REPORT TO REMP COMMITTEE – CAR RESERVE SYSTEM ESTABLISHMENT IN THE GMS

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Background

The vision for environmental protection in the Strategy region clearly recognizes the need for the creation of a comprehensive, adequate and representative (CAR) conservation reserve system. There is also recognition of the need to address the conservation of biodiversity on land that remains outside the conservation reserve system through the establishment of cooperative management agreements with pastoralists. The development of these issues in the Strategy is related to National and State policy settings aimed at improving the conservation reserve system to internationally accepted standards.

In general, conservation reserve systems allow for the management of land to achieve outcomes otherwise not achievable under other land management systems. The objectives of conservation reserve management range from the provision of recreation and tourism opportunities centered on attractive scenic values, to the protection of species and their habitats considered threatened by developmental activities.

As a result of a national audit of the status of the conservation reserve system across Australia, it has been shown that the reserve system within the GMS region is inadequate and biased.

The historic development of the conservation reserve system in Western Australia, like most other countries, has been undertaken on an *ad hoc*, unscientific basis, often focused on land that was not required for agricultural development due to its inherent low productivity or isolation.

One of the key challenges to be addressed in setting out to design a CAR reserve system is the lack of biological inventory information including taxonomic data over the majority of the Strategy region. Given this major shortfall in even the most basic information about biodiversity, it has been necessary to consider the use of a suitable surrogate as an indicator. Reserve system selection criteria that recognize, amongst other things, land surfaces or vegetation associations assumed to reflect a degree of diversity have been utilized as a suitable surrogate for broader biodiversity. Other information has been

utilized alongside vegetation associations, and includes the identification of centers for diversity (often referred to as 'hotspots'), and detailed results of biological surveys where available.

Other challenges relate to the acquisition of suitable land within the Strategy region where extrinsic features such as competing land uses, land degradation, and the introduction of exotic plant and animal species, make the achievement of establishing a CAR reserve system difficult.

Selection process

The assessment and evaluation of the conservation values contained within a pastoral lease offered for sale is completed using a range of information including vegetation associations, land system mapping (where available), biological survey results, special features such as riverine systems which are poorly represented in the existing reserve system, wilderness areas, and information about plant or animal species and ecosystems having special value.

A gap analysis is conducted using vegetation association information to determine changes in the level of representation of ecosystems already within the reserve system, or to identify ecosystems that are not currently represented. This analysis is completed at the time each new proposal is assessed. The aim of this process is to improve the comprehensiveness of the reserve system by acquiring land containing ecosystems not within the reserve system, while also improving the level of representativeness of ecosystems having less than 10% of their original areal extent within the reserve system. Pastoral land containing high diversity, which is in relatively good condition - identified in Rangeland Condition Survey Reports (Department of Agriculture), sustain relatively low levels of feral animals and weeds, and which is adequate in size, are prioritized for acquisition. Other issues such as boundary to area ratio, shape of the land area, and infrastructure condition are also considered in the assessment and evaluation process.

The focus of the acquisition program has been within the biogeographic regions (defined by the Interim Biogeographic Regionalisation of Australia – IBRA – process) identified as having a high priority for improving the conservation reserve system. While there are parts of eleven IBRA regions within the Strategy region, there are four having high priority accounting for the majority of the area, viz. Carnarvon – 12.7% of region, Gascoyne – 27.9%, Murchison – 31.1%, and Yalgoo – 6.5%. The area of each IBRA region, shown in hectares, and the proportion of the Strategy region they make up (expressed as a percentage), is shown in the table below.

IBRA regions of the Gascoyne-Murchison Rangeland Strategy region

IBRA reg.	Area, ha.	% of reg.	Priority for res'n.
Avon Wh.	443,448	0.75	1
Carnarvon	7,503,038	12.7	1
Coolgardie	39,434	0.07	3
Gascoyne	16,556,816	27.9	1
Gtn. Sand Plains	1,469,471	2.5	2
Gibson Desert.	1,401,463	2.4	3
Gr.Victoria Desert	1,282,733	2.2	3
Little Sandy Desert	7,966,898	13.4	3
Murchison.	18,430,888	31.1	1
Pilbara	301,222	0.5	1
Yalgoo	3,857,659	6.5	1
	59,253,071	100.02**	

****note small error in sum of % due to rounding**

Negotiations over purchase price, and other conditions of sale are conducted with pastoralists on a voluntary basis following the provision of a lease valuation by the Valuer General's Office.

CAR reserve system – regional overview and status report

At the beginning of the land acquisition program in 1998, there were about 1.4 million hectares of land in the conservation reserve system representing about 2.4% of the Strategy region. Almost four million hectares of pastoral land containing high conservation values has been acquired for inclusion in the reserve system to this point in time bringing the total area of land in the Strategy region now managed for the conservation of biodiversity to 5.4 million hectares, representing about 9% of the Strategy region – see Appendix 1 for leases or part leases purchased in the program. However, the increase in area along should not be seen as the most important outcome of the program, rather the improvement in the comprehensiveness, adequacy and representativeness of the range of ecosystems within the Strategy region should be used as the appropriate measure.

The land acquired for inclusion in the reserve system is located throughout the Strategy region thus improving the geo-climatic distribution and range of ecosystems contained. A map showing the location of the acquired land is located at Appendix 2.

Due to the range in the pastoral productivity of the land in the region, combined with higher levels of degradation on high pastoral value land, most of the land acquired

reflects lower pastoral productivity. High pastoral value land is more tightly held by the industry hence purchase opportunities have been more limited. Overall, the acquisitions comprise 1.8 million hectares of low pastoral value land, 1.2 million hectares of moderate pastoral value, and 167,000 hectares of high pastoral value land (it should be noted that not all the Strategy region has been assessed for potential pastoral production value).

The improvement in the level of comprehensiveness and representativeness of ecosystems now managed for the conservation of biodiversity within each IBRA region is varied across the Strategy region, but there has been an overall improvement of the area of land now to be managed for the conservation of biodiversity in perpetuity. The increase in conservation reserve area is shown in the table below.

Conservation reserve area by biogeographic regions having high or medium priority for increasing the reserve system.

IBRA region	1998 cons. res. area ha.	1998 % of region	IBRA Region Area ha. within Strat. Reg.	2004 cons. res. area ha. in IBRA region	2004 % of IBRA region	15% of IBRA region ha.	Additional Area req'd ha.
Gasc.	244,438	1.48	16,556,817	1,756,818	10.6	2,483,523	726,705
Carn.	265,908	3.54	7,503,038	871,810	11.62	1,125,456	253,646
Murch.	82,170	0.45	18,430,888	1,374,380	7.46	2,764,633	1,390,253
Yalgoo	486,136	12.6	3,857,659	988,947	25.6	_	_
Avon Wheat	18,629	4.2	443,448	45,993	10.37	66,517	20,524
Gtn. Sndpln.	313,919	21.36	1,469,472	479,225	32.61	_	_
Total	1,411,200			5,476,173		6,440,129	2,391,128

Quite clearly, there has been good progress with improving the conservation reserve system although the area of conservation land within the Gascoyne, Carnarvon, and Murchison IBRA regions remain below 15%. There is an urgent need to continue the acquisition program within the Murchison IBRA region with an additional 1.4 million hectares required to lift the conservation area to 15%. An additional area of land of considerable size is also required in the Gascoyne IBRA region to achieve the conservation target of 15% of the region.

At the beginning of the program, of the 259 vegetation associations mapped within the Strategy region, 74 (28.6%) were protected within the existing conservation reserve

system. However, of these only 19 (7.3%) had greater than 10% of their area with the reserve system. That is 92.7% of the vegetation associations occurring within the Strategy region were either not represented at all or were under-represented.

At this point in time over 70 additional vegetation types are now represented within the reserve system – doubling the number to over half of all vegetation associations occurring in the region. About a third of these have greater than 10% of their area represented. About 110 vegetation associations are still not represented within the conservation reserve system.

Vegetation associations having an area of less than 50,000 hectares are considered to be restricted in distribution making them vulnerable to the effects of climatic changes, overgrazing or regular controlled burning. Of the nearly 150 vegetation associations now represented in the conservation reserve system, about 40% are considered to be of restricted distribution. The majority of these vegetation associations having restricted distribution are now represented at greater than 10%.

About 80 vegetation associations with restricted distribution remain outside the conservation reserve system.

It is clear from this information that the establishment of a CAR reserve system has some way to go – there are still major gaps in the comprehensiveness and representativeness of the full array of ecosystems in the Strategy region.

IBRA regions having high priority for increasing the reserve system

Carnarvon

This region is comprised of moderate to very high pastoral potential country that has been well developed for pastoral activities. Pastoral country in this region is tightly held particularly where pastoral potential is high or very high. The establishment of Buffel grass across a wide area of the region has resulted in a reduction of biodiversity that would be difficult to reverse.

Many properties in this region have considerable areas of land that has been degraded with extensive surface deflation now evident on many of these.

There are over 20 vegetation associations having restricted distribution that remain outside the conservation reserve system.

Gascoyne

The majority of this region is comprised of low or very low pastoral value country. Dominant vegetation is mulga in open woodlands on shallow earthy loams over hardpan, with *Eremophila* shrublands on the shallow stony plains.

Much of this region is the subject of increased erosion with many introduced plant species. Although just over 10% of the region is now within the conservation reserve system there remain significant gaps in the level of representation of the full array of ecosystems.

Murchison

This is the largest IBRA region within the Strategy area and is comprised of moderate and high pastoral value country in the western two thirds and low pastoral value country in the eastern third. The better country particularly along river frontages is mostly heavily impacted by grazing and is degraded. Around 7.5% of the region is now within the conservation reserve system – well under the goal of 15%. An additional 1.4 million hectares of land is required to meet this goal.

Over twenty vegetation associations of restricted distribution occur outside the conservation reserve system.

Yalgoo

The Yalgoo region comprises a range of pastoral value country from very low to high and is situated in a part of the state considered a botanical interzone between the south-west and eremean botanical provinces. The southern portion of the region is characterized by vegetation associations now extensively cleared in the adjoining agricultural zone thus making the region highly important for the conservation of biodiversity.

Although there is more than 15% of this region within the conservation estate, close to twenty vegetation associations having restricted distribution remain outside the reserve area.

Results

At the Strategy region level, about 40% of the vegetation associations remain unrepresented in the conservation reserve system.

When the IBRA regions having high priority for extending the reserve system are considered, it is clear that major gaps remain even where the area of the reserves exceeds the target of 15%.

The goal of the GMS is to achieve a conservation reserve system of between 10% and 15% of the region, and while this is a corruption of the national objective to have at least 10% of each ecosystem represented in the reserve system as set out in the National Strategy for the Conservation of Australia's Biological Diversity, less than 10% of the region is now within the reserve system.

The results also indicate that the careful selection of pastoral leases containing high diversity which compliment the conservation values contained within the existing reserve

system has resulted in the doubling of the number of vegetation associations now represented. Of these, over 80 have greater than 10% of their original areal extent represented. This is a significant improvement given only 19 vegetation associations in the reserve system with over 10% representation at the beginning of the program.

Liaison with pastoralists over land acquisition opportunities is continuing.

Conservation outside the conservation reserve system

Biological diversity and the threats to it extend across land use boundaries. Even if it were possible to achieve a CAR reserve system containing at least 10% of each ecosystem, the remaining 90% would remain outside protected areas. Any audit of the conservation reserve system will show that there are many species and ecosystems – including those considered to be rare or under extreme threat of extinction – that are not protected. Therefore, the conservation of biodiversity is something that all land use managers must be concerned with.

The GMS recognizes that conservation reserves alone would not result in the protection and maintenance of biodiversity and proposed the development of an off-reserve conservation management program.

However, there are social and political barriers to effective conservation management of off-reserve land, particularly in circumstances where alternative land uses may have an economic impact on business enterprises. An important issue is the need to provide adequate compensation to land users willing to undertake management practices aimed at conservation of biodiversity on land having high economic value, but which also has identified high conservation value. It must be recognized that land having high productive and economic values can also make an important contribution to the conservation of biodiversity and the maintenance of ecological processes.

At this time, only one formal cooperative conservation management agreement has been established under the Conservation and Land Management Act with a pastoral lessee in the Strategy region. However, a number of pastoralists are engaged in programs aimed at conserving endangered flora, or improving the condition of vegetation on riverine flood plains using funding provided by the Natural Heritage Trust.

The Ecosystem Management Understanding (EMU) project developed under the GMS provides an opportunity for pastoralists to gain an awareness and better understanding of the rangelands they manage, from both a pastoral production and biodiversity perspective. The work of those involved in the EMU project has been received with a great deal of enthusiasm by pastoralists many of whom are now focusing on ecological pastoral practices on land not able to be acquired for inclusion in the conservation reserve system; this is important as it is a process that at lease partially accommodates broader biodiversity objectives on land outside the reserve system. One of the key outcomes of the program is the level of enthusiasm for ecological management, indicating a considerable change in attitude and behavior towards the way rangelands are managed.

Conclusion

A significant improvement in the area of land now within the conservation reserve system has been achieved through the land acquisition program. Within this land many ecosystems not previously managed for conservation, or which were represented at less than 10% of their original areal extent are now included or have had there area of representation improved to greater than 10%.

At the regional level the reserve system is still not comprehensive, with a significant number of ecosystems not represented at all, or that are under-represented. An additional 2.4 million hectares of land containing high conservation values would have to be acquired for inclusion in the CAR reserve system to achieve the Strategy goal of having 10 to 15% of the region in the reserve system. Continued support from industry and government will be necessary for the achievement of the Strategy outcomes in relation to the establishment of a CAR reserve system in the region.

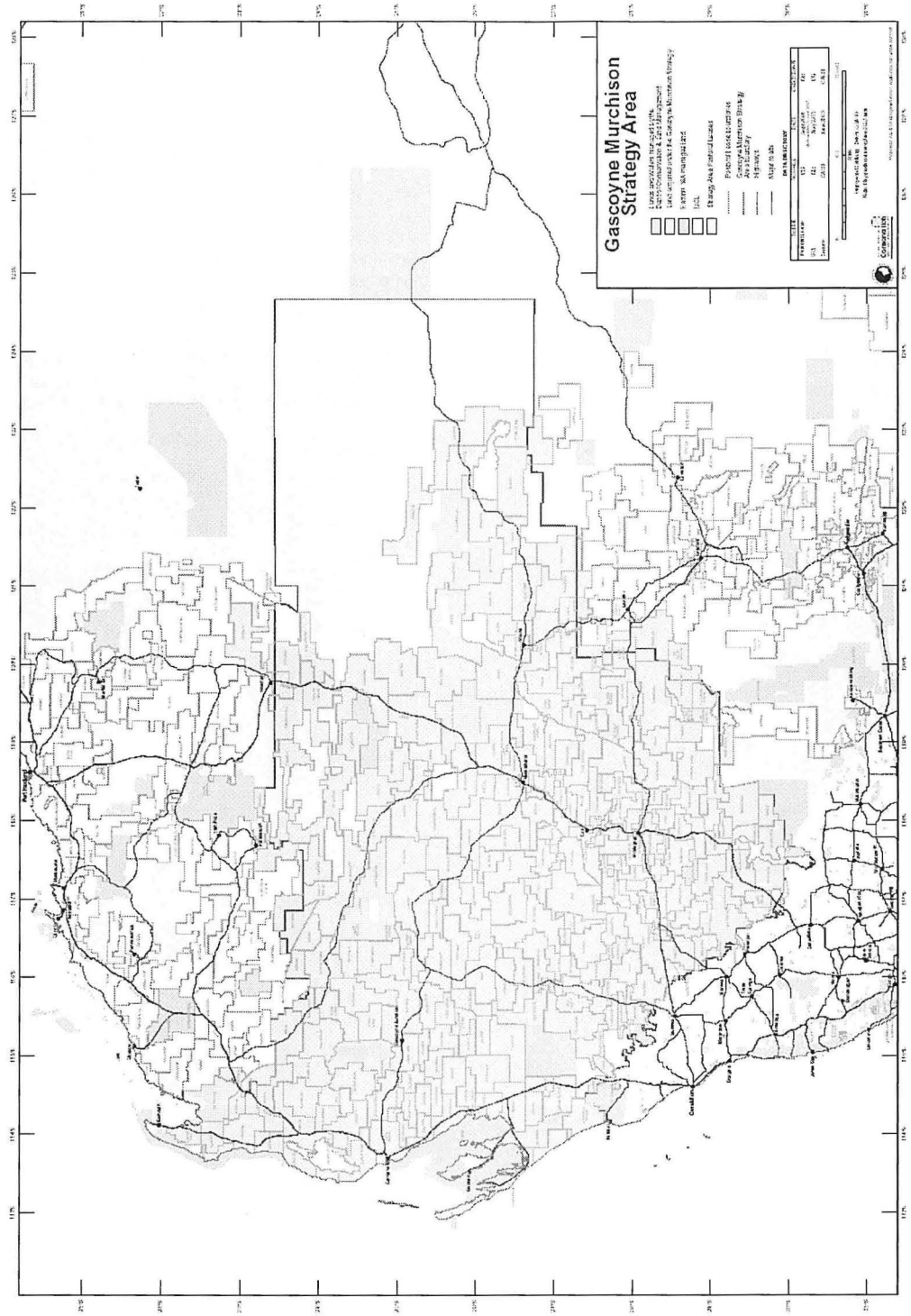
Appendix 1.

Whole and part leases purchased for inclusion in the conservation reserve system

Lease	Purchased	Area (ha)	Pastoral value	Homestead	Caretaker
Whole leases					
Pimbee	Dec 98	98 612	M	Yes	No
Muggon	Feb 99	182 743	M/H	Yes	Yes
Earaheedy	March 99	321 818	L/M	No	No
Moologool	June 99	402 467	L/M	Yes (2)	Yes
Waldburg	Dec 99	246 830	VL/M	Yes	Yes
Lochada	May 2000	114 581	VL/L	No	No
Lake Mason	July 2000	149 317	L/M/H	Yes	Yes
Lorna Glen	Aug 2000	244 000	VL/L/M/MH	Yes	Yes/temp
Cobra	Aug 2000	136 724	VL/L/M	Yes	Yes
Mooka	Aug 2000	80 931	M	Yes	Yes
Black Range	Oct 2000	79 329	VL/M		
Nanga	Dec 2000	174 597	VL	No	No
Doolgunna	Aug 2001	189 342	L/M	Yes	Yes
Narloo	Nov 2001	14 998	L/M	Yes	No
Karara	Jan 2002	109 291	VL/MH	Yes	Yes
Giralia	Jul 2002	230 899	L/M/H	Yes	Yes
Kadji Kadji		47,300		Yes	Yes
Warriedar	6 / 2004	72,219	VL - MH	Yes	No
Part leases					
Pt Mardathuna	June 99	31 818	VL/M	N/A	-
Pt Middalya	June 99	13 582	VL/M	N/A	-
Pt Lyons River	June 99	11 013	VL/M	N/A	-
Pt Bidgemia	June 99	6 623	VL/M	N/A	-
Pt Williambury	July 99	21 061	VL/M	N/A	-
Pt Jimba Jimba	July 99	5 636	VL/M	N/A	-
Pt Minnie Creek	Aug 2001	6 713	VL-MH	N/A	-
Pt Mt Phillip	Jan 2000	114 273	VL/L	N/A	-
Pt Dalgety Downs	Nov 99	100 608	VL	N/A	-
Pt Barnong	Oct 99	22 482	VL	N/A	-
Pt Yaringa	May 2001	19 396	H	N/A	-
Pt Boologoroo	Oct 2001	14 899	H	N/A	-
Pt Twin Peaks	Jan 2002	27 300	L/MH	N/A	-
Pt Yuin	Jan 2002	59 977	L/MH	N/A	-
Pt Cashmere Downs	April 2002	51 637		N/A	-

Pt Bulga Downs	April 2002	112 290		N/A	-
Pt Wooleen	April 2002	8 785		N/A	-
Pt. Kaluwiri	8 / 2003	102,600	L		
Pt. Wanna	6 / 2003	288,000	L/M		
TOTAL		3,914,691			

Appendix 2.


Gascoyne Murchison
Strategy Area