 and 1959 (McCall 1999). Widespread flooding of the Fitzroy River, however, was normal occurrence, as stated by Speck and others in 1958 (Speck et al 1964), and for six years of that decade, good falls would have brought the river down in flood. The earliest high flood flow, however, was available for 1959 at Alligator Pool, where 10 000 cubic metres per second was recorded (Waters and Rivers 1996), at a time when rainfall appeared very low (McCall 1999). The river could spread up to 50 kilometres either side of its various channels and anabranches. After the completion of the 1985, specially-designed, all-weather beef road, the floodwaters of that year backed up at Willare Crossing on the Great Northern Highway near Yeeda, inundating homesteads, washing away topsoil, scouring out billabongs and destroying fencing. The engineers failed to provide culverts to

allow the water to flow through (Marsh 1996). It was to prove troublesome up to the present period (Plate 11.2) (LeLievre 1997).



Plate 11.2: Floodwaters of the Fitzroy River dammed-up behind Willare Crossing, March 1993. Courtesy Gordon LeLievre 1997).

Furthermore, a different scenario of rangeland management occurred from after the late 1950s on the leases in the Fitzroy basin, which were largely in corporate hands and operated by local and imported managers. The absentee owners appeared to pay little attention to either environmental or economic conditions, with the onus of rangeland management being placed upon the managers' shoulders, some of whom had scant regard for the condition of the leases under their control. Speck's CSIRO survey in 1958, on the potential of land settlement for irrigation purposes on the Fitzroy River, reported on the badly degraded cracking clay plains of the river frontage (Speck et al 1964). A further survey conducted in 1972 to define the severity and location of vegetation degradation reported little change and no implementation of rehabilitation plans. Certainly the affected areas, favoured by stock, had not been de-stocked and fenced off (Payne et al 1972).

Liveringa Station (Figure 11.13) on the Fitzroy River has been singled out because of the debilitating effect the activities of its company-owner had on the stock, vegetation, and other leases in the Fitzroy basin, from 1969 to 1982. Prior to that period, from 1950 onward, repair and maintenance programs had been conducted on the lease. In

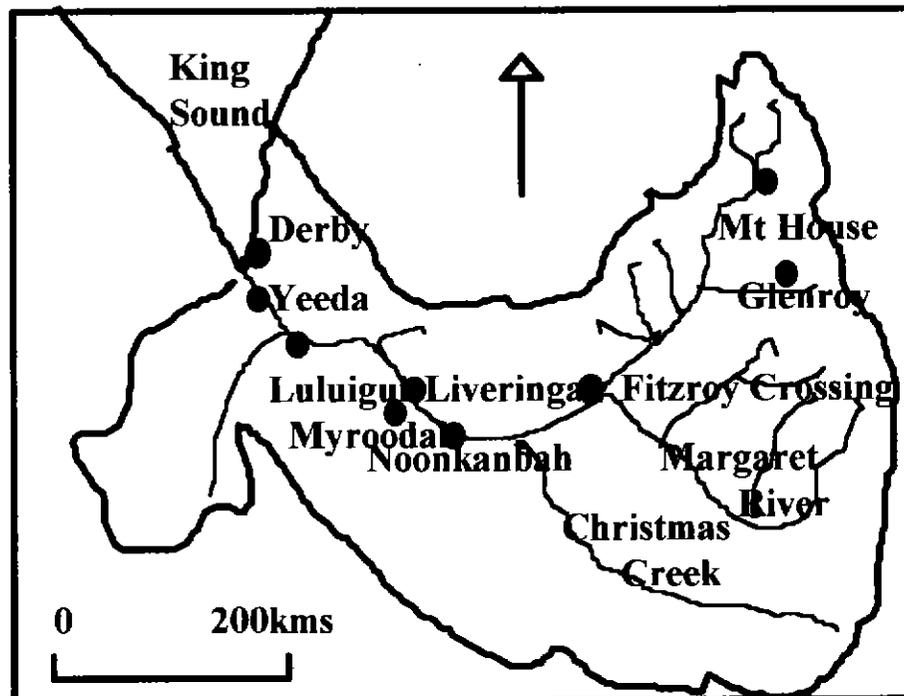


Figure 11.13: Location of stations in the Fitzroy basin

the early part of that decade, however, Kimberley Durack, member of a Kimberley pastoral family of long standing and of the KPC, initiated rice-growing experiments on the black soil plains of the 22 000-hectare Camballin sheep paddock, which had been converted to freehold and excised from the lease (Figure 11.14). The crops were planted out of season, however, resulting in a poor yield. In 1955 he experimented again, with some success. In 1959 in a bid to further development, the KPC went into partnership with Northern Developments Proprietary Limited, which had experimental farms on the Ord River (Davidson 1966). As the major partner, then with an added partner, American Jack Fletcher's Australian Land and Cattle Company (ALCCO), Northern Developments poured capital into the Camballin project (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). Meanwhile as discussed above, Speck and others in 1958 traversed the floodplains of the Fitzroy River to ascertain their potential for closer settlement. At that time sheep were concentrated on the overgrazed Mitchell grass-blue grass pastures of the

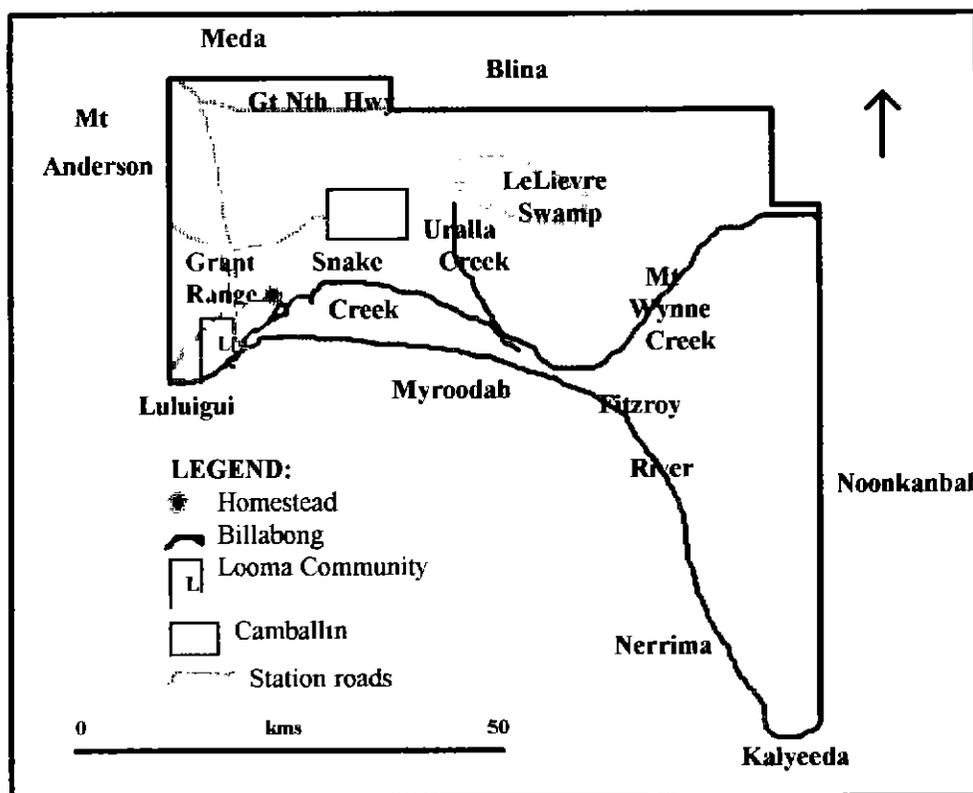


Figure 11.14: The Liveringa lease with the position of the Camballin experimental plot.
 Source: SROWA 1964 & 1965, Cons 1764, AN3/20, Item 3793/1964.

cracking clay plains of flood-prone areas, except for short periods during the wet season. The result was bare river frontage and scalded ground. A prolific wallaby population exacerbated the problem of grass denudation (Speck et al 1964).

The rangeland scientists considered that, because the river frontages were susceptible to regular severe flooding, any agricultural development there would be short-lived. Controlled flooding with pasture improvement offered the best prospects of closer settlement. A barrage on the river would control the water and direct it to areas suitable for irrigation. Because the conclusions were based on results from the Kimberley Research Station in the Ord River region, which had experienced insect and dry-season irrigation problems as far back as 1949 (*Votes and Proceedings* 1949:379-380), caution was necessary in comparing them with the Fitzroy basin due to significant environmental differences (Basinski 1964). It would be necessary to establish a research station in the Fitzroy basin to study crop types and cultivation methods to determine the right varieties

for irrigated agriculture in that environment before development could proceed (Speck et al 1964).

Choosing to disregard Speck's recommendations, the Western Australian Government authorised the construction of the Seventeen-Mile Dam at a cost of as Wark (1997) reported, \$460 000 in 1959. Two years later the \$4 million Fitzroy Barrage, which was based on a design developed in India and Pakistan, was erected to divert waters of the Fitzroy River into the Seventeen-Mile Dam for irrigation in the dry seasons (Plate 11.3) (Wark 1997). The State Housing Commission constructed a small settlement of 20 cottages, a bore and storage tanks for the water supply. Power was supplied from a generator installed by the State Electricity Commission (Bauer 1986). PWD officers were in charge of the barrage and dam maintenance (Wark 1997).

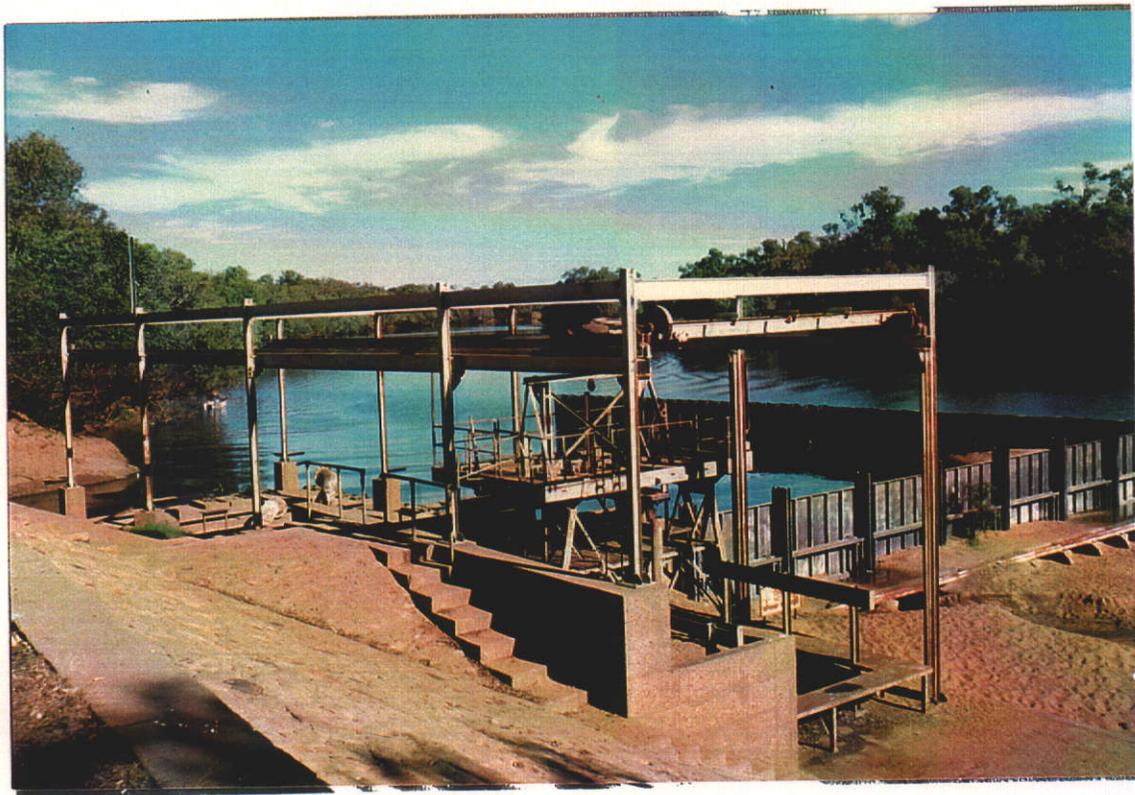


Plate 11.3: The Fitzroy Barrage. It still operated automatically in 1997, 7th June 1997

By 1969 outright control of the Liveringa lease had been purchased by Fletcher's ALCCO, which devised grandiose plans of pastoral intensification that affected all the leases in the basin, and further development for irrigated farms. The company's

lease ownership at the time included Liveringa, Napier Downs, Bohemia Downs, Louisa Downs, Kimberley Downs, Mount Jowleanga and Kilito leases, with interests in Peter Laurence Baillieu's King Ranch Cattle Company, which held the Yeeda and Mount House-Glenroy leases (Figure 11.15) (SROWA 1964 & 1965, Cons 3525, AN3/20, Item 3256/1964, 1965, Cons 3525, AN3/20 Item 1005/1965). ALCCO was connected to the giant Project Development Corporation and some of its mining and manufacturing subsidiaries through the Australian Cattle Company (ACC) (SROWA 1964 & 1965, Cons 1764, AN3/20, Item 3793/1964, SROWA, 1965, Cons 3525, AN3/20, Item Vol 3497/1964, SROWA, 1965, Cons 4496, AN3/20, Item 1005/1965), which was a joint AMP Society-Placer Development venture, that held Luluigui, Myroodah, Kalyeeda, Moola Boola and Mount Amherst leases (SROWA 1964, Cons 3525, AN3/20, Vol 3497/1964). The predominance of Americans, who held vast areas of land in the basin, was a source of concern for the PB, which feared that as outsiders they would prove incompetent in managing the rangeland, particularly with regard to overstocking the leases, which proved to be the case.

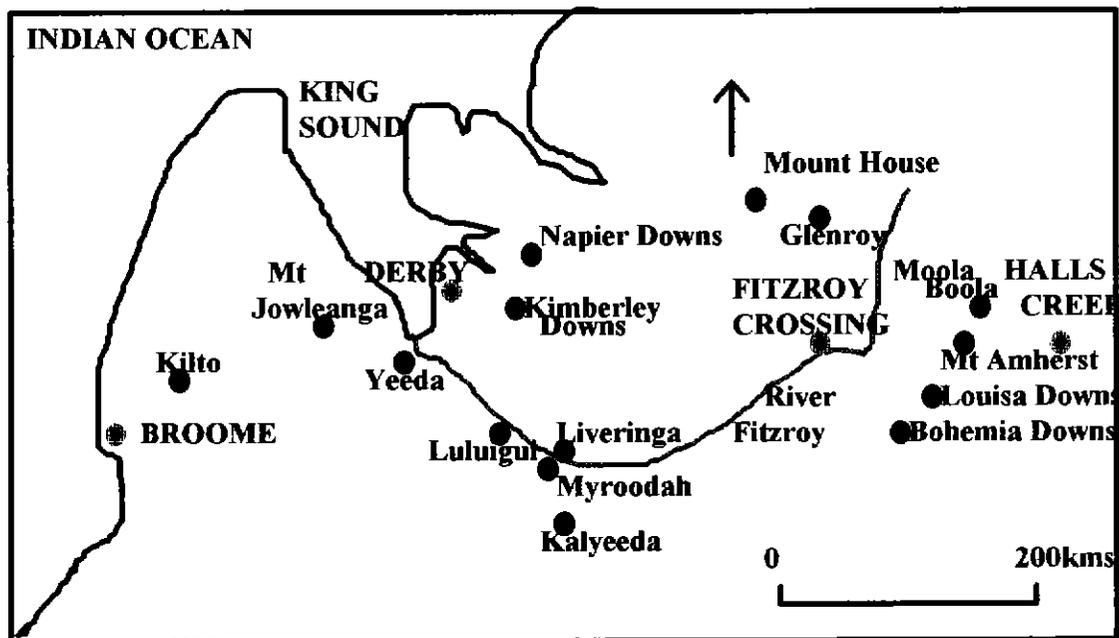


Figure 11.15: Stations purchased in the West Kimberley by American interests

Despite the Board's concern, no official corrective measures were taken during the subsequent intensification fiasco, as the level of holdings of the shareholders in the various companies and sub-companies complied with the Land Acts (SROWA 1964,

Cons 1764, AN3/20, Item 3793/1964). At the time of Fletcher's corporate takeover, there were 46 000 sheep, 20 cattle and 229 horses on Liveringa. In 1970 ALCCO applied to the PB to change from sheep to cattle. Permission was granted, provided the company conducted the changeover on a progressive basis of one large beast to five sheep, and installed cattle fences and watering points while removing the old sheep fences (Bauer 1986).

Fletcher intended to produce two-year-old beasts with an infusion of Brahman blood, replacing the five-year-old bullocks normally marketed, and to use feedlots, sown pasture, and hay grown on Camballin Farms for supplementary feeding (Bauer 1986). Similar plans for the intensification of cattle husbandry, using the Brahman, spread rapidly across the Fitzroy basin, with company-connected leaseholds following suit (SROWA 1964 & 1965, SROWA 1965, Cons 3525, AN3/20, Item 1005/1965, SROWA 1965, Cons 3525, AN3/20, Item 3256/1964, Matthewson 1997). Santa Gertrudis were the stud animals used on Mount House and Glenroy. Their marketable cattle were sent to King Ranch's Hooker feedlots at Kununurra. (SROWA 1964, Cons 3525, AN3/20, Item 3256/1964)

The Inkata Feedlots were established at Liveringa in 1970 to fatten ALCCO's own animals and those of other Fitzroy basin leaseholders. The installation included a bore, a 1.4-million-litre tank, silage pits, an office block, a bunkhouse, stock and rodeo yards and an airstrip. The establishment cost was \$322 000 (Bauer 1986). The cattle were to be fed Camballin-grown sorghum hay and provided with cattle-lick and other nutritional supplements. The feedlot was designed to accommodate breeding stock and 7500 head of crossbred weaners at a time, for a period of six months. After three years, however, only 8152 head had been through it. Fraught from the outset with financial difficulties and maladministration (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964), Fletcher's attempt to raise hand-fed stud cattle and to fatten the commercial herd was a failure on all the company's leases (SROWA 1964 & 1965, SROWA 1965, Cons 3525, AN3/20, Item 3256/1964, SROWA 1965, Cons 3525, AN3/20, Item 1005/1965).

In 1971 Fletcher devised a scheme to produce irrigated fodder and grain sorghum crops on Camballin Farms, as hay and cattle feed both for local fattening and for export (Bauer 1986). A marketing division to handle storage, processing, transport and

marketing, principally through the port of Broome, was devised, and interests were purchased in the Broome and Derby meatworks. The DL&S authorised the excision of a further 22 000 hectares of river frontage east of the station homestead for the expected crops. A \$3 million silo was constructed at Broome, capable of holding 17 000 tonnes of an American variety of grain sorghum, and a Japanese company was contracted in advance to buy the first two harvests at \$36.50 a tonne (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). With wet-season flooding and winter water shortages, however, the agricultural project was again a failure (Bauer 1986). The silo never held any grain and the sorghum hay proved woody and unpalatable to cattle (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964).

Not surprisingly, Fletcher's Liveringa Station management upset the PB by failing to meet the required cattle restocking rate and the provision of cattle fencing. By 1972 sheep numbers had dropped from 46 000 to 5000 and there were only 612 head of cattle. Fletcher had supposedly given 30 000 sheep to the Nomads of Waralong in the DeGrey basin for their recently-acquired Callawa Station (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). The Nomads had no recollection of so many sheep arriving on their unstocked 40 000-hectare lease north of Warrawagine Station (Taylor et al 1997). The fate of these animals remains a mystery. Improvement to the rest of the station was minimal, comprising 48 kilometres of four-barb steel-upright cattle fencing and three water tanks. The total cost of the changeover from sheep to cattle was \$24 000, a minuscule amount compared with the millions of dollars that were poured into the Inkata feedlots and the Camballin intensification project. By 1973 cattle numbers had doubled, but no further improvements, apart from the construction of some stockyards, were reported (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). Fletcher had enormous problems to contend with, including difficulties in recruiting experienced staff following his dismissal of the Aboriginal workforce in 1972 (Milgun 1997). He was reluctant to pay full wages except to his managers and overseers, thereby ignoring the needs of the lease. Unstable cattle prices exacerbated Fletcher's situation (Bauer 1986).

During this period the PB was highly critical of the neglected condition of ALCCO's leases, where bores were unreliable, fences dilapidated and other station management issues ignored. Cattle and other stock were dying at watering points which had not been kept in working order while attention was focused on grain and fodder production on Camballin Farms. As many as 80 000 head of cattle were running wild,

unchecked and unbranded throughout the Fitzroy basin (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). The special Brahman stud and feedlot Brahman-Shorthorn-cross cattle were inextricably mixed with the wild cattle (Gray 1997). The PB threatened forfeiture unless remedial measures were immediately introduced (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964, Vol 2). One Department of Agriculture officer was reputedly so outspoken in his report on the condition of the dying cattle, the hundreds of carcasses on the Inkata Feedlots and the dead horses and donkeys at other failed watering points, that he was demoted and eventually resigned (Anderson 1997, Addison 1997). Returns from cattle sales barely paid the mustering expenses (Anderson 1997, Engelcke 1997, SROWA 1964, Cons 1764, AN3/20, Item 3793/1964, Vol 2). One basic error made by Fletcher was the neglect of conventional animal husbandry in favour of fodder production, stud-breeding programs and the development of Camballin Farms. There were no proper maintenance or culling activities, and no strong electric fences around paddocks to keep out the mickie bulls which destroyed attempts at controlled breeding.

Between 1974 and 1978 ALCCO lost \$8 million without growing a viable crop, while the company's pastoral operations were at a minimum (Anderson 1997, Engelcke 1997, SROWA 1964, Cons 1764, AN3/20, Item 3793/1964, Vol 1&2). Woody weeds progressively invaded the croplands (Engelcke 1997) as the poverty bush had done on the pindan country of the lease in the 1920s. At the same time, King Ranch's attempt to grow stylo sorghum on its Mount House lease was also a failure (SROWA 1964, Cons 3525 (was 211), Item 3256/1964, Vol 2).

In 1978 Fletcher procured \$5 million through silent partner and financier Carey Crutcher of the American-based Crutcher, Rolf, Cummings Inc and other companies, with the promise of a further \$13.3 million over 18 years, to attempt another large-scale development at Camballin Farms, involving the creation and sale of individual irrigated small holdings (Bauer 1986). With other finances made available through a promotional package devised by Fletcher, ALCCO spent \$7.3 million on machinery alone. The State Government and its agencies invested a similar amount in associated works (SROWA 1964, Cons 1764, AN3/20, Item 3793/1964). By 1982, however, no land had been sold and Camballin Farms had yet to turn off a single saleable crop of rice or sorghum, while an attempt to produce hay was a disappointment when it proved unpalatable to stock. The venture had failed and the company went into receivership (Bauer 1986). Insects, birds, floods and dry seasons destroyed the attempts to grow cattle

fodder. Another contributing factor was the physical nature of the black soil plains, which were not conducive to irrigated agriculture. Soils capable of supporting crop-growing were only found on a small portion of Fossil Downs Station further east of Liveringa (Engelcke 1997).

By the mid 1980s leaseholders involved in stud-breeding programs moved to concentrate on rangeland grazing, instead of feedlots. Fletcher, in trouble with the PB and fed-up with his failing enterprises, offered the lease up for sale. In 1985 the Israeli-owned Australian Industries Limited (AIL) purchased Liveringa Station and Camballin Farms for \$11 million. After purchasing the lease, AIL conducted a careful examination of the viability of irrigated crop-growing. The study proved that massive injections of capital would not guarantee success and the idea was abandoned (Motzkin 1986). The former irrigation area was returned to cattle pasture, though the eradication of the woody weeds, which were a response to the ecosystem being changed, was not possible (Mitchell 1997). The townsite homes were purchased from the government by AIL and rented to members of the nearby Looma Aboriginal Community. The encroaching woody weeds (Plate 11.4), the abandoned dam, the barrage, the weirs, the irrigation



Plate 11.4: Woody weeds in Camballin Paddock, once Camballin Farms, 7th June 1997.

channels and the rusted machinery provided evidence of failure. On other leases there were also traces of abandoned sorghum plots and deserted feedlots.

In 1986 AIL imported 250 Droughtmaster bulls from Queensland and commenced the breeding of a Droughtmaster-Shorthorn-cross commercial herd. Meanwhile, mustering teams began rounding up the wild cattle. In 1997 there were 14 000 head of cattle and 170 horses on the Liveringa lease. Under prudent financial input and the hard work of experienced manager Bruce Gray, the lease was functioning as a reasonably well-organised cattle enterprise, although there were still problems with the state of the rangeland (Gray 1997).

In the Fitzroy basin in 1997 some Brahman bulls and old Brahman cows still roamed the leases, except at Mount House and Glenroy, where a residue of Santa Gertrudis cattle wandered among the Droughtmaster-Shorthorn-cross commercial herd. By 1997, the landscape of most leases in the basin had undergone dramatic and probably irreversible changes. Woody weeds, acacias and other undesirable species had invaded the black soil plains. On the pindan and stony outcrop plains of the Liveringa lease, the more palatable grasses had been replaced by acacias, speargrass and curly spinifex, requiring regular burning to generate the green pick essential to keep the cattle in good condition (Trotman et al 1972). Problematic markets, fluctuating cattle prices, demand for dividends and unwillingness to invest in rangeland regeneration made it difficult for the managers of the Fitzroy leases to even caution their employers about the futility of overstocking (LeLievre 1997, Henney 1997). The condition of the pastoral industry in the Fitzroy basin was far from healthy. According to the Western Australian PGA, the industry was incapable of clearing its debt and of achieving long-term viability (Laurie 1997). Furthermore, noxious weeds were widespread in the basin. Noogoora burr (*Xanthium* spp.), the most widespread weed in the world, was prevalent along the Fitzroy River frontage, growing in thick clumps to the river's edge, and resulting in the closure of the river under quarantine from Fitzroy Crossing to Willare Crossing (Mitchell 1997). To prevent further spreading, notices were erected at strategic sites, warning the public to keep out (Infonote 647 1990).

In 1998 the Fitzroy basin was again the subject of plans for agricultural development with cotton production the principal aim. John Logan's West Australian Industries' proposal replicated a development pattern which had led to the failure of

Camballin Farms and other agricultural experiments in the area. Plans included the construction of a dam at Dimond Gorge and a 500-kilometre canal across the Fitzroy basin to the immediate hinterland of Broome, for the irrigation of an area of pindan country. This venture had the provisional approval of the Western Australian Government but was greeted with derision by most of the Fitzroy Valley managers (LeLievre 1997, Henney 1997, McAlary 1997a), with incredulity by officers of AGWA (Addison 1997, Engelcke 1997), and with outrage by the West Kimberley Aboriginal communities whose heritage places were under threat (Dann 1997, Capp 1997). Even the PGA was highly critical of the proposal (Thom 1998). AGWA doubted if such a project would ever get started (Mitchell 1997). Damming would have a disastrous effect on the ecology of the river and the rangelands of the black soil plains (Irving 1998). It would be likely to create a depressingly familiar scenario where heritage, history and economics were all overlooked in the interests of a development whose prospects of success were minimal. In 1999 the proposal was still being evaluated through a two-year feasibility study.

11.6 Agricultural Experiments in the Other Basins

During the 1980s there were attempts in some of the other river basins at irrigated agriculture, despite the fact that intensification of the pastoral industry and crop farming in pastoral areas had not in the past been successful. Pastoral Adviser David Blood (1997) stated, however, that if schemes were devised that were workable, it would be a different story. One subsequent workable solution was the successful agricultural activity on David Steadman's Wooramel Station south of Carnarvon. Steadman grew grapes and asparagus for export in an agricultural enterprise whilst running cattle, sheep and goats in a pastoral enterprise (Steadman 1997).

As part of the irrigation plans, the growing of fodder to feed stock in the dry times was implemented and new plants introduced to the rangelands. The Mexican *Leucaena* (*Leucaena leucocephala*) shrub was tried, for its foraging quality was similar to that of lucerne (Petty et al 1994). The Canary Island Tagasaste, or tree lucerne (*Chamaecytis palmensis*) had been introduced to Australia towards the end of the 19th century as a possible fodder crop. Little experimentation was done with the plant until the 1980s when Western Australian farmer Sir James McCusker of the Landor in the Gascoyne and Boolardy in the Murchison, established the Martindale Research Project in 1985 and introduced tree lucerne into these basins (Wiley et al 1994). Department of Agriculture researchers planted the tagasaste around the Mount Padbury homestead in the

Murchison basin as a trial for stock fodder, but, due to its woodiness in the hot, dry summer, tree lucerne was a failure. Instead, the shrubs grew into tall, spindly trees, providing a convenient windbreak.

While the department concentrated on tagasaste, the Mount Padbury grassman continued to crop 200 hectares of lucerne, a regular operation since 1972. Seventy-three bales of lucerne hay were reaped from the patch at fortnightly harvests, with a gap of two months in the winter. The hay was fed to the bulls and breeders in the dry summer months (Garrity 1996). Lucerne was a plant that was successfully grown on other leases, including Brick House in the Gascoyne for at least 70 years (Brick House Diaries 1900-1959), and 400 hectares on Three Rivers Station. According to one grassman, lucerne-growing along the Gascoyne River was discontinued after pressure from the Department of Agriculture in the belief that the practice was damaging the river floodplains and resulting in the silting of the river bed (Forsythe 1996b). Various schemes were devised by leaseholders for irrigated agriculture, including Harold Rubin's plan to dam Carawine Gorge on Warrawagine Station in the DeGrey basin in the 1950s (SROWA 1953, Cons 1778, AN3/24, Item 4983 53).

After the McCusker family purchased Landor Station in the central Gascoyne basin in the early 1990s, a plot of land was set aside to experiment with irrigated tagasaste, leucaena shrubs, elephant grass, lablag bean, agra grass and other legumes as drought fodder (Plate 11.5). The tagasaste was a failure, being dry and brittle in the summer. The leucaena was a better alternative fodder crop, but the other legumes were doubtful, the soils being unsuitable for them (Halleen 1996). Lucerne still appeared to be the most successful prospect for irrigated fodder cropping. In the Gascoyne basin, however, irrigated tropical agriculture using water pumped from the aquifer below the river bed, was a success on the Delta land system near Carnarvon. Plantation farming commenced on a small scale in the late 1940s, thence from the 1950s to the 1970s, on a larger scale, with immigrants from Portugal, Italy and Yugoslavia taking up further land, excised from the Brick House lease, to run successful plantations (Andreoli 1983, Rebola 1983, Skender 1983). Crops grown included the most important Johnson bananas, cabbages, tomatoes, cucumbers, melons, capsicums and beans (Nevill 1997). By the 1980s plantation owners had their own refrigerated trucks and were carting vegetables and fruit to the mining towns of Karratha, Roebourne, Wickham, Dampier, Pannawonica, Tom Price and Paraburdoo, as well as to Perth (Dawson 1983). Paul Nevill owned the



Plate 11.5: Experimental lablag bean centre, tagasaste at right on Landor, 5th September 1996.

successful Westoby banana plantation, ran a tourist enterprise and tended a large market garden on the side (Plate 11.6) (Nevill 1997).

11.7 Conclusion

After the Big Drought, the rangelands were subjected to further degradation by corporate leaseholders and speculators, but most grassmen, with their conservative stocking methods and knowledge of the rangeland resources, gradually rehabilitated the degraded areas on their stations, or purchased and rehabilitated leases degraded by others. Despite the escalating wool prices of the immediate postwar years, the pastoral industry would never regain the stock numbers or the momentum of expansion of the pre-drought period. Economic downturn and the award wage decision resulted in the contraction of station employment, which was fortunately overcome by advances in technology. Climate variability continued to be a problem, though the traumas of the 1930s were not repeated. The ten-year climatic study of all the basins has shown that adequate rainfall, though variable, had fallen over the drought-ravaged leases, sufficient to have aided rehabilitation of the rangeland resources. Overstocking, mainly by speculators and mismanagement by managers of some corporate-owned leases,



Plate 11.6: Beans, tomatoes, lettuce and prepared ground, Westoby, Camarvon, 21st May 1997.

exacerbated the sorry state of the already drought-degraded rangelands, causing further paucity of grasses. The grassmen, however, monitored their rangelands in their own way, carefully managing their stock and selling when necessary. Consequently leases such as Woolgorong and Brick House showed little rangeland degeneration. Degraded leases such as Yallalong, Billabalong, Landor and Coolawanya, which were purchased by experienced grassmen or, in the case of Landor, environmentally-conscious companies, gradually regained good pasture through careful stock management. Rangeland scientists traversed the basins, identified land systems, reported and devised plans to rehabilitate degraded areas of the leases that had been held by speculators, or mismanaged and overstocked by corporate owners. Meanwhile, the PB, striving to have leases operating as viable units, failed at times to take into consideration the varied systems in both place and time.

The Fitzroy basin, badly degraded from over 100 years of sheep pasturing on the river floodplains, went through a more serious degeneration through American involvement with plans of irrigated agriculture and feedlots thwarted through the very nature of the environment. Under such circumstances, it is interesting that the PB, with its threats of lease forfeiture through lack of proper lease development and stock husbandry, never carried them out. Possibly it was constrained by considerations of the possible

impact of such action on overseas investment in Western Australia's rural industries. Except for the lower Gascoyne, irrigated agriculture was a failure, largely through the entrepreneurs' neglect of expert scientific advice, and their failure to undertake basic research. In many parts of the North West, therefore, and despite decades of seasons good enough to regenerate the grasses, the rangeland problems, which were, in a large part, the heritage of the Big Drought, persisted.

Chapter Twelve

Aboriginal Landscapes to the 1990s

12.1 Introduction

In the immediate postwar period, Aboriginal people continued to work on the stations and to maintain some of their traditional mores at the same time. Indeed, it can be argued that, in some respect at least, many of them were better-off at that time than in the ensuing decades. Progressively, however, technological change, particularly in the transport field, reduced their employment opportunities. Nevertheless, Aboriginal involvement in station work during the 1950s was particularly important to the struggling pastoral industry. Meanwhile, the Western Australian Department of Native Welfare, although in process of reducing the many restrictions which were formerly imposed upon Aboriginal people, continued to authorise the removal of children of mixed parentage to native missions. Aboriginal reserves located near towns remained problematic, requiring great changes before the well-being of their inhabitants could be seen to have improved

In the mid-1960s, two major developments were responsible for the serious disruption of Aboriginal involvement in the pastoral industry. The first was the 1966 Pastoral Award, which instituted equal wages for Aboriginal and white employees in the pastoral industry. As a result, many Aboriginal workers lost their employment, and they and their families were displaced from the stations, squatting instead at known wells, along stock routes and in those places on stations to which they had a special attachment.

The second development was the Referendum of 1967, which recognised Aboriginal people as Australian citizens and gave the Commonwealth Government the right to count them and to legislate on their behalf. (Long 1979). The Aboriginal and Torres Strait Islander Commission (ATSIC) came into being, with its associated agencies, bringing some relief and also significant support for moves toward self-determination, though the system was dogged by favouritism and inefficiency. In addition the independent Nomads, the Aboriginal strikers of the DeGrey basin, were a source of inspiration to those in the Fitzroy attempting to achieve an autonomous lifestyle of their own. By the 1990s, however, only limited success had been achieved in establishing socially and economically viable Aboriginal pastoral and other communities, and problems of unemployment, welfare-dependency and anti-social behaviour remained.

The 1966 Award was not welcomed by those in the pastoral industry, who were experiencing financial hardship from falling wool and cattle prices - a situation which expedited the massive rejection and dislocation of family life as Aborigines were forced off the stations (Marshall 1988, Olive 1997). Citizenship rights brought alcohol-related problems, further affecting family welfare, employment and health in the makeshift camps (Cox, Dickie 1997, Mallard, William, 1997, Milgun 1997). In the 1990s Native Title was a further contentious litigation issue that led to some allocation of land for the Aboriginal people, and much concern on the part of the pastoral industry. Many of the grassmen were worried that they would lose their leases in the event of a successful claim. Failing to realise that the Aboriginal people were only seeking to secure their traditional connections with the land, many leaseholders were in a continuous state of anxiety, as land claims took years to sort out, resulting in the pastoral industry's inability to develop and expand, for where a claim existed over a pastoral lease, it was difficult to obtain loans for development, and initially impossible to arrange a sale (Price 2000). By the turn of the century, however, there was growing evidence of the capacity of indigenous, pastoral and mining interests to resolve Native Title issues by negotiation, rather than through costly and time-consuming litigation (Court 2000a).

12.2 Aboriginal People Pre-1970s: Some Examples

Prior to the introduction of award wages in 1966, several generations of Aborigines had lived and worked on the stations in the river basins. They had maintained their cultural and quasi-traditional heritages by meeting with groups from other stations and utilising the native flora and fauna for bush medicine and food to supplement the provisions provided by the stations (Olive 1997). In return for work, a few received a small wage, and all were given food, clothing, tobacco and medical treatment. The women cooked, chopped wood, swept floors, cared for children, did the washing and other general household chores as they had done earlier in the century. (Butler 1992, Milgun 1997, Cox, Yvonne 1997). The men were the drovers, stockmen, musterers, straggler-shearers, mechanics, windmill men, horse-breakers, fencers, carters, yardmen, dingo-baiters, kangaroo-shooters, contract well-repairers and truck-drivers, and performed a host of other duties necessary for the smooth running of a station (Cox Dickie 1997, Lewis 1997, McGibbon 19897, Starr 1996, Mallard, William 1997). Autonomy, however, and the possibility of obtaining award wages similar to the European population were mostly ignored, except where they had already been challenged in the DeGrey basin

A different scenario was experienced in the central Murchison basin, where the Wadjeri Aborigines were employed for meagre wages on Billabalong Station in the 1950s and 1960s. The station's two mustering outcamps had separate store accounts made out to their Aboriginal cooks, who collected the stores from the homestead. One enterprising gentleman paid Rosie Maher £2 a week to do his washing (Billabalong Station Store/Cash Book 1960-1962). The Aboriginal quarters were self-contained, with their own generator plant, well and windmill (Jeffries 1996b). Families on the station included the Egans, Dingos, Danns, Ryans, Ryders, Moongoos and Sandys (Billabalong Telegram Book 1966-1983). The Dingo family had taken its surname from an ancestor Dingo Jim who was a dogger on neighbouring Yallalong (Officer 1996a, Dingo 1997).

In the 1950s children were still being gathered up in the Murchison basin and taken to the Moore River settlement and other locations, an arrangement criticised by Robert Lefroy of Boolardy in 1958 as being unsatisfactory, as the children lost touch with their families and customs (Nixon and Lefroy 1989). The same process occurred in the Gascoyne where children were removed from their parents and sent to the Ingarda Mission in Carnarvon (Bidgiemia 1992) or Moore River (Dowker 1992). Children from the Ashburton went to Moore River (Olive 1997), and from the Fitzroy to Beagle Bay (Roe 1992) Moola Boola (Bedford 1996) or Moore River (Perry 1992). Some of the children found their way back to their families as adults; others never returned. Most, however, received something of an education, which they were later able to put to good use (Ryder 1995). Some fortunate children in the Murchison basin were sent by their parents to the Pallotine Mission near Mullewa. By the 1960s, these children were returning to the stations for the holidays (Billabalong Telegram Book 1966-1983). In the Gascoyne basin some children were willingly sent by their parents to the Ingarda Mission school in Carnarvon (Bidgiemia 1992), returning home for the summer vacation (Dodd 1992).

An example of maintaining the traditional cultural lifestyle during the 1950s and 1960s, was provided by the Mallards, Nanda Aborigines of the Murchison coastal region. They were drovers on the Geraldine Mine Stock Route between Shark Bay and Northampton, where the old native wells were used for watering the animals. The drovers, as they passed through, maintained the wells and their spiritual association with the strip of land, which was part of their Murchison River Dreaming Track. Between droving trips

they worked on the Murchison House or Tamala Stations, as stockmen, windmill men, musterers and horsebreakers (Mallard, Bill 1997).

Native Reserves during the period were situated on the fringes of Meekatharra, Carnarvon, Gascoyne Junction, Onslow, Marble Bar, Nullagine, and Fitzroy Crossing. The Aborigines, however, lived in squalor in humpies constructed from cast-off materials and with sanitation practically non-existent. Some men from the reserves were employed seasonally on the stations (Curley 1988, Clark 1992). Others were employed by Main Roads, worked on the wharves in the coastal region, cleared land for building, hired themselves out as builders' labourers, worked as yardmen at the hotels, carted water (Mitchell 1992), and took up any other casual employment that was available (Perry 1992). Women worked in the hotels at cleaning and washing (Injie 1992), and in private homes (Winder 1992). In the Murchison Goldfields, reserve Aborigines spent time prospecting, trading their findings for small amounts of money and food (Feehan 1992). Association with the station Aborigines was limited to the occasional visits to the reserves (Curley 1988)

In the Murchison headwaters the Aborigines, mostly the Wadjeri people, were housed in appalling conditions on the reserve outside Meekatharra. In 1962, Avey Curley, active in lobbying for better conditions in housing, education and equal rights for Aboriginal people, started the Bundi Club, which met in the old Meekatharra Court House. The women were given practical courses in cooking, dressmaking, and handcrafts, whilst the men learnt trade skills such as bricklaying, welding, building and plumbing. On completion of the course, participants were presented with an Adult Aboriginal Education Certificate. Some were able to find employment in the town or in the local pastoral industry. Curley also taught painting, craft, Aboriginal folklore, histories and Dreamtime stories (Curley 1988, 1997). The Gascoyne coastal Aborigines were on a reserve on the banks of the Gascoyne River at Yanget Pool, 2.5 kilometres from Carnarvon (Starr 1996). Homes were makeshift humpies and brush shelters (Lewis 1997). After the equal wage decision, many former station Aborigines, having nowhere to go, congregated there as well (McGibbon 1997).

12.3 The Post-1970 Situation

In the post-1970s environment the low socio-economic status of the Aborigines remained relatively unchanged for some years, despite legislation and the

growth of Aboriginal-oriented agencies. Most Aborigines were still uneducated and living below the poverty line. Traditional mores had previously retreated under the assimilation policy but, as land was allocated through the agencies, and community housing constructed, determined Aborigines began to speak for themselves. A desire to live their own devised lifestyle compatible with resurgence of their own culture was of prime importance. There was also a growing recognition of Aboriginal rights within the wider population of the river basins and the rest of the North West (Berndt 1985).

As part of preserving traditional mores, Aboriginal sites of specific importance were granted sanctuary under the Aboriginal Heritage Act 1972-1980. Disturbance of these areas was an offence under Section 17 (Department of Aboriginal Sites 1996). Mining companies were required, under the Act, to notify the Western Australian Museum of their intentions to develop mining enterprises, such as the Plutonic gold mine on the Gascoyne headwaters. The Museum, with the help of local Aborigines, located sites and searched for artifacts on a proposed mining area, which were then fenced off and recorded (Australian Groundwater Consultants Pty Limited 1989).

Aboriginal communities had access to the Aboriginal and Torres Strait Islander Commission (ATSIC), previously the Aboriginal Development Commission (ADC) for land claims, to the Aboriginal Land Funding Commission (ALFC) for the construction of buildings, water and power supplies, and other developments, and, albeit reluctantly, to the Community Development Employment Program (CDEP). Aboriginal groups found ATSIC fraught with favouritism (Mallard, William 1997), negligent in providing for community needs (Cox, Dickie 1997), and slow and cumbersome in submitting funding applications to the government (Simpson 1997). Further fuel for resentment was the purchase of stations and farming properties by ATSIC, with the agency holding the title deeds in trust, as part of the CDEP (Yamatji Regional Council 1995), and placing its own people on them (Mallard, William 1997), as well as remote advocates, without whom funding submission was not possible, who resided in the South West (Cox, Dickie 1997). Through the CDEP, ATSIC employed Aboriginal youth in the communities for a nominal wage of \$170 for 16 hours a week, to clear away rubbish, carry out repair work on the buildings, change lightbulbs, and tend the gardens, all of which was carried out in a lackadaisical manner on some communities (Cook 1997, Cuttiford 1997, Edwards 1997, Milgun 1997), but operated well in others (Taylor et al 1997, Warkley 1997). Complaints, however, brought little results. Community Councils could not dismiss

the youths and hire others more willing to work, such action being the responsibility of ATSIIC (Cox, Dickie 1997, Lewis 1997, Milgun 1997, Simpson 1997). In the late 1990s, the responsibility for land acquisition and management programs were transferred from ATSIIC to the Indigenous Land Corporation (ILC), in an attempt to subdue some troubled areas of land claims and community development (*Yamaji News* 1997). The Nomads in the DeGrey operated in a vastly different manner.

12.4 The Autonomous Nomads of the DeGrey Basin

By the early 1950s and following their Big Strike, the autonomous Nomads in the DeGrey basin (Figure 12.1) had organized themselves into a cohesive self-supporting unit of approximately 700 people. At the time abandoned pastoral leases in the Pilbara following the Big Drought, and the lack of an Aboriginal workforce, were a cause of concern for the authorities (SROWA 1959, ACC 1302, AN40/4, Item 2). With the proceeds from their mineral activities the Nomads purchased the deserted Yandeyarra Station (McLeod 1984). When the group split, the station was again abandoned, to be later taken up by previous Nomad members the Coffin brothers. By the mid 1950s the population of the original group was down to 350, operating in small mining groups near

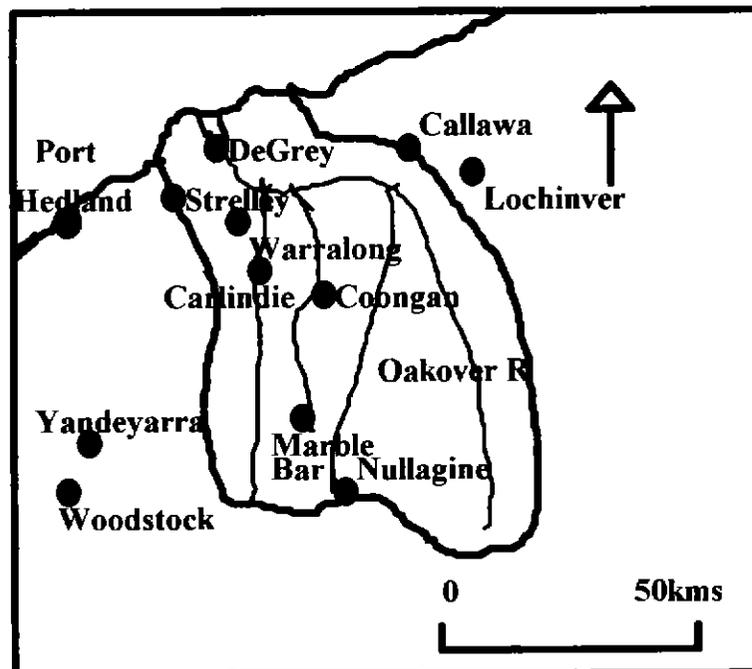


Figure 12.1: Stations connected to the Nomads in the DeGrey basin and the Pilbara

Marble Bar and Nullagine, working in Port Hedland, and with others back on the stations (Wilson 1989). From their communally-saved resources, the Nomads purchased first the abandoned Carlindie Station in 1967, which they operated as a cattle enterprise, then Strelley Station in 1972 (Taylor et al 1997, McCleod 1984). By 1976 they had incorporated the relinquished Coongan Station into the group's holdings. In that year the ground-breaking Remote Independent Aboriginal Community Schools, which were bilingual and the first in the river basins, were established at Strelley (Plate 12.1),

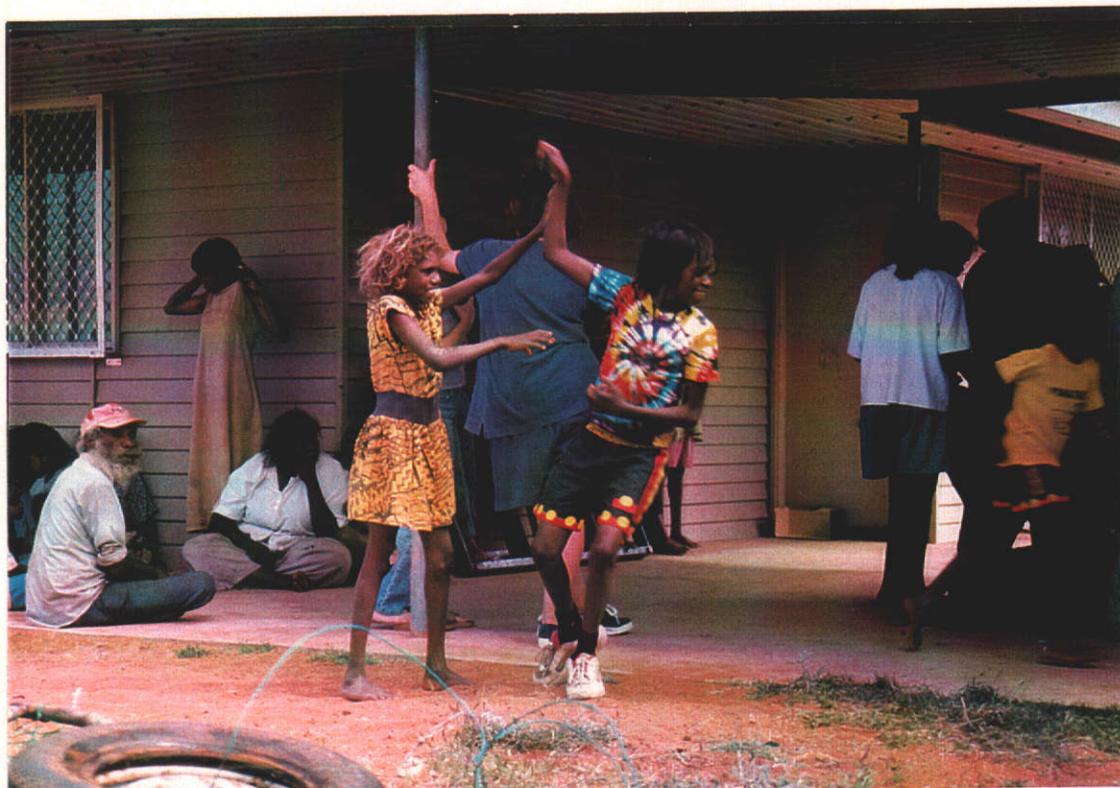


Plate 12.1: Children at the Strelley School during a School Board meeting and puppet show day. Clothes were designed and purchased through ALPA in Darwin, 3rd August 1997

Waralong and Woodstock. Both English and Aboriginal languages were taught and the community published its own text books (Warkley, 1997, *Mikurrunya* 1999). Other leases held were the abandoned Callawa, which the Nomads used as a summer outcamp (Taylor et al 1997). Dwellings on this lease included an administration building, two small one-roomed structures and a small school building. Raife Darlington's old Callawa homestead and outbuildings were not used and in 1997 were in a very deteriorated condition (Field Trip 1997). No stock were run on Callawa, and the rangelands were able to regenerate. Indeed, the Nomads were replacing the blackheart tree, thousands of which

were cut down and used for fence posts and other necessities during the pastoral industry's development years and the erection of the rabbit proof fence. They were also planting nardoo along the river frontages (Mitchell 1997, Taylor et al 1997). Further east in the Great Sandy Desert, Kennedy's abandoned 1920s Lochinvar lease, Gonnamina, was used as a dry-out camp for community members with alcohol problems from the towns (Warkley 1997)

Revered for their initiative in reasserting Aboriginal independence, the Nomads were welcomed as advisers to Fitzroy basin communities to help establish their bilingual schools (Cox, Dickie 1997, Warkley 1997) and during the Noonkanbah dispute in 1980 (Hawke and Gallagher 1989). The details of the education of their children through their schools, which were well-equipped, with the bilingual curriculum including lessons of traditional Aboriginal history, were determined by a school board consisting of community members. White teachers were employed by the community and not the Education Department. Approximately 100 children were spread between the Strelley and Waralong schools, with a further 60 at Woodstock (Warkley 1997). The community also had close links with other groups as far away as the Kimberley, and with the Arnhem Land Progress Association (ALPA), from whence clothes and other Aboriginally-orientated necessities were purchased (Taylor et al 1997, Warkley 1997).

Traditional mores were strictly adhered to and taught to the younger generation. The people hunted the kangaroo and other bush foods, to supplement provisions purchased in Port Hedland. Excursions for school children included trips to the mines or Port Hedland, the following of the 1946 strikers' trail, visiting the rivers and venturing into the desert. They also went on traditional hunting trips. At all times the trips included the white teachers and the old people (Taylor et al 1997, Warkley 1997). This community operated under its own financial resources, requiring little help from the Government or its Aboriginal-oriented agencies.

12.4 The Station Aborigines of the Fitzroy Basin

With the exception of the Nomads, displaced Aboriginal station people in the Fitzroy basin had stronger traditional cultural links to their land than their counterparts further south. Initially, when the Djaba people walked off Noonkanbah on the 15th of August 1971, they swelled the population of the recently established Native Reserve at Fitzroy Crossing to over 1000 people (Figure 12.2). In February 1974 group leader Friday

Muller wrote to the Minister for Aboriginal Affairs requesting a place near Noonkanbah for his people, to get them out of the town and away from alcohol and prostitution, and to create a better environment in which to rear their children (Hawke and Gallagher 1989), Cox, Dickie 1997). While they waited, they squatted in a paddock of the neighbouring Quambun Downs (Matthewson 1997). In 1976, Noonkanbah Station was purchased for \$540,544, the funding supplied by the ALFC. The former employees and their families moved back to Noonkanbah Station in September 1976 to run the lease as a cattle enterprise and develop Yungngora Community (Hawke and Gallagher 1989).

The 1980 Noonkanbah dispute arose when exploration company AMAX, with the endorsement of the State Government, ignored the pleas of the community elders, and encroached upon the sacred site Umpampura (Pea Hill) to search for petroleum deposits. The company's drilling rig, transported from Perth in a convoy of 50 trucks and escorted by a large contingent of police, literally gate-crashed its way onto the lease and, despite the drama, no oil was found (Hawke and Gallagher 1989). In 1997 the ramifications of the encroachment were still being felt by community members whose territory had been violated. Many suffered chronic depression, which exacerbated other illnesses including diabetes, scabies, chest complaints and stomach problems. Political

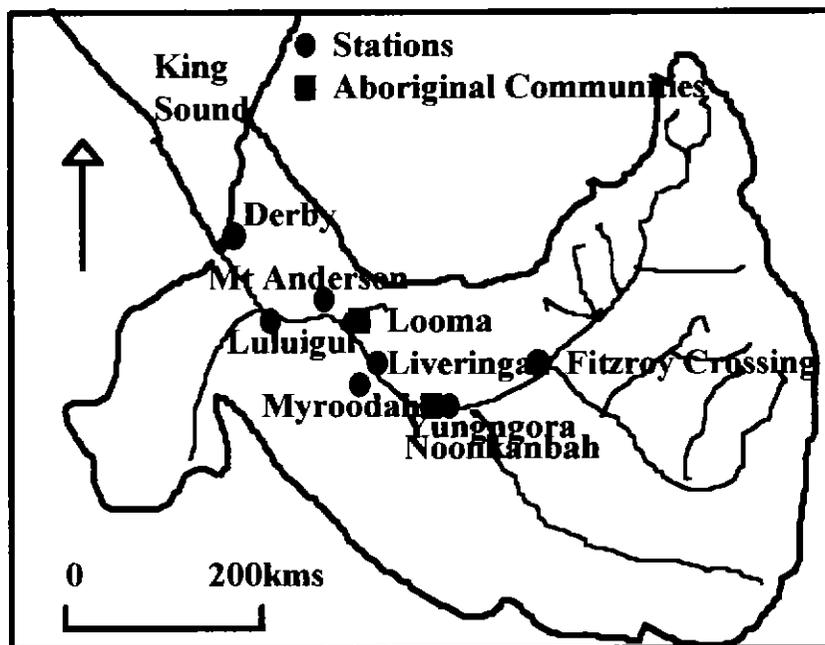


Figure 12.2: Stations and the Aboriginal Communities under study in the Fitzroy basin

infighting had split the community into three factions, with breakaway communities established at Worrinbah east of Yungngora, and at Korrabay south across the Fitzroy River. The new communities, however, remained dependent upon the schools, the store - which had been developed with the help of ALPA and the Nomads from the DeGrey (Hawke and Gallagher 1989), Western Power, and the health facilities of Yungngora (Cox, Dickie, 1997, Cox, Yvonne 1997).

With the infusion of successive waves of Walamaljirri people from the drought-ridden Great Sandy Desert in the 1970s, fragments of the traditional culture were revived at Noonkanbah (Kolig 1987). Community members not only used the rangeland and riverine resources for bush food, but were encouraged to practise the traditions of bush medicine (Cox, Yvonne 1997). The focus of the Yungngora Community Council in 1997 was education (Lefort 1997). The station was managed by an experienced community member, with others working, not only on Noonkanbah, but on surrounding stations as well. Other than station work, however, there was little prospect of employment for the young people (Cox, Dickie 1997).

A similar squatting situation occurred with the Liveringa Station Aborigines. When ALCCO's Jack Fletcher turned the Nigina people off Liveringa in 1972, they squatted beneath the brow of the culturally significant Looma Hills at the southern end of Grant Range (Milgun 1997). The area was four kilometres from the homestead on part of the old Stock Route Reserve 34268, a former camping and watering place for the Fitzroy River drovers (Figure 12.2) (Marshall 1988). The people had traditional links with strong cultural meaning on both Liveringa and neighbouring Mount Anderson Stations. The group formed the Looma Community, which also included people from Luluigui, Myroodah and other nearby stations. Similar to Noonkanbah, the Walamaljirri people also joined them from the drought-ridden Great Sandy Desert in the 1970s (Woia 1997). It had about 400 members and close familial and religious ties with the Yungngora at Noonkanbah, and the Aboriginal people who operated and owned Mount Anderson Station (Milgun 1997).

By 1997, the substandard dwellings provided 15 years previously by the Aboriginal Housing Board were badly run-down and seriously overcrowded. Nevertheless, the community had access to electric power, a large and well-run Community Development Employment Programme (CDEP) workshop, a store, also

developed through the ALPA, an excellent school (Plate 12.2), a Health Centre and meals on wheels for the elderly. The Health Centre also served the wider pastoral community (Edwards 1997, Anderson 1997, Milgun 1997). It was visited weekly by a doctor from



Plate 12.2: Looma's pre-primary, art school in the centre and administration office, 4th June 1997.

Derby, and staffed by a certified nursing sister and two trained Aboriginal nursing aides (Edwards 1997, Milgun 1997). Most problems facing the Community Council, however, were inadequate housing and refuse disposal (Edwards 1997).

As an example of what can be accomplished by self-determinism, a handful of Aborigines in the basin flew mustering helicopters, working for an Aboriginal-owned company in Fitzroy Crossing, while others had become expert tradesmen in welding (LeLievre 1997). Such activities, though small, could no doubt encourage youthful members of the communities to select their own specific targets for future stability.

12.6 Aboriginal Communities of the Murchison Basin: A Selection

As an example of the fight for self-determinism and needing a secure and permanent area to maintain their Aboriginality, family groups in the Murchison basin

accessed Native Title. On the coastal Murchison, the 260-hectare PWD Reserve 1475, Barrell Well, on the Geraldine Mine Stock Route, was also the Aboriginal Reserve 23777 associated with the nearby small rural settlement of Ajana (Figure 12.3). The Mallard family squatted at the well in 1972, at first housed in bough sheds and tarpaulins under the trees, and sought ways to acquire land that incorporated the stock route and native wells on Murchison House Station. In time the rough dwellings were replaced by corrugated

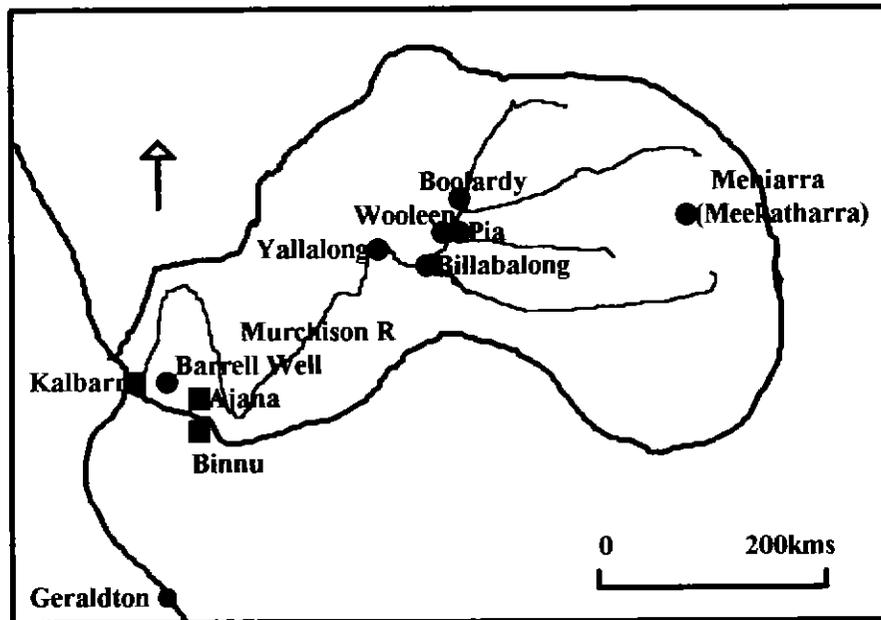


Figure 12.3: Location of Aboriginal communities and associated stations under study in the Murchison basin

iron structures, then conventional housing. An achievement for the community was the second prize received for Clean Communities Are Healthy Communities Competition run by Homeswest in 1996 (Mallard, Bonny and Peggy 1997). At the time the community had no water on site, as water from the old well was too brackish. Water was therefore delivered daily by a tanker from Geraldton at a cost of \$2000 per delivery (Plate 12.3). The project was funded by ATSIC. There were two possible water sites, but ATSIC refused funding for the drilling. No reason was given for this omission, but community members believed that it was part of a strategy to displace them (Mallard, William 1997). Subsequently, however, in September 2000, a permanent supply of water from bores was made available (Mallard, William 2000).

In 1997 the community had a population of 25, including six of the nine children who received their education at the agricultural settlement of Binnu, and were

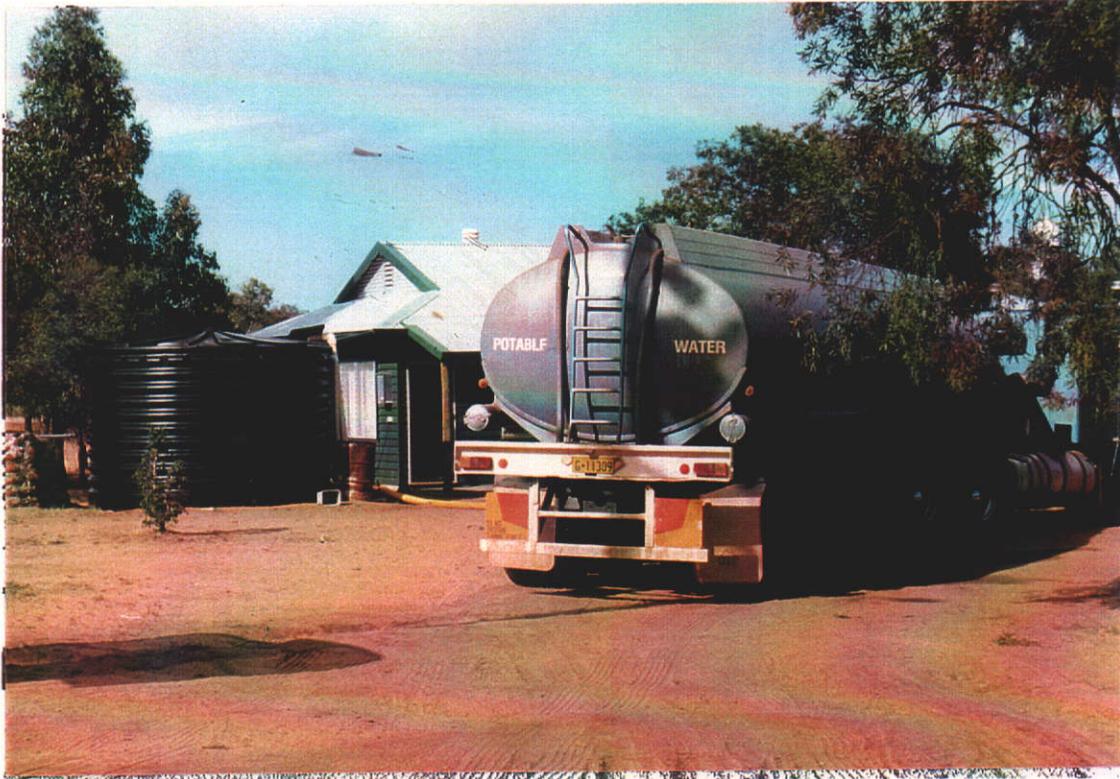


Plate 12.3: The ATSiC-funded water tanker at the Nanda Community, 22nd October 1997.

bussed daily to the school in the community's bus (Mallard, Peggy 1997). In 1997 they were still waiting the outcome of their native title claim, as a member of the Drage family from Yalgoo had laid claim to the same area, which was rich in Aboriginal heritage sites (Jackson and de Gand 1996, Mallard, William 1997). The Mallards, despite opposition from the leaseholder of Murchison House Station, endeavoured to maintain their stock route Dreaming Track and its native wells (Mallard, Bill and William 1997).

In the central Murchison basin, Reserve No. 297 (PLAP 1927) was relinquished by the Boolardy Pastoral Company in 1985 in favour of the local Aborigines, the Pia Wadjeri, who, during the 1970s, had moved off the stations and congregated at the overcrowded reserve at Mullewa after the wage decision. The Pia Wadjeri willingly moved in 1980 onto the land originally intended for them a century before (Figure 12.3) (Simpson 1997). Part of the landscape of traditional importance included the hill Budara on the neighbouring Wooleen Station, Mount Barloweerie on the reserve's southern boundary, and Father, Mother and Baby mountains near the site of the community. Of special significance to the Pia Wadjeri was Pia Spring, originally spelt Bia, where the water was used by the traditional Aborigines to save the lives of members of the Forrest expedition

more than a century ago. The spring, located at the base of a low sandstone conglomerate ridge, was covered by the community to protect it from evaporation. Rock walls were constructed on the sandstone to channel water from spasmodic rainfalls to replenish the spring (Plate 12.4). The reserve was home to some 40 people and, with funding from ADC and then ATSIC, the community constructed several homes, a school where the



Plate 12.4: Pia Springs with the community in the rear. Father and Mother Mountains are on the horizon, 17th May 1997

children had access to the School of the Air, a CDEP workshop, though the youthful recipients of the program were negligent in their duties, and an administration and meeting building. Factional fighting divided the community and Pia 2 was partially developed with two homes but later abandoned, its residents finding the isolation from the rest of the community difficult (Lawson 1997). Some of the Pia men obtained seasonal work on the surrounding stations and others on farms around Mullewa (Simpson 1997). Community member Yvonne Lawson learnt medical skills that enabled her to treat sick members through the RFDS. The community members also professed an interest in learning of the plants of their region, thus acquiring Mitchell and Wilcox (1994) from the researcher. Unfortunately for the community members, little was known of the traditional lifestyle of

their forbears and knowledge of the fauna was limited. The Men of the Trees also helped increase their botanical knowledge when they visited the community and planted many native trees and shrubs around the homes and compound (Lawson 1997).

12.7 Aboriginal Communities in the Gascoyne Basin: A Selection

In the Gascoyne basin the Burrungurrah Aboriginal Community was situated on 46 000 hectares of land excised from the old Mount James Station (Figure 12.4). The Wadjeri Aborigines who founded the community had been displaced from

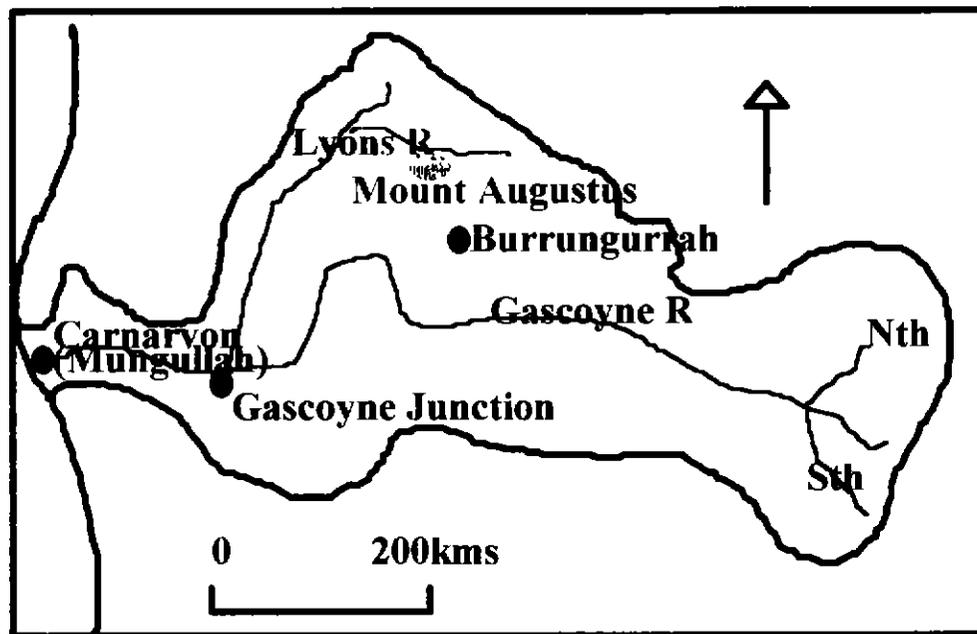


Figure 12.4: Location of two of the many Aboriginal Communities in the Gascoyne basin.

stations in the central Gascoyne, Murchison and Geraldton regions, moving onto the local reserves. With the allocation of land in the early 1970s community development commenced, with members living in humpies before their homes were built. Since then a number of iron and timber dwellings were constructed (Plate 12.5), and a modern store, privately owned by a community family, with a fuel outlet, was established. A pre-primary, primary and high schools were also constructed, with white Education Department teachers employed by the Community Council (Flavell 1997, Spicer 1997). Furthermore, adult education courses were conducted at the schools through the TAFE centre at Carnarvon (Tittums 1997). Power was provided by a Western Power generator, which employees serviced and repaired at no expense to the community (Contract Power



Plate 12.5: A corrugated iron and timber home, Burrungurrah Community, 11th August 1997.

Management 1997). The community's water was piped to the buildings from a nearby small borefield. Carnarvon-based nursing sisters visited the community each fortnight (Cook 1997).

The CDEP youth worked at grading the streets and the community access roads, preparing building sites for houses, helping with the plumbing, electricity and paintwork of the buildings, making fly screens, disposing of the rubbish and performing any other services that were needed. The necessary skills were acquired through the training programs held in the well-equipped CDEP workshop. This was the only community visited where the CDEP system was completely successful. Such were their efforts that the community was runner-up in the 1996 Tidy Community Competition, which was won by the Gibb River community in the North Kimberley (Cook 1997).

Members of the older generation in the community held some traditional association with the land, and still hunted the native fauna. Many of the rituals of the past had been lost, however, and the youthful members were more associated with urbanism than with traditional mores, fraternising frequently with town-based communities of Mungullah in Carnarvon and the Meniarra people of Meekatharra. In seeking to be

self-sufficient, the community was negotiating with the State Government, CALM and the Tourist Bureau to operate the nearby Mount Augustus tourist venture, which to the community was known as Burrungurrah from which their name was taken, and to control the Mount Augustus National Park. They had a spiritual attachment to the monocline, as well as with the nearby unusual Pink Hills. The application had been submitted for Mount Augustus in 1972, but the community was still awaiting a response a quarter-century later (Cook 1997).

12.8 Town-Based Communities

After the equal wage decision, Aborigines from stations in the Murchison headwaters moved to the overcrowded and inadequate Meekatharra Reserve (Figure 12.3). Citizenship rights brought alcohol-related problems and arrest rates soared. Aboriginal activist Avey Curley was the driving force behind the construction by the State Housing Commission of Aboriginal homes in the town (Plate 12.6), that helped to relocate many of the dissatisfied and unhappy people from the reserve. As recognition of her 40 or more years of service to the Aboriginal people, Curley was awarded the Order of Australia Medal in 1980. In 1984, she was Chairman of the Aboriginal Housing Board with the



Plate 12.6: A neat home in Meekatharra, Meniarra Community, 15th August 1997.

State Housing Commission, then was appointed an Aboriginal Legal Aid officer. Tireless in her activities, Curley also taught Aboriginal arts and crafts at the high school, lobbied and was instrumental in providing lunches for Aboriginal children at the school, and worked with the eye specialist Dr. Fred Hollows. Curley was well-known for her carving of emu eggs, with one presented to the young Queen Elizabeth in 1954, and another to Prince Charles in 1979 (Curley 1997).

In the 1990s, the Bundi Club was still operating in the old court house, surrounded by numerous buildings including a resource centre. IAFE courses were also available to the people (Curley 1988, 1997). Unfortunately employment in the small town of Meekatharra was scarce. Some work was available with the surrounding mines and seasonal jobs were available in the local pastoral industry (Garrity 1996). Traditional links with the land, which had persisted in the station environment now ceased, though aspects of Aboriginal culture were maintained through visiting other communities. Large gatherings of Aborigines from the surrounding district, the desert-based people, and others in the basins further north often occurred in the town (Curley 1997).

During the early 1970s in Carnarvon in the Gascoyne basin, the people desired to transform the Yanget Pool River Reserve into the Jigabiddi Community, but serious flooding from the Gascoyne River in 1981 forced relocation to higher ground. The Mungullah Aboriginal Community was established in that year on the outskirts of Carnarvon below Brown's Range (Lewis 1997, McGibbon 1997, Cuttiford 1997). Its members were from several language groups of the Murchison, Gascoyne and Ashburton districts. As happened in the Murchison basin, they lived in tents until homes were constructed by the State Housing Commission and a nominal weekly rent was charged. In 1997 there were 51 houses with a population of about 150 that continually fluctuated as residents visited other communities, such as Burrungurrah in the central basin, or were visited themselves, sometimes for weeks at a time. Included among the buildings was a CDEP workshop for the youth, which operated under the same program as in other communities. Unfortunately, the youth were negligent in their duties, having a preference to the nearby urban attractions (Cuttiford 1997).

Mungullah children were bussed to Carnarvon schools by school bus, and under the supervision and encouragement from the Best Start Coordinator Noel Cuttiford, who was hired by the Community Council. Of importance to the mobile people was the

special program for a uniform curriculum that Cuttiford developed, where children visiting either Mungullah or Burrungurrah could attend the schools and continue the same studies (Cuttiford 1997).

Mungullah men found seasonal employment on the stations, in the fishing industry, with Main Roads, the Shire of Carnarvon, or local tradesmen, and a few women were trained then employed in the community's office. Traditional mores were seldom practised, and their loss was mourned by the old people, who missed the days on the old reserve when large meetings were common. Retired stockmen missed their previous station life and the inability to pass on their skills (McGibbon 1997, Lewis 1997).

12.9 Aboriginal Tourist Operations in the Gascoyne, Ashburton, Fortescue and Fitzroy Basins

There were 28 communities around Carnarvon and several more throughout the Gascoyne basin, and various programs were organised for education and training of their members (Shire of Carnarvon 1997). The TAFE-based Cultural Tourism Certificate II course was available, which enabled Aborigines to learn the rudiments in tourism, then participate in the actualities of running a tourist business. In 1999 a trial tourist programme was successfully conducted at Coral Bay, involving the students and elders of the Baiyungu people (GDC 1999). Programs to enable Aborigines to participate in tourism management were also presented by the Aboriginal Economic Development Office (AEDO 1997).

After the enforced removal of Aborigines from the stations in the Ashburton and Fortescue basins, most drifted to Onslow, Roebourne and Port Hedland (Olive 1997). These people were more traditionally-oriented than those in the Murchison and Gascoyne basins, using the rangelands for traditional food, conducting traditional rites and passing on the language and culture to the younger generation.

The Makathunni Community was established by Karijini Aboriginal Corporation members in 1993 on the Rocklea lease between the towns of Tom Price and Paraburdoo (Figure 12.5). Of especial significance to the people was Mount Truckanas on the western boundary of the community (Cooke 1997). The community members had a strong association with the land that incorporated parts of the Gascoyne, Ashburton and

Fortescue basins and two pastoral leases, Mulga Downs in the Fortescue and Rocklea in the Ashburton (Olive 1997).

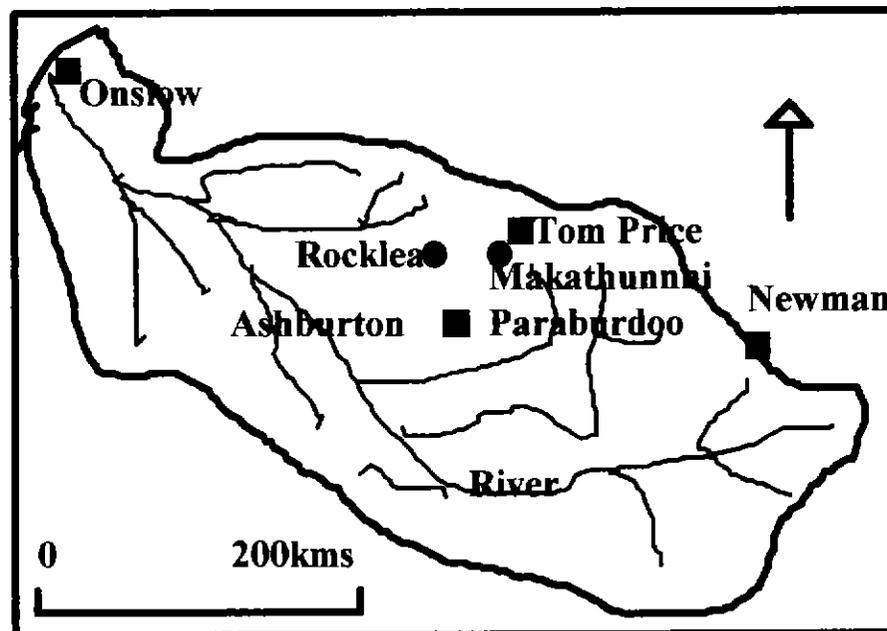


Figure 12.5: Location of the Makathunni community in the Ashburton basin

By 1996 two houses had been constructed and ground was being prepared by the CDEP, for construction by outside contractors of an old people's home, quarters for single people, and steel-framed homes for waiting families (Plate 12.7). The work included sewerage and water piping. Most members waiting for homes were living in corrugated iron huts or caravans, with electricity provided by a 240v generator. About 76 people lived at the community. Association with Aboriginal groups elsewhere was evident, as a large number had travelled to Meekatharra in 1997 for a funeral (Cooke 1996).

Some Makathunni men were employed by Hamersley Iron (HI) on the nearby Tom Price mine, with the Main Roads, or in their own community with the CDEP. Children attended the Tom Price schools. Similar to communities in the other basins, however, work was restricted to a few, and many were unemployed despite the education plans of nearby HI for developing mining skills, which included lecturing HI employees on Aboriginal culture and specialised training for some community members in the mining field (Hamersley Iron 1991). There was little likelihood, however, of the youth being employed at the completion of their schooling. As an incentive towards self-determination,

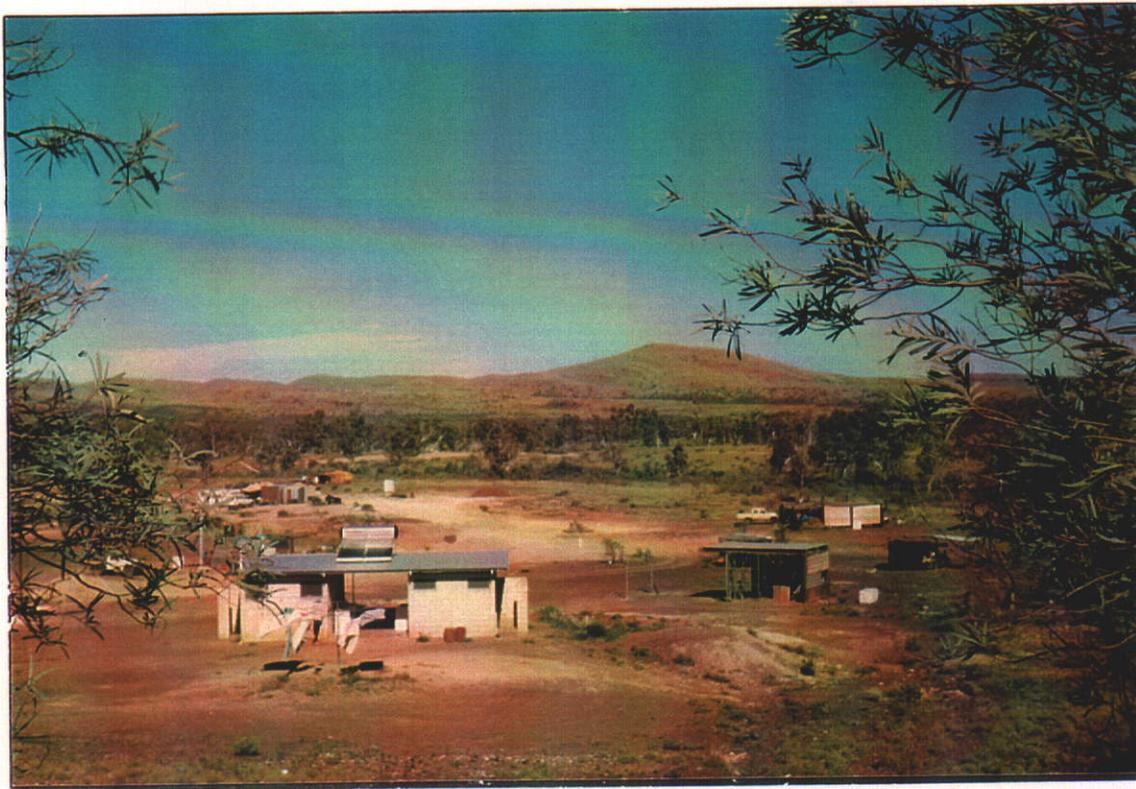


Plate 12.7: The Makathunni Community site, with the workings evident for further homes. The significant Mount Truckanas is on the horizon, 20th August 1996

plans had been implemented to develop a nature trail for tourists across the community's rangelands, in conjunction with the Tom Price Tourist Bureau (Cooke 1996).

In the Fortescue basin there were three Aboriginal language groups, Punjima (Bandjima), Innawongga, and the Indjibandi, also of the Karijini Aboriginal Corporation, who successfully ran tourist enterprises. The Elders of the Punjima and Innawongga people sought to gain the best of both worlds for their people by re-establishing traditional ties with the land, by providing employment for the future generations through education and training programs involving tourism, environmental protection, rangeland rehabilitation, and the mining industry (Nickerson 1993). The Punjima and Innawongga were joint managers with CALM of the 605 597 hectare Karijini National Park since 1991 (Figure 12.6). The group conducted successful Walkabout Tours through the Hamersley Range, where their tourism headquarters housed a museum, art gallery, tour information and a refreshment shop (Plate 12.8) (Nickerson 1993).

The Indjibandi had worked with CALM since 1982 in the 200 000-hectare Millstream-Chichester National Park. The area was the former Millstream Station and a

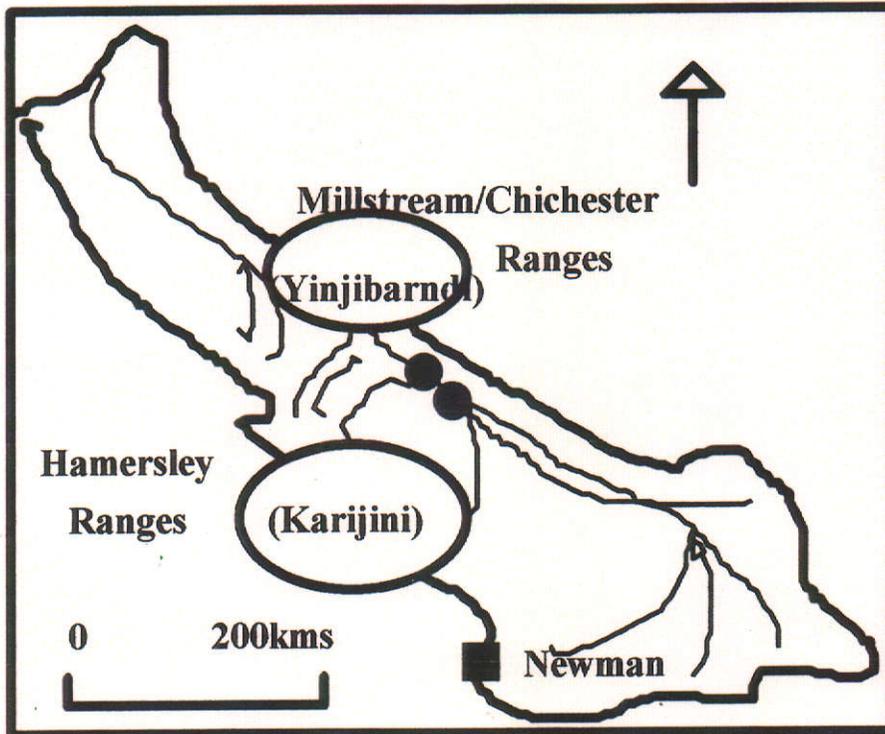


Figure 12.6: Aboriginal tourist ventures in the Fortescue basin

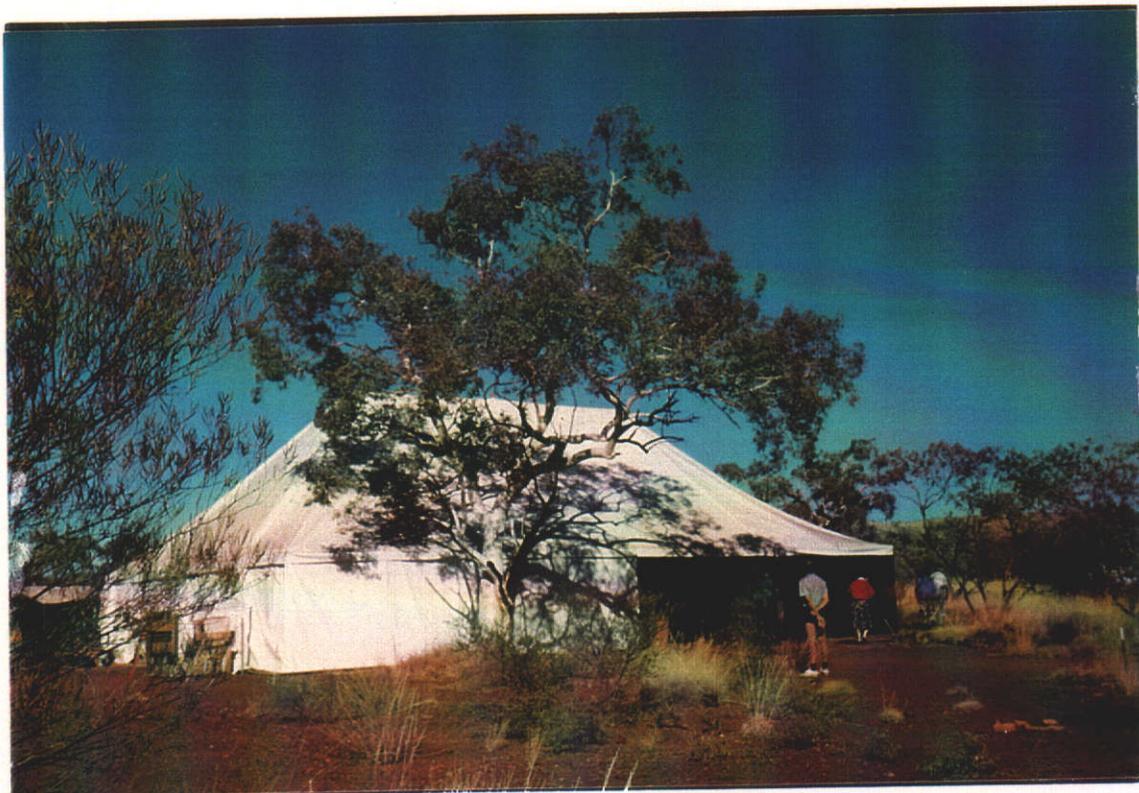


Plate 12.8: The Karijini Aboriginal Corporation's headquarters, July 1994. The marquee was replaced with a permanent building by 2000.

focal point of the Aboriginal people, particularly Nagarri (Millstream), where the Chindewariner Pool was an important campsite for inter-tribal meetings. The Indjibandi were trained and employed as rangers, officiating in and developing some of the walk trails bordering the Fortescue River. Tourists explored the homestead grounds adjacent to the river, to view the Millstream Springs, date and cotton palms planted by the early settlers, and the Millstream Palm. Along the Fortescue River were large pools edged with cadjeputs, Millstream Palms and other shrubs and perennials, once the scene of foraging stock, but lined with campers and camping facilities. The Indjibandi were contracted to clear away date palms, cotton palms and the water lilies around the Fortescue River and Millstream Springs. The Indjibandi also provided information of the area for tourists at the ranger's office in the old homestead, with its pastoral and Aboriginal artifact museum (CALM, Millstream 1996).

At Fitzroy Crossing in the Fitzroy basin the Darlanguyaya Aboriginal Corporation appeared to be the only community in the basin involved with tourism. Members worked with CALM conducting boat tours of Geikie Gorge, introducing traditional bush tucker to the tourists as well as telling Dreamtime stories (CALM, Geikie Gorge 1997). The versatile Corporation also owned the historic Crossing Inn, a caravan park, and operated a backpackers' establishment (Darlanguyaya Backpackers 1997).

12.10 Conclusion

Aboriginal culture, society and economy was subjected to dynamic change in the river basins following the massive alterations to the official status of Aboriginal people in the mid-1960s. Displaced station people eventually developed into familial community groups, the members becoming more active in seeking and accomplishing change, hopefully for the better, though it was a hard road fraught with difficulties. Aboriginal communities, however, were developing their own small urban settlements without benefit of a shire administration, which might have serious consequences in the future. The problematic ATSIC and its agencies were faced with the challenge of providing better services to raise the depressed standard of living of most settlements. Town-based communities, though small, could eventually be expected to have a beneficial effect on the wider population as barriers were broken down and children mingled in a mixed society. Those Aborigines involved within mining communities portrayed their willingness to participate in what mining companies had to offer, whilst others were

devising schemes that were beneficial for the drought-affected and overstocked rangelands. Even the independent Nomads, who had led the way in bilingual education, would eventually become involved in the wider community, as the older population passed away, and the younger ones developed ideas of community living of their own, and in keeping with the older traditional values of their ancestors. They too, were regenerating the rangelands, with those in the Murchison basin striving to follow. Furthermore, an increasingly mobile population was spreading ideas, language and culture among the communities, not only within their own groups in the river basins, but in the wider Aboriginal society as well, that might well have a more beneficial effect on Aboriginal lifestyle and culture, particularly when coupled with the bilingual education programs devised by the community school boards for the children (*Yamatji News* 1997, Shaw 2000). The presence of a small but growing number of skilled Aboriginal artisans epitomised the changing indigenous environment. It was even possible that the Aboriginal community settlements in the river basins could evolve into economically sustainable service centres which owed their existence to neither the pastoral nor mining industries. One could foresee the development of Aboriginal-oriented towns in the river basins, increasing the population of the North West in a way not envisaged by the North West Consultative Council of the late 1940s.

Chapter Thirteen

Conclusion

The study of the appropriate academic studies, AN files and AGWA reports, interviews with rangeland scientists and with rangeland users, personal traverses of the rangelands, the investigation of station primary sources and information related to their historical background revealed that early rangeland problems, particularly along the stock routes were related to dry seasons and movements of teams and stock. Major rangeland problems occurred during the Big Drought of 1936 to 1946, due to an impracticable ECC and overstocking by corporate leaseholders. Later during the 1960s rangeland problems were largely due to increased activity by speculators. From the beginning of European penetration, however, the succession of people who became acquainted with the river basins viewed the environment from different perspectives.

First were the early seafaring explorers, who perceived the coastlands as inhospitable, considering them not worthy of their attention, and the Aboriginal population as primitive, lacking any worthwhile goods suitable for trading. Following terrestrial explorers noted the good grasses in the basins as they traversed the landscape under conditions of varying difficulty. Robert Austin's record of the severity of a drought in the rangelands was unfortunately ignored after the later explorers encountered a well-grassed landscape. The Aborigines they encountered had lived in the diverse environment of the river basins for thousands of years, nurturing the rangelands by a nomadic lifestyle which was also in keeping with their religious beliefs. They were unimpressed by the pottery kilns, huts and vegetable plots of the visiting Macassar fisherfolk. During their period as sole occupiers, the rainfall, despite its unreliability, was sufficient to regenerate the vegetation, flush the river systems and replenish the underground water supplies. Afterwards the early grassmen were able to view the shrublands of the Murchison, Gascoyne and Ashburton basins, the steppes of the Fortescue and DeGrey basins, and the monsoonal grasslands of the Fitzroy basin as a source of income through their pastured stock, the Aborigines as a cheap labour force to help them develop their leases, and the Government in its zeal, providing the regulations to create a well-stocked and neatly laid-out landscape.

It is clear that the process of settlement in the river basins was different from that of the eastern colonies, as the first European settlers to the North West were legally able to acquire sufficient land for a pastoral enterprise, for the colony's land laws

and system of pastoral land allocation were in place before settlement occurred. As pastoralism spread, however, although the perceptions of both Aboriginal and European rangeland users changed, official attitudes were not swift to follow. The grassmen's knowledge of the environment increased with experience, but their perception of the Aboriginal people was to remain unchanged for many years. In contrast, most Aborigines adapted relatively easily to the lifestyle of a station workforce but, a century or so later, after dislocation brought about by their changed social and economic circumstances, set about establishing their own communities and attempted a large measure of self-determination. For most of the 20th century the Government and its agencies wrongly identified a potential for pastoral intensification of the rangelands in the river basins. The devastating Big Drought, however, and the continuing depletion of the native vegetation in the years that followed kept stock numbers almost 50% lower than the 1920s. Politicians and others failed to understand the limits set by a difficult environment, particularly with reference to climatic variability, and the inability of the rangelands to make a quick recovery after overgrazing or drought.

As discussed earlier, any phenomenal environment is an elusive entity not fully understood. No grassman in living memory knew what the rangeland environment was like before pastoral settlement. Neither did the rangeland scientists or the officers of the PB, who relied upon earlier spasmodic and scattered field reports. Over time, however, the Aborigines who adapted to the changed lifestyle, the grassmen and finally most government agencies, gained an understanding of the phenomenal reality and future potential of the environment of the river basins and adjusted, to some extent, the stock numbers according to each land system and the vagaries of the climate. The limited environmental perception was demonstrated by the management of the large mining ventures in the central Fortescue basin and the northern reaches of the Ashburton, where their extensive mining activities posed an environmental risk to the Hamersley and Ophthalmia Ranges and their associated riverine ecology .

The Big Drought had been responsible for major vegetation loss in the Murchison, Gascoyne, Ashburton, Fortescue and DeGrey river basins. The PB's unsympathetic response to the complaints from the troubled grassmen and its inability to control the stocking rates of corporate leaseholders during the period accelerated the rapid deterioration of the rangeland resources. In the Fitzroy basin rangeland degradation was

the product of a century of overstocking followed by attempts at irrigated agriculture, which left the pastoral industry of that region facing serious problems of grass shortage and economic and financial difficulties.

The reality of the harshness of the environment in the river basins was not understood by postwar government and its agencies, with regeneration plans which Fyfe had deemed essential, if extremely costly, after the Big Drought being virtually ignored until much later. Unfortunately it took over 30 years before there was official recognition of the rangeland problem and the beginning of a concerted effort at rehabilitation, the government preferring in the interim to concentrate upon the development of road systems and services in the North West.

The expanded provision of services as recommended by the North West Consultative Council was responsible for a small initial population growth in the towns of the North West, which was followed by vast increases with the burgeoning of tourism and the spread of large-scale mining. The consequence mushrooming of urban functions was of direct benefit to the pastoral industry, which profited, in addition, from better roads, enhanced transport facilities, swifter delivery of goods and mail, improved health provision and easier access to southern markets. Thus the population increase envisioned by the Consultative Council became a reality while, ironically, the numbers of people directly involved in pastoralism shrank.

The expansion and contraction of employment in the pastoral industry over 100 years of rangeland use reflected changes in the methods of animal husbandry. The first 80 years of European rangeland management saw the development of large sprawling homestead complexes, with paddocks, watering points and outcamps constructed away from the waterholes and river frontages. During this period a large workforce of Aborigines, experienced white men, and a considerable number of horses, donkeys, camels and oxen were indispensable. As mechanisation advanced following World War II, and the shortage of skilled employees increased, outcamps dwindled, the workforce was reduced and working animals became progressively redundant, their tasks being taken over by motorcycles, four-wheel drive vehicles and aircraft. Homestead complexes, which had grown to resemble small villages by the late 1920s, had shrunk in size by the 1940s, experienced a brief growth spurt in the 1950s, only to dwindle again in the 1970s after the departure of the Aboriginal workers and their families. Further changes occurred with the

changeover from sheep to cattle on many properties, with the consequent requirement of fewer watering points, larger fenced paddocks, or no fences at all, and a much smaller workforce. Marginal areas had remained problematic since the Big Drought, and some leaseholders' tenure would be terminated in 2015. Their properties would most likely be amalgamated with other leases, to create larger and potentially more successful production units.

Experienced grassmen continued to perceive their stations as providing an ongoing regular income through careful management of stock, feral animal eradication, and conservation of the rangeland resources. Despite market fluctuation and price uncertainties, many were able to consistently generate a viable income. The Fitzroy basin was the exception, with land degradation severely hampering pasture availability, and requiring regular burning to provide green pick for the cattle during the dry seasons. Unfortunately the decision-makers, despite their expressed concern for the welfare of the rangelands, mostly failed to seek the advice of experienced grassmen, who knew the rangelands better than any official group or environmentalist organisation, as its resources constituted their livelihood. Similarly, although rangeland scientists considered that the rangelands should be grazed regularly, at a level reflecting the capability of the land systems involved, the PB allowed rangeland abusers to continue to operate leases that were overstocked and degraded, despite threats of lease forfeiture. Nevertheless, the rangelands under the hands of the grassmen in the Murchison, Gascoyne, Ashburton, Fortescue and DeGrey basins, had regenerated quite remarkably over 50 years, although problems remained with vermin and feral animals.

In the modern era, vermin control was mostly left to the leaseholder. The protected status of fauna, however, was causing problems. Some stations, for example, had as many as 12 000 kangaroos, which were a protected species, in competition with pastured stock for the foraging grasses. If local grassmen could be systematically involved in culling the kangaroos for pet meat, there was a prospect, not only of controlling numbers, but of a lucrative diversification sideline as well. Goats were troublesome, with few leaseholders taking advantage of the economic opportunities which their presence created. Other feral intruders requiring control were the camels in the eastern portion of the DeGrey basin, wild pigs on the Fitzroy River frontage, and the dingoes in the eastern parts of all basins except the Fitzroy.

Save for some station lucerne patches, agricultural production on either a small or large scale was a failure in the river basins, except on the fertile Delta Land System at the mouth of the Gascoyne that was fed by the spasmodic flooding of the river, and irrigated from the aquifer under the river bed. The aridity of the four other basins, together with their skeletal soils, was a major drawback to cultivation, but the failure of the Fitzroy basin could be attributed to other causes. Early attempts at tropical agriculture on the lots of Knowsley and Udialla Agricultural areas were frustrated by flooding and market inaccessibility. Thirty years of subsequent attempts at irrigated agriculture from the 1950s sanctioned by an eager but ignorant State Government, failed through a variety of factors, including depredations by insects and birds, flooding and, most important, inadequate research into the true potential of the Fitzroy floodplain. Despite such costly and damaging failures, at the time of writing, agricultural operations were again under consideration, this time for the difficult Pindan country away from the river frontages.

In contrast to the positive effect in the late 19th and early 20th century of relatively small-scale mineral exploitation on the economic well-being of nearby grassmen, most late 20th-century mining activities were carried out on a large scale, with seemingly minimal impact upon the pastoral industry, for its transport network was geared almost exclusively to meet the needs of the mining companies, with employees in all but a handful of mining communities operating under a fly-in fly-out arrangement. Certainly some stations had been acquired and were being modernised by mining companies, and cattle were periodically run-over by ore trains. More serious, however, was the exploitation by the mining industry of underground water supplies, and the river floodplain vegetation, the effect of which was already being felt upon the ecology of the Fortescue headwaters. Neither could the replacement of mountains with revegetated waste dumps enhance the rugged beauty of the Hamersley Range. Such changes to the topographical features of the range could well have an effect upon the higher rainfall that this area receives compared to the rest of the basin. The emergence of similar problems in the DeGrey, Ashburton and Murchison was also being signalled, as bores and wells were threatening to run dry. Furthermore, mining companies' revegetation programs frequently involved the establishment of native species unsuitable for the demands of foraging stock.

Despite also the emergence of winter tourism as a major income-generator for most towns, the massive seasonal influx of visitors had little positive impact upon the pastoral industry. Indeed, there were increasing concerns that tourism might have a

serious detrimental effect upon the environment, particularly with reference to riverine ecology. Sunbirders camping for the winter months beside river waterholes near major highways, the movement of four-wheel drive vehicles across dunes and other fragile landforms, the depositing of litter willy-nilly on roadsides and in paddocks, and the wildfires started by unattended campfires and exhaust sparks could be just as deleterious to river banks and other areas as the trampling of domesticated and feral livestock. Grassmen complained of the damage to their access tracks, failure to shut paddock gates, unauthorised camping beside windmills and waterholes, and disturbance of livestock. A handful of stations such as Wooleen, Mount House and Erong Springs, however, operated successful station-stay programs for tourists, as a lucrative sideline to their pastoral enterprise. Similarly, a small number of recently formed Aboriginal communities were striving to reduce their dependence on welfare handouts by becoming involved in the tourist industry.

With the coming of Award Wages, the granting of citizenship rights and the recognition of Native Title, Aboriginal families were uprooted from their pastoral stations and chose either to relocate on the squalid native reserves on the fringes of the towns, or to accept the practice of living in community groups with a commitment to self-determination. Even further adaptation was necessary to accept community living in family groups, where they were striving for the right to organise their own lives through self-determinism. Indeed, the landscape of the river basins was dotted with Aboriginal communities whose population, for the most part, no longer used the land in the traditional ways, and were bereft of a local government infrastructure. Perhaps moving towards the development of urbanism of a different kind in the river basins, the communities functioned as entities largely separated from the white Australian world, with most members nevertheless dependent on Government handouts of one type or another, and only a few being employed locally or in the larger country towns. Unemployment, alcoholism, other addictions and the general disaffection of youth were ongoing problems. Hopefully the bilingual education programs provided in the community schools would contribute to the ultimate creation of a new Aboriginal cultural environment of people who had knowledge of, and respect for, both worlds, and who could rationally select that which they considered appropriate for their lifestyle and well-being. Furthermore, the adaptation into communal living coupled with increased mobility, had resulted in the widening of the traditional ephemeral boundaries.

While the future of the grassmen was by no means as insecure as that of the Aboriginal community-dwellers, they were critical of a Government which demonstrated no real commitment to help the pastoral industry remain solvent. Furthermore, with the threat of Native Title never far removed, there was no motive and little opportunity for such men to convert their business into more viable operations, in order to cope with market fluctuations. Being, by and large, producers of a single commodity, they needed realistic cattle prices at the markets or higher returns from wool to help ensure economic sustainability. They also strongly advocated a more careful screening of those who applied to purchase pastoral leases. Aboriginal communities, mining activities and tourism all had an impact on the rangelands, with community urbanism resulting in small towns in urgent need of the infrastructure of indigenous local government, with mining posing threats, not only to indigenous material cultural heritage but also to local hydrology, and with tourism associated with increasing instances of environmental irresponsibility. Meanwhile, grassmen continued to adjust their stock numbers through culling and selling, according to the seasons and pasture availability, with the aim of avoiding overstocking at any time, if possible. Overall, however, the future of the industry, while generally bleak for the Fitzroy basin leaseholders, appeared less discouraging to most leaseholders in the other river basins.

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