



**GASCOYNE**  
CATCHMENTS GROUP INC.

# infosheet

Over the past 2 years the Gascoyne Catchments Group (GCG) has been working with a software developer company to convert our Rangelands Monitoring Tool<sup>®</sup> from an Excel spreadsheet into an iOS application for iPads and iPhones.

## Rangelands Monitoring Tool<sup>®</sup> Application

The Rangelands Monitoring Tool<sup>®</sup> is an application that allows pastoralists to conduct a self-assessment of their rangelands and report it back to a central repository. This application is entirely based on our existing self-assessment tool that has been developed in Excel and is currently used by stakeholders that are a part of the GCG.

One of the key objectives of developing this application is to eliminate a lot of the manual work that happens between getting the self-assessment surveys completed and the compulsory reporting that needs to be provided to the Government. All the data generated and submitted by the application is stored on a backend server, with access to this data restricted to the developer and GCG admin only.

The Rangelands Monitoring Tool<sup>®</sup> is a process of rangeland assessment that provides:

- perennial shrub & grass trends to monitor pasture composition;
- perennial shrub & grass indicators to monitor trends in range condition;
- monitoring for soil health, stability, infiltration rates and nutrient cycling;
- a method to record and assess the type and severity of rangeland erosion;
- improved day to day management decisions on pastoral leases.

The evidence collected from this self-assessment tool will be used to communicate with regulators, agricultural industries and conservation agencies. It will also provide a credible basis on which to disseminate information to the general public on the condition and management of the Rangeland resources. Most importantly it will greatly assist pastoral managers in adjusting management responses to specific land and vegetation indicators.

**RANGELANDS**  
**MONITORING TOOL**



# The Value Based Approach

The GCG investigated a variety of alternative monitoring methods including David Tongway's Landscape Function Analysis, Queensland's Department of Primary Industries Stocktake® program, Grazing Land Management® and the Western Australian Rangeland Monitoring Systems.

Derived from the principles of these systems and utilising the Pasture Monitoring Sites approach to assessing & monitoring perennial species trends, the GCG has developed the Rangelands Monitoring Tool® using a value based approach. This approach removes any subjective conclusions to rangelands trends and provides a generic methodology that can be utilised by landholders.

This system classifies three components of rangeland health:

- 1. PLANTS** - Each plant species within the Gascoyne has been nominated a value between 1 and 10, based on its environmental and commercial values.
- 2. SOILS** - Four soil attributes taken from LFA have been nominated a value between 1 and 10, based on their contribution to soil stability, nutrient cycling and infiltration rates.
- 3. EROSION** - Three main types of rangeland erosion have been given a negative value between 0 and -10, based on their adverse impacts on soil stability, infiltration rates and nutrient cycling.

These values were determined in consultation with Department of Agriculture and Food WA, Department of Parks and Wildlife, the Pastoral Lands Board, CSIRO, University of Western Australia and Independent Lab Services.

The values applied in the software program generate a "Site Stability Index" (SSI), as shown below. This SSI is a benchmark for change in the site, land system, property or catchment.



## Reporting

The iOS application has the capability of producing four different reports from a property perspective. The reporting software is still being developed but the reports will include:

- 1. SITE REPORT** - Allows you to see a graph on all the historical SSIs for that specific site over the years and then drill down into each survey to see how it achieved that SSI;
- 2. VEGETATION SPECIES REPORT** - By selecting a site you can then choose the vegetation specie that you want to enquire about;

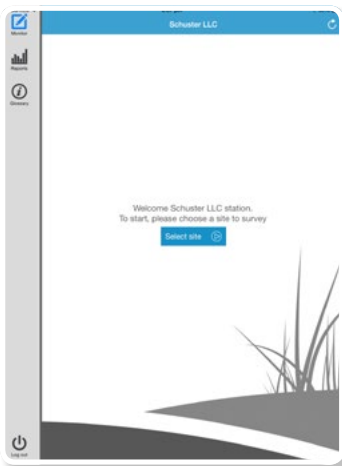
**3. LAND SYSTEM REPORT** - this report shows you a graph of what the SSI has been for the site over all the surveyed years;

**4. STATION REPORT** - the station reports show all the sites surveyed over the property with their SSI

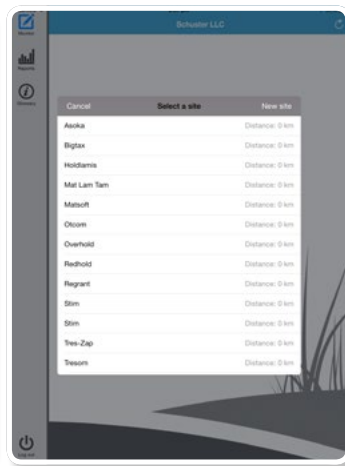
The GCG have worked with UWA Press to reprint Arid Shrubland Plants of Western Australia by A.A. Mitchell and D.G. Wilcox. We have received permission from the Department of Agriculture and Food WA to use this resource as the glossary for our App as it provides critical information on plant species within the Gascoyne region.

# Usability

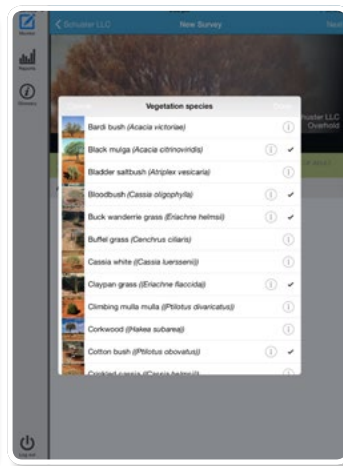
Below is a snapshot from the Rangelands Monitoring Tool© App.



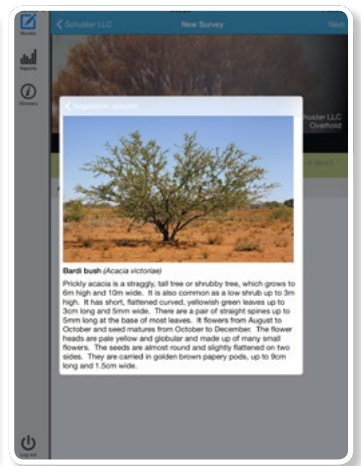
Home screen



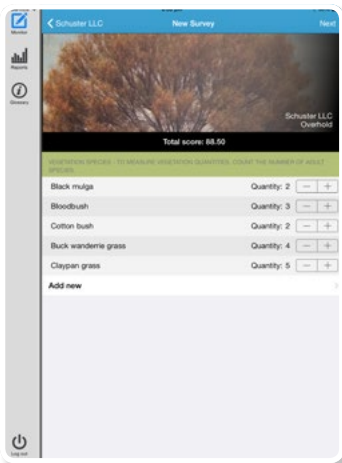
Selecting a site to monitor



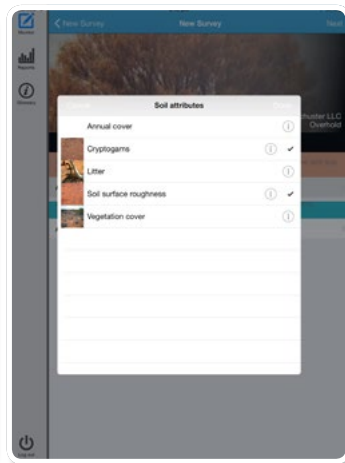
Selecting vegetation species



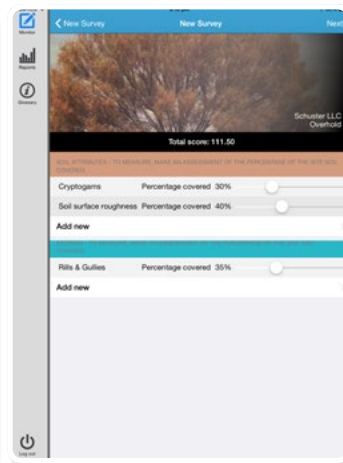
Species description – referenced from the *Arid Shrubland Plants of WA*



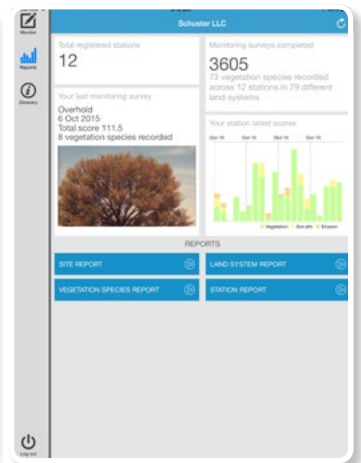
Vegetation score for that site



Selecting soil attributes



Selecting the percentage of ground covered to provide a total score for soil attributes and erosion



Reporting home screen

# History

The GCG is focused on developing an ecologically sustainable, profitable and respected pastoral industry that supports an adaptive and vibrant community. Growing from a collaborative project between the Gascoyne-Wooramel, Lyndon and Upper Gascoyne Land Conservation District Committees and working in partnership with the Department of Agriculture and Food, the producer group is concentrating on progressing some innovative and critical projects for the pastoral industry in WA.

We are a passionate group of 42 pastoral beef and sheep producers in the Gascoyne region with a strong belief in the future viability of the livestock industry in the Gascoyne region and the remote and regional communities of WA.

In November 2007 the Group, working with the Ecologically Sustainable Rangeland Management program, identified the need for an industry driven and endorsed rangelands self-assessment and reporting tool. It was recognized that the Rangelands Monitoring Tool® should maintain, emphasise and build on the information collected using existing Pasture Monitoring Sites (Pasture Monitoring Sites), an initiative developed and established by the Department of Agriculture and Food WA in the early 1980's. This Rangelands Monitoring Tool® will be critical in driving future land use decisions and providing accurate data on the condition of pastoral leases and the outcomes of Rangelands NRM funded projects. The Tool is a self-evaluation model for the region that will provide strong evidence of environmental stewardship and can be used as part of an environmental management system for the region.

The Gascoyne region has, for over thirty years, been of high scientific and academic significance to the global rangeland ecology community. Many ecological surveys and studies have been conducted within the Gascoyne catchments that have influenced global monitoring and assessment methodology and contributed to internationally based rangeland benchmarking.

The pastoralists within the GCG have developed the Rangelands Monitoring Tool® to provide evidence on the outcomes of works that have been undertaken within the region and to provide baseline data for future initiatives.

The App will be available for free at the end of 2015 and can be obtained by registering your interest via email to [eo@gascoynecatchments.com.au](mailto:eo@gascoynecatchments.com.au)



**RANGELANDS**  
MONITORING TOOL

This project is supported by Rangelands NRM through funding from the Australian Government's National Landcare Programme. Patent number 2012101322.

## 2015 committee members

### LYNDON LCDC

Sean D'Arcy (GCG Chairman) – Lyndon station

John Percy – Williambury station

Tim Shallcross – Bullara station

Tim Meecham – Quobba station

### GASCOYNE – WOORAMEL LCDC

Justin Steadman (GCG vice Chairman) - Wooramel station

Chris Higham – Meedo station

### UPPER GASCOYNE LCDC

Lachy McTaggart – Bidgemia station

Alys McKeogh – Carey Downs station

Jim Caunt – Mooloo Downs station

Jodie McTaggart – Bidgemia station

### EXECUTIVE OFFICER AND PRIMARY CONTACT

Alex Maslen  
PO Box 111  
Carnarvon, WA 6701  
0402 855 358  
[eo@gascoynecatchments.com.au](mailto:eo@gascoynecatchments.com.au)