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# **THE RESTORATION AND REHABILITATION OF THE CARNARVON BASIN AND THE GASCOYNE CATCHMENT – PASTORAL INDUSTRY PLANNING FOR THE FUTURE –**

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## **ABSTRACT**

The Lyndon and Upper Gascoyne Land Conservation District Committees (LCDC) are some of the most active, innovative and longstanding committees of their type in the Western Australian southern rangelands. Active since 1988 and 1991 respectively, they have been extensively involved in the landcare movement and enhancing the biodiversity and productive viability of these rangelands.

Combined, the LCDCs encompass the Carnarvon Basin and the Gascoyne catchment covering some 73,000 square kilometers of the Gascoyne and Murchison regions. Their coastal boundaries include the Ningaloo Marine Park and the World Heritage area of Shark Bay and a wetland of national significance, Lake MacLeod, is situated in the western pocket of the districts.

After many years of Landcare activities the combined LCDC groups sought to strengthen their approach to land management. In 2007 the LCDC groups developed the 'Restoration and rehabilitation of the Carnarvon Basin and the Gascoyne Catchment project'. This is an important project as it is a catchment planning, works and development process that is being driven by the pastoral industry and is developing a co-operative approach between Government and community. The project is funded by the Rangelands Coordinating Group, the Natural Resource Management group for the Rangelands of WA.

The project involves the:

- Development of individual Property Management Plans
- Integration of Property Management Plans into an overall Catchment Management Plan.
- Development of a works and monitoring program to address issues that require treatment within the catchment.
- A 'continuous improvement' approach to livestock productivity and control of total grazing pressure
- Development of a self assessment and reporting model
- Identification of sources of funding for on-ground works projects.
- Coordination and implementation of the works program.

The pastoralists of the LCDC have observed significant improvement in the condition of their station and pastoral monitoring sites have verified these observations. However, they remain concerned about the historical degradation highlighted by the various rangelands condition reports undertaken by the Department of Agriculture and Food WA on behalf of the Pastoral Lands Board and the impact this has on the public perception of pastoralism in the Rangelands. This project is proving to be an opportunity to highlight the pro-active approach being taken by members of the pastoral industry in this region. It will help demonstrate and highlight how sound management of pastoral enterprises will lead to improved biodiversity outcomes and it will help set the direction for continued improvement and productivity gains in the Carnarvon Basin and Gascoyne catchment.

## **HISTORY OF THE CATCHMENTS**

It has been estimated in a previous paper delivered at the 14<sup>th</sup> Biennial Rangelands Conference in 2006 that “77.9% of the Gascoyne Catchment is now severely degraded” (Hopkins *et al.* 2006). The history of this catchment shows that small stock units were predominate in the southern rangelands however over the past 20 years and, more intensively, over the past 10 years large stock units have been replacing sheep. Current day assessments would reflect the gradual change in landscape due to the improved management of the landscape through matching food on offer to carrying capacity and investment in rehabilitating land systems, watercourses and floodways, and encouraging the spread of perennial grasses and native vegetation to assist in the stabilization of soils.

There are five rivers which make up the Carnarvon Basin survey area. The Lyndon, Minilya, Gascoyne, Lyons and Wooramel rivers and their respective catchments. Historical research shows that the catchments are degraded, however the pastoralists are consciously acting to reverse the level of degradation within this landscape and are passionate in sustainable management of their landscape to protect it for future generations. The previous condition report of the Gascoyne catchment (Wilcox and McKinnon) and the condition survey of the rangelands in the Carnarvon Basin (Payne *et al*) were conducted in 1972 and 1980 respectively and although this is valuable historical information it is essential that new data is produced and sited which reflects the improved condition of the Rangelands in the 21<sup>st</sup> Century.

The two biggest bio-physical threats to the catchments in the 21<sup>st</sup> Century are feral animals and noxious weeds. However we also believe societal pressures on the livestock need to be managed in a pro-active and open manner. This region is proud of its rural industry and is looking forward to ensuring they increase their productivity and environmental stewardship.

To target these threats the LCDC's have been extensively involved in National Landcare Program and Envirofund projects. Working together and with the Department of Agriculture and Food these projects have focused on satellite mapping and spraying of mesquite and parkinsonia, the relocation of water points from fragile areas, the installation of Total Grazing Management yards and fences to allow for feral animal control and the resting of country. More than \$1.1million dollars has been spent from the hip pocket of land owners since 2005 in the Gascoyne region.

## **PROJECT**

The ‘Restoration and rehabilitation of the Carnarvon Basin and the Gascoyne Catchment project’ (the Gascoyne Catchment project) is an initiative of the Lyndon LCDC to further focus on improved land management practices within their catchments. The project came about due to the potential Ramsar listing of the Lake MacLeod wetland, the proposed World Heritage Listing of the Ningaloo Marine Park and Cape Range National Park and the need for the pastoralists and the LCDC to come together and document the regeneration and rehabilitation works being carried out within the catchments.

The project was developed in consultation with the World Wildlife Fund, the Department of Environment and Conservation, the Department of Agriculture and Food, Dampier Salt Limited and the wider pastoral community. It was put forward as a draft proposal to the Rangelands NRM Coordinating Group back in 2006 and was successful in receiving funding late last year.

The delivery organisation for the project is the Ecologically Sustainable Rangeland Management (ESRM) program. ESRM is a program which contributes to improved management and productivity of the rangelands by working with land managers and owners to balance production and environmental demands. In particular they focus on supporting community leadership, station mapping and property action plans and developing market based incentives to stimulate improved land management. This is a key component of the Gascoyne catchment project which focuses on the need for individual property

planning and a pastoral catchment plan to ensure integrated land management with a long term sustainability focus.

Although the project is being managed by the ESRM program the entire process is industry driven and in consultation with the LCDCs. A steering committee has been set up to manage the project and it includes representatives from each LCDC, ESRM, industry leaders and two private contractors to undertake the project coordination and intensive monitoring for each property. The Steering Committee has undertaken strategic planning activities with facilitation consultants in order to develop clear project logic and also carefully plan the development of the pastoral catchment plan.

### **SELF ASSESSMENT**

Monitoring and recording rangeland condition will be a critical part of the Gascoyne Catchment project. In order to implement effective rehabilitation and future land management activities and to enable pastoral managers to make better management decisions, accurate and current data is needed.

The current monitoring system in the rangelands occurs through pastoral lease inspections with DAFWA and through the previous system of Western Australian Rangelands Monitoring Sites. The project members believe that the future of monitoring will be self assessment and that a defined model needs to be developed by industry in partnership with relevant experts which can then be utilised by land managers regionally, nationally and perhaps globally, whilst still ensuring the existing sites are maintained.

This tool will be critical in driving future land use decisions and providing accurate data on the condition of pastoral leases. This information can then be provided to regulatory bodies and the project can also present it to the general public to highlight the work and improvements that are being made in managing pastoral leases and biodiversity within the region and to promote the credentials of the industry within the region.

The external role of undertaking the monitoring and evaluation of the project will involve the collating of existing monitoring sites and ensuring that all stations have records of the sites on their stations. Further key monitoring sites will then be installed if needed according to the information divulged in the property catchment plan by ESRM. It will be essential to ensure that where new sites are placed land managers are able to access them and are competent in updating and installing new ones where necessary.

Following on from the implementation of the sites a summary of each property's findings will be collated and then compared to other self assessment models used through the rangelands and Australia. Land managers will also have access to the Landscape Function Analysis (Tongway 1993) methodology to assist in the assessment of the condition and resilience of the region.

Potentially the project is looking at developing a self evaluation model for the regions to not only provide strong evidence of environmental stewardship but also for the opportunity for it to be used as part of an environmental management system for the region or local accreditation to gain access to markets.

### **LIVESTOCK MANAGEMENT**

The Gascoyne Catchment project also incorporates livestock productivity activities which involve government researchers and extension officers, commercial consultants and pastoralists. The livestock productivity objective is to cooperatively develop simple tools to enable pastoralists to maintain total grazing pressure within seasonal carrying capacity. The activities are driven by the primordial importance of managing seasonal, total grazing pressure to achieve sustainable livestock productivity. These activities are supported through projects funded by the DAFWA and the National Landcare Program.

Consultants and DAFWA staff conduct an initial “doing” workshop with producers using a case study approach to plan a production year with a specific mob of stock in a specific management unit of land. The host producer identifies his or her objectives for livestock productivity, gross margin, land and pasture condition for the production year. To achieve these objectives, the workshop is conducted in the paddock, in the yards and in the office, developing the production plan and the key factors for monitoring across the production year. Producer participants are invited to do the same for a chosen management unit on their property. Follow-up support is offered to participants for further fine tuning the plan, initiating the monitoring and developing the recording procedures.

Ideally, producers will learn this ‘continuous improvement’ approach on a single management unit and then extend it across the remaining management units. In the future, this aggregation of management unit monitoring information will come together to form part of the self-assessment report for the landlord, the Pastoral Lands Board.

The projects have produced a “Glove Box Guide” which provides simplified methods for supporting the practical applications by pastoralists in the paddock.

### **PASTORAL CATCHMENT PLAN**

The overall objective of the Gascoyne catchment project is to come up with a Pastoral Catchment plan which will articulate an integrated vision for the pastoral industry in the Gascoyne, Lyndon, Minilya and Wooramel catchments.

The plan will be based on the geomorphology of the region. It will identify regional assets and recommend management strategies, and it will support the development of industry representation and help define the region as a centre of excellence.. The overarching focus will be to identify a vision for the catchment and the key steps that are needed to achieve this vision.

The adoption of the catchment plan will improve productivity and profitability within the catchments inclusive of ecological management and strategic on ground activities through sustainable management and continued improvement of waterways, land systems and building capacity for change. It will also enable land holders to promote their vision and leverage funding to undertake activities to ensure that their vision becomes a reality. This project will enhance the land manager’s credentials within the industry and the broader community and will assist in the improvement of land management within the region.

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