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THE ICONIC GREGORY RIVER: PROTECTION AND IMPROVEMENT MANAGEMENT

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ABSTRACT

The Gregory River, the largest perennial river and one of several spring-fed streams in the southern Gulf catchment area, is recognised by the region's natural resource management body, Southern Gulf Catchments (SGC), as a priority area. Not only has SGC helped to fund research and on-ground works within and along the Gregory River, they have utilised the river's iconic scenery to develop other initiative projects such as partnership and education programs. To date, on-ground works have included 138 km of the river being fenced protecting some 7,900 ha of riparian zone, and approximately 300 ha of weed infestations being mitigated. The Gregory River has also been a part of a biodiversity, gully erosion and river function studies. The ability to maintain and build effective relationships has partly resulted from Southern Gulf Catchments goal to enhance best practice management of the river. Partnerships have been established with Government agencies, indigenous groups, landholders, local government, tourist industries, the International River Foundation and several community groups. Southern Gulf Catchments has a high aim to the future protection of this river system and will continue on-ground works while looking for new improvement opportunities.

INTRODUCTION

Waterbodies provide essential terrestrial and aquatic habitat throughout the Southern Gulf region. They are also highly valued for recreational purposes such as camping and fishing. Waterbodies are also used as a water source for cattle, and thus form an important component of any land or property management regime. During the wet season, there are thousands of waterbodies within the Southern Gulf region and by the end of the dry season, there will still be hundreds of waterbodies although some of these may have shrunk to small isolated waterholes.

The Gregory River and its major tributaries, the O'Shannassy River and Lawn Hill Creek, traverse Queensland's arid Northwest Highlands and Gulf Plains before joining the Nicholson River and flowing into the Gulf of Carpentaria. Unlike other major river systems in the southern Gulf region, the Gregory River flows year round as a result of springs associated with the dissected surfaces of the Thornton Limestone and Camooweal Dolomite formations (Bean, 1992). As an iconic oasis, the clear, green, fast flowing waters sustain the remnants of prehistoric rainforest vegetation and unique northern wildlife. The Gregory River, declared a Wild River in 2007 under the *Wild Rivers Act 2005* (Anon, 2007), is also part of the two nationally significant wetlands *Gregory River* and *Thornton Limestone Aggregation* within the Nicholson Basin (Anon, 2001a).

The Gregory River falls within the outlier weed infestation area of the Rubber Vine Containment Line falling along the Queensland/Northern Territory border instated by the National Weeds Strategy Executive Committee (Anon, 2001b). The 100 km buffer zone before the Northern Territory border was put into place in 2001 to protect the Northern Territory from the rapid spread of rubber vine (*Cryptostegia grandiflora*) as it is declared a Weed of National Significance (Thorp & Lynch, 2000). Due to these characteristics, the Gregory River region is a target high priority management area under the "Defeating the Weeds Menace" and "Blueprint for the Bush programs" (Austin, 2007).

Adding to the significance to the Gregory River catchment, the World Heritage listed Riversleigh marine fossil site along with the properties Riversleigh and Gregory Downs are both listed on the Register of the National Estate (Anon, 2006). Consisting of the Riversleigh World Heritage Fossil Site, Boodjumalla (Lawn Hill National Park), along with mining, indigenous, urban, both private & corporate pastoral/farming land tenures and a significant scientific fraternity and tourist destination,

protection and management is essential to maintain the areas' values for the future. The Gregory River has a special place in the hearts of the people

Southern Gulf Catchments (SGC), as the regional body tasked with natural resource management in the region, is working with many parties to implement a range of activities to assist with the protection and management of this emblematic river system. The regional body has placed investment along the Gregory River on activities such as weed management, riparian fencing, provision of alternative watering points along with paddock subdivision, indigenous rangers, research and waste management. These activities have included partnerships with the Environmental Protection Agency (Parks and Wildlife), Carpentaria Land Council Aboriginal Corporation, Gregory township Landcare group, the local fish stocking group, schools, graziers, universities and the Burke Shire council. While this is only the beginning, the foundations for protecting the Gregory River are well in place.

PROJECT HIGHLIGHTS

Research examples

Getting a fuller picture of the Gregory River is important for monitoring the condition and identifying changes over time. Information, also, assists prioritising activities and ensures the best value outcomes for investment. The following consists of some of the research projects SGC has co-funded:

- A PhD study '**River Function Project**' is underway by Cath Leigh at Griffith University to develop a conceptual model of dry season river function. This will assist in understanding how these systems may respond to future changes and what they require in order to maintain proper function.
- The Gregory was one of five focus catchments as part of '**A remote sensing approach for mapping and classifying riparian gully erosion in Tropical Australia**' conducted by Andrew Brooks, Jon Knight and John Spencer - Australian Rivers Institute Griffith University project. The project worked to develop:
 - a theoretical model of riparian gully erosion processes for tropical river catchments across northern Australia;
 - a remote sensing method for mapping gully erosion hazards;
 - a gully erosion severity index based on the observed types and the severity of gully erosion; and
 - a thematic map depicting all of the findings.
- A '**Rapid assessment of fish biodiversity in southern Gulf of Carpentaria catchments**' including the Gregory River was conducted by Alf Hogan and Terry Vallance in 2005. The assessment:
 - identified as many fish species as possible;
 - described the distribution and abundance status in these catchments of observed species in order to make recommendations for the conservation of rare and threatened species;
 - defined what constitutes critical aquatic habitat in the gulf catchments to make preliminary recommendations for its protection;
 - identified potential threats to fish and aquatic habitat health; and
 - deduced options for remedial action.
- Leo Lymburner and Damian Burrows of Australia Centre for Tropical and Freshwater Research (ACTFR) at James Cook University carried out a '**Prioritisation of Waterbodies**' study to determine the waterbodies that are relatively unique and likely to respond to on-ground management. The study looked at satellite imagery data that has been collected during the dry season to achieve the following objectives:
 - identify permanent and semi-permanent waterbodies throughout the southern Gulf;
 - quantify the permanence, turbidity and extent of riparian vegetation for these waterbodies;
 - identify high priority waterbodies for protection or restoration with suggestions as to suitable management strategies; and

- validate the remotely sensed map products using a combination of landholder surveys and field work.

On-ground works

Over grazing along water courses is one of the primary resource management issues. Major concerns exist regarding the threat posed by introduced weeds to pastoral production and to the integrity of native ecosystems.

Weeds such as **rubber vine** (*Cryptostegia grandiflora*), **bellyache bush** (*Jatropha gossypifolia*) and **lion's tail** (*Leonotis nepetifolia*) are of concern to all stakeholders in the Gregory River area. Landowners on many properties, including Boodjamulla, have undertaken projects in a bid to manage weeds. Rubbervine has a significant strangle hold on large stretches of the river. Targeted projects to manage rubbervine include treatment of outlier plants away from the river system and fencing riparian areas to allow enough of the understorey to grow increasing fuel load to perform fire management.

To date, 138 km of the Gregory River riparian area has been **fenced and alternative water points installed**. Use of the river for recreational purposes was a major consideration when designing the fencing. Every year, the river hosts the Gregory River Canoe Race and sees almost 1000 visitors. Inclusion of grids at regular intervals and canoe race check points was required. Future plans include fencing the boundary of Boodjamulla on the O'Shannassy River and Lawn Hill Creeks. However due to steep rocky terrain, fencing is often expensive and difficult.

Other initiatives

The beauty of this oasis in the arid landscape makes for an ideal camping and fishing destination for both tourists and locals. The local Shire Council has expressed concern for many years about the damage caused by people accessing the river, and in some cases wasting vehicles and emptying chemical toilets in or near the river. In an attempt to relieve some of the impacts caused, Southern Gulf Catchments in collaboration with Burke Shire installed one '**Dump-Ezy's for sewage collection**' of waste from caravans and campervans in the township of Gregory and one near the tourist attraction Adel's Grove.

The Bulimba Creek Catchment Coordinating Committee (B4C) and Southern Gulf Catchments are partnership in a '**Twinning**' activity similar to the sister city concept. This year B4C representatives and Southern Gulf Catchments worked with the school at Gregory Township to develop a healthy food garden. Another initiative as part of the twinning project is '**Dream River**' in which local children paint their idea of Dream River, which will be used for a calendar in 2009.

'**Take a kid fishing day**' has proved to be hugely successful with events hosted across the whole Southern Gulf Catchments region. Last year, 15 kids took part in the day that focuses on sustainable fishing practices and general water and river health issues.

FUTURE OF THE GREGORY RIVER

Joint ventures are key to the management of Australia's natural resources and Southern Gulf Catchments will be working to maintain and establish new alliances. The organisation will be working on:

- the continuation of riparian fencing along the Gregory River banks;
- more funding into the eradication of Weeds of National Significance;
- community raising through the signing of a Memorandum of Understanding (MOU) with the B4C;
- partnering with the B4C in the launching of a '**Healthy Food Garden**' at the local Gregory school;
- continuing the sponsoring of a Southern Gulf Catchments team in the Gregory River Canoe Race; and
- investing in more research into the ecological values of this spring-fed system.

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