BREMER CATCHMENT ASSOCIATION INC.

August 2022

around the bremer

Special points of interest:

The next Operational Meeting will be held on

15th September

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Biography for Bremer Catchment Association (BCA)

Formed in 1996, the Bremer Catchment Association (BCA) was initially established by Ipswich City Council to liaise with like-minded community groups, who share a passion for the Bremer Catchment Region. During this time the BCA has continually supported many Ipswich City Council (ICC) initiatives, including South East Queensland Catchments (SEQ) work programs, in their efforts to improve the Bremer Catchment Region.

As a local 'not-for-profit' volunteer based community group, the BCA is very proud of its achievements and continues to improve the strong emphasis on healthy sustainable catchment issues within the Bremer Catchment Region. During the past 26 years BCA has supported various community based projects, with the view and focus on environmental management of the valuable Bremer Catchment estuary system. The Cribb Park support is an example.

Successful grant applications have provided valuable financial support for the BCA, which has carefully managed a number of projects using this money in the Bremer Catchment Region. These projects include the following:

- Two (2) Water Quality Monitoring Programs in the Bremer Catchment Region (2005, 2013).
- Revegetation of estuary regions (Peak Crossing. Gained (2008) Healthy Waterways Award.
- Revegetation of Parkland North Ipswich Wetlands. Extensive rock stabilisation/vegetation plantings took place.
- Weed Management Equipment in the Warrill and Upper Bremer Catchments is an ongoing project. Two spray machines maintained by BCA for the use of landholders.BCA established an account for this ongoing project. (Farmcraft—Kalbar).
- Erosion Stability works in Upper Bremer 2013. (Mt Walker Hillside Erosion Project & Field Day).
- Blue Gum Nature Reserve – 20/11/2010. BCA organised a tree planting open day.
- At Francis Street (Scout property) weed removal and revegetation was undertaken in 2017/2019.
- Two-Monthly Newsletters.

With a range of ideas for future projects, the BCA and its group of local volunteer 'like-minded' members are mindful of future development in the Bremer Catchment Region. Urban development of the region is being planned and monitored by local Councils (Ipswich City Council and Scenic Rim Council), with BCA remaining concerned about long term effects on the sensitivity issues surrounding estuary and river systems within the catchment.

What is Agroforestry?

Agroforestry is the integration of trees and shrubs into farming landscapes for conservation and profit. It's all about farmers using trees to improve the environmental, social and economic values of their land.

Agroforestry is simply the design and management of trees and shrubs on farms for the reasons that are important. We can design and manage forestry for a range of benefits including the provision of shade and shelter, soil and water conservation, wildlife habitat and aesthetics. One can generate an income from the sale of timber or other forest products: for example such as bush-foods, tree seed, oils, flowers or food.

Abstract Background

1. Agroforestry bridges the gap that often separates agriculture and forestry by building integrated systems that address both environmental and socio-economic objectives.
2. Agroforestry can improve the resiliency of agricultural systems and mitigate the impacts of climate change.

Existing research suggests that integrating trees on farms can prevent environmental degradation, improve agricultural productivity, increase carbon sequestration, generate cleaner water, and support healthy soil and healthy ecosystems. It is providing stable incomes and other benefits to human welfare. Although these claims are becoming more widely accepted as the body of agroforestry research increases, systematic understanding of the evidence supporting them remains lacking for high-income countries. This systematic map will address this research need by providing a tool for identifying and visualizing the existing evidence demonstrating the impacts of agroforestry practices and interventions on agricultural productivity, ecosystem services, and human well-being. The results will be useful for informing policy decisions and future research.

Agroforestry

Methods

This method will identify, collect, display, and describe available evidence on the impacts of agroforestry on agricultural productivity, ecosystem services, and human well-being in high-income countries. The search strategy does cover 5 primary databases and 24 organizational websites using a pre-defined search string designed to capture studies relating agroforestry practices and interventions to outcomes in high-income countries.

It will screen the identified studies for inclusion or exclusion in stages, first on title and abstract and then on full-text. For inclusion, the study in question must assess the impacts of the deliberate promotion and/or actual integration of woody perennials (trees, shrubs, palms, bamboos, etc.) on the same land management unit as agricultural crops and/or animals

Agroforestry

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Agroforestry

Sweet like chocolate:

the future potential of Australian cocoa production

For more than a decade AgriFutures Australia has been supporting investigations into the development of a stable cocoa industry in far north Queensland.

Now, they've funded the five-year Australian Cocoa Strategic RD&E Plan (2022-2027) | AgriFutures Australia – which offers the platform for an essential first step for the emerging industry to grow.

AgriFutures Australia Manager Emerging Industries, Laura Skipworth said the time was right for further growth in the sector with consumer demand for chocolate and chocolate-based products growing steadily over the past 10 years**.**

"With Australia importing $699.3 million of cocoa and cocoa preparations in 2020, there is potential for cocoa production in Australia to increase over the coming years to replace some of the imported product with Australian product," she said.

Cocoa bean on tree

"We know that Australian cocoa growers cannot compete on price against small hold farmers from developing countries, so the industry relies on selling high quality cocoa beans into premium, niche markets.

"That's something that's already happening successfully in Australia, but only small-scale. We're really excited to see how the priority areas outlined in the Plan are addressed to assist with that sought after industry growth and increased success."

Cocoa beans on tree

Key priorities identified

The Strategic RD&E Plan identifies three key priorities 1 profitable cocoa-growing systems; 2 quality and differentiated Australian-grown cocoa for premium markets; 3 a thriving Australian cocoa industry. These are underpinned by seven strategies, from developing labour-efficient, high-yielding, and economic tree training and renewal systems, to disseminating information and fostering industry collaboration.

Cocoa producer and chocolate manufacturer Chris Jahnke is full of optimism they are achievable goals.

Entering the industry a decade ago, Chris and his wife Lyn, run Charley's – a cocoa plantation and chocolate making facility – in the wet tropics region of far north Queensland.

"I'm not a farmer, but with my marketing and business background, I could see the potential in being involved in a product that was shifting to a premium market for customers wanting a better taste experience," he said. (Editor: Trial for our catchment).

"Importantly, from a business perspective, chocolate needs no explanation. You don't need to convince people to eat it or tell them what it is. Coupled with Australia's clean, green image globally, it had a lot going for it."

Chocolate products

The power of education & advice

However Chris said the process of explaining cocoa production versus chocolate manufacturing can be a sticking point – and that's why, as both a farmer and the Chair of the Australian Cocoa Council – he's been intrinsically involved with the development of the new RD&E Plan for the industry.

Restoring riparian rainforest in urbanising SEQ catchments: why and how

Carla Catterall | Professor Emeritus - School of Environment and Science, Griffith University

Carla Catterall is a semi-retired Professor at Griffith University, who has conducted extensive research into processes of forest clearing and restoration, and who has recently been re-creating riparian rainforest in inner Brisbane.

During about the last 20 million years the earth has cooled and dried and rainforest coverage has shrunk drastically around the world. Over about the last 50 thousand years, burning by aboriginal peoples may have further reduced rainforest extent. When European settlers arrived just over 200 years ago the rainforest in Australia had shrunk to just 3% of the land area but still supported 50% of the terrestrial biota. Land clearing over the last 200 years has left only patches of remnant rainforest within hidden or difficult terrain. Most of our rainforests are now found high in the hills where clearing and agriculture were too difficult.

Recorded observations made by early South East Queensland pioneers tell of the "tangled mass of trees, vines and flowering creepers, staghorn, elkhorns, towering scrub palms, giant ferns and hundreds of other members of the fern family, beautiful and rare orchids and the rare passion flower". At Oxley Creek, where timber cutters were entering the flood plain as early as 1860, the creek was described as being bordered by tall patches of rainforest with large hoop pine trees.

Rainforests have:

- A high density of distinctive species (plant and animal)
- Tall trees that create a dense canopy shading and protecting the undergrowth
- A well-developed leaf litter, allowing for rapid decomposition
- Complex arrangements of foliage at various heights
- Special plant life forms like vines, epiphytes and tree buttresses
- Many fleshy fruited plants which are dispersed by animals (ancestors of many modern cultivated fruit)

Replanting Riparian forests on formerly-cleared land.

The aim is to create a flip in the ecosystem from its current state, to a self-sustaining quasi-natural forest. To do this the site is prepared by removing all the exotic grasses or weeds with herbicide followed by dense planting (1.5m-1.8m) of diverse pioneer species, and a diverse selection of other suitable rainforest species.

Maintenance is required for around 4-5 years to suppress weed regrowth and replant lost stock. Once the forest has enough canopy and diversity, usually after about 5 years, it will become self-sustaining, attract more species of flora and fauna by creating a natural habitat and help to reduce erosion and flood damage.

A range of rainforest tree species have shown high flood resilience and they can also be resilient in times of drought; careful attention to species selection before planting can ensure that the species suit the site conditions.

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Rainforests provide **the best outcome for riparian restoration projects** for several reasons.

1. Lowland riparian rainforests have been near-exterminated so they need reinstating.
2. The future cannot replicate the past, especially in urban areas.
   A. The most suitable species mix for now and the future differs from the original species present bef ore1800. B. Environmental changes wrought by modern society include
   I. Changes to topography and drainage through earthmoving
   II. Water availability (rerouted streams, urban runoff and impervious surfaces)
   III. Chemical conditions (fertilisers, pesticides, other pollutants)
   IV. Surrounding species - fewer local natives and more non-natives
   V. Local climate - warmer, greater extremes flood/drought
   VI. Fire regimes - fire generally excluded from urban areas

3. Rainforest shade and litter are better at suppressing problematic pasture grasses and weeds.

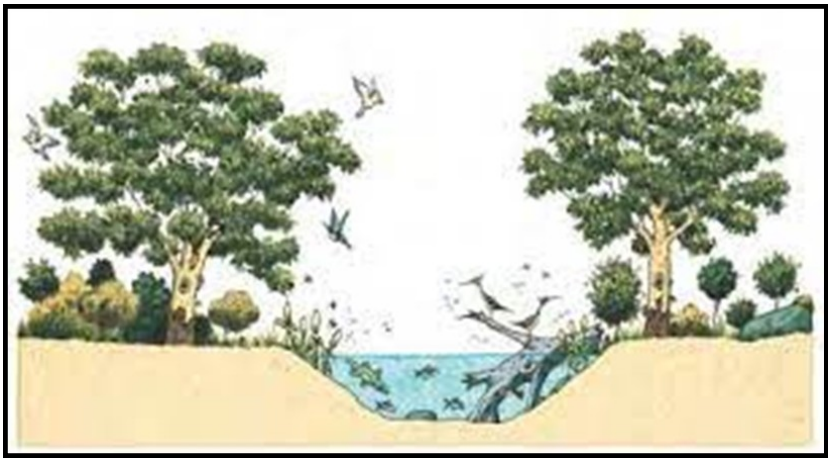
   a. Urban riparian soils are high in nutrients and moisture
   b. Eucalypts have open canopies (<70%) so lots of light reaches the ground allowing vigorous growth of non-native pasture grasses, which repeatedly reinvade
   c. Rainforest trees can form closed canopies (70-100%) so little light reaches the ground and,
   d. Rainforest trees shed lots of leaves so a layer of litter builds up suppressing the growth of pasture grasses

4. Eucalypt-dominated communities need periodic burning (5-10 years) but rainforest thrive when fire is excluded.
5. Narrow strips of Eucalypt forest become dominated by noisy miners.

Therefore, adding riparian rainforest to cleared stream banks in urban areas is:

- Important for conservation.
- The most practical kind of re-vegetation.
- Beneficial to stream bank stability and water quality.

Carla concluded by sharing some photos of her successful use of riparian rainforest in re-vegetating a site on Norman Creek in Brisbane.



Principles for riparian lands management

A synopsis of the presentation to the Bremer Catchment Association Inc on the 21st of July 2022)

Horticulture best management practice program expanded in SEQ

A program in the past that has reduced sediment, nutrient and pesticide runoff from horticultural land into waterways is being expanded to more farms in south-east Queensland (SEQ).

The Queensland Government had spent $850,000 over two years to drive change in the Lockyer, Bremer and Pumicestone catchments.

“Growcom’s Horticultural BMP (Hort360) digital risk assessment solution encourages farmers to optimize the design of their farms to reduce runoff and their use of chemicals.”

“This includes soil mapping and farm contour erosion mapping to minimise valuable agricultural soil loss to waterways during rain events.

“This will have a positive impact on the health and resilience of SEQ’s local waterways, in addition to improving productivity, profitability and sustainability for farms in the region.

The Department of Environment and Science (DES) and Growcom have worked closely with SEQ fruit and vegetable growers to help preserve Moreton Bay and protected Ramsar wetlands.

Pineapple growers in Pumicestone Passage are using Hort360’s online tools with specific aims to reduce nutrient and pesticide runoff into the passage and wetlands.

Ms Enoch said Hort360 successfully targeted major horticultural production areas in the Pumicestone Passage, Bremer catchment and the Lockyer Valley.

“In SEQ, 30 per cent of horticultural areas are now covered by the Hort360 program,” she said.

Member for Ipswich Jennifer Howard said the pesticide and herbicide modules developed under the new program “would help ensure there are no excess toxicant chemicals reaching our waterways”.

Member for Ipswich West Jim Madden said, “Hort360 makes it easier for farms and horticultural businesses to do their part in protecting our waterways, so it’s great to hear more SEQ operators are benefitting from the program.”

Growcom Board Director Chairman Les Williams said Hort360 is changing how growers viewed their farms.

“Whether it be soil, water or nutrient management, I encourage all horticultural growers to get on board with Hort360,” Mr Williams said.

Grazing Land Conditions

What is grazing land condition?

Grazing land condition is the capacity of the land to efficiently capture energy, cycle nutrients, and respond to rainfall to produce useful forage.

It is a measure of how well the grazing ecosystem is functioning and directly influences the productivity of your land.

Understanding land condition and how land is influenced by your grazing management including; stocking rates, spelling regimes, weed control and fire management, forms the basis of good business management for any grazing enterprise.

Maintaining your land in 'good' condition is important to:

- Maximise productivity and profitability in your grazing business
- Maintain stability and resilience to recover from disturbances (e.g. drought, fire, pests, and overgrazing)
- Maximise biodiversity and ecosystem function

Grazing land condition has three key components:

Pasture Condition

The capacity of pasture to: capture solar energy and convert it into palatable green leaf; use rainfall efficiently; conserve soil condition; and cycle nutrients.

Soil Condition

The capacity of soil to: absorb and store rainfall; store and cycle nutrients; provide habitat for soil biota (all organisms living within the soil), seed germination and plant growth; and resist erosion and degradation.

Woodland Condition

The effect that woodland condition has on the capacity of the land to: grow pasture; cycle nutrients; regulate ground water; resist erosion; provide shelter for stock, microclimates and habitat for native species; and maintain biodiversity.

Sown pastures run down. Strategies to Increase nitrogen inputs.

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Routine pasture assessments allow to take stock of pasture condition and manage grazing pressure appropriately

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