BREMER CATCHMENT ASSOCIATION INC.

February 2019

Special points of interest:

Our next Meeting in 2019 is on 21st February 2019 Everyone welcome

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Have you all paid your BCA Membership for 2018/2019

around the bremer

President's Corner by Mark Edginton

The recent fish kill in the Darling River underscores an immutable truth: no amount of re-vegetation of a catchment can achieve healthy river systems if there are insufficient flows. More efficient water use is therefore an essential part of catchment management.

This has the potential to impact on the living of agricultural producers. Agricultural producers invested in land and equipment with a reasonable expectation that they would be able to make a living from their financial investment and toil.

These investments were based on assumptions about what was best practice at the time, using methods that were permitted and encouraged by governments. Further, they did this in a competitive market environment where we the consumers have demanded the best quality products at the cheapest possible prices.

This means that the responsibility for more efficient water use is a societal responsibility. It is a proper matter for macroeconomics, not microeconomics. Yes, water conservation can be achieved by a plethora of on-farm measures: covered irrigation ditches or pipes, different crops, no-tillage direct seeding etc.

But a raft of policy measures are important to make it easier for primary producers to adopt these changes: grants, tax breaks, compensation, research into drought-resistant varieties of existing crops, changing over to different crops, water buy-backs etc.
To some extent these policies have been implemented, but they need to be greatly expanded.

In concert with vegetation rehabilitation and management, water conservation can achieve healthy catchments. But if we want producers, who have invested according to community standards that we have set in the past, to meet new community standards, then it is only just that the whole community shares the cost.
After all, it is the whole community which ultimately benefits.

Vegetation Rehabilitation and Management.

Makeover to Small Creek boosts Bremer River health

by **Jenn Meyer**

A BIG project to restore Small Creek in Ipswich is helping improve the health of the Bremer River.

Small Creek sections

"It not only improves the aesthetics of the creek, but it will also reduce air temperatures around the creek corridor, improve habitat conditions for native fish and birdlife and lead to better water quality outcomes".

The latest Healthy Land and Water annual waterway health Report Card found water quality in the Bremer River improved slightly in 2018.

The improvement is being credited to a reduction in the amount of pollutants entering the waterway and upstream restoration projects.
The restoration of Small Creek is one of several waterway improvement projects taking place in Ipswich and is complemented by the recent release of the Bremer River Catchment Action Plan 2018-2021 which details further opportunities for improvement.

The creek was once a meandering natural stream that flowed into Deebing Creek and onto the Bremer River, but in the 1980s it was turned into a concrete drain.

Ipswich City Council launched a project to reinstate Small Creek as a natural waterway to provide cleaner water for the community, habitat for wildlife, improved footpath and bikeway connections and the opportunity for residents to enjoy a natural waterway in their neighbourhood. Community input has been central to the project, with a Design Your Creek Week event as well as individual stakeholder meetings informing the design process.

Ipswich City Council Waterway Improvement Officer and Small Creek project manager, Ben Walker, said returning the waterway to a natural creek would have significant benefits for the community.

"It not only improves the aesthetics of the creek, but it will also reduce air temperatures around the creek corridor, improve habitat conditions for native fish and birdlife and lead to better water quality outcomes," he said.
"Stage one of the Small Creek project is complete with works currently underway on stage two.
"This is a project that is not only having an impact on the local environment now but will continue to have a positive influence for generations to come.

Healthy Land and Water Senior Principal Scientist Dr. Paul Maxwell and Ipswich City Council Waterway Improvement Officer and Small Creek project manager Ben Walker.

What about these pictures!

By Bill Steentsma, Vice President—BCA

The remnant to the Catchment of Debbie Cyclone had, in the Upper Warrill Creek some severe damaging effects. At that time I visited the landholders who were affected. One of the properties, our BCA Member Mal Abbott, had considerable soil erosion. Due to a built-up of debris against the bridge, detouring the flow, a recent carrot planted paddock lost much soil. The worst damage was a riverbank encroachment (photo).

On behalf of the Bremer Catchment Association (BCA), I contacted the Healthy Land & Water (HL&W) representative for financial support for the reparation.

The Project was completed by HL&W for a cost of $176,000.

In January 2019 I was pleased to take an "After" photograph of exactly the same spot as photo 1.

Since 1996, BCA members have worked hard, applying for Grants or referring to authorities issues affecting the catchment e.g. Action Plan.

The Project was completed by HL&W for a cost of $176,000.

Photo 1 "Before"

Upper Warrill Creek immediately after Debbie Cyclone

Photo 2 "After"

The same section after restoration.

Please refer to the article on page 6, submitted by Mark Waud, HL&W.

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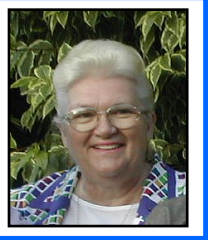


Artificial Intelligence (AI) and the future of work in agriculture

Article be Sarah Nolet (A Synopsis)

AI, with applications ranging from image processing algorithms, to cloud biology, to on-farm sensors, could have a positive impact on the economic and environmental sustainability of agriculture. As we understand more about the complex natural systems in which our crops grow, and have access to highly practical recommendations from agronomist-trained algorithms, farmers will use fewer chemicals and pesticides. And as we digitise the agricultural supply chain, we will reduce the amount of food we waste, improve our ability to respond quickly to consumer needs, and more toward seed-to-stomach transparency at the swipe of a finger. AI will eliminate inefficiencies, bring convenience to consumers, and helps farmers capture a larger percentage of each dollar we spend.

But the disruptive potential of AI raises a critical question about the future of agriculture that has investors excited, and rural communities uneasy: *will AI replace jobs?*

I believe AI will accelerate these productivity gains, continuing to bring positive impacts to agriculture and agricultural jobs.

Even experts disagree on what AI will mean for the future of work in agriculture. Will technology create jobs and enable a world of abundance, of cause mass unemployment, social inequality, and unrest? Will it take years for AI to master the extreme complexity of soil and weather.

I believe AI will accelerate these productivity gains, continuing to bring positive impacts to agriculture and agricultural jobs.

For Australian agricultural jobs in particular, understanding the role of AI and its impact on the future of work is critical. The agricultural industry provides over 1.6 million jobs to the Australian economy, and is responsible for around 12% (155 billion) of GDP, according to the National Farmers Federation. Hundreds of thousands of immigrants come to Australia each year, increasingly settling (and working) outside urban areas where they help to make rural and regional economies more productive.

I believe AI will accelerate these productivity gains, continuing to bring positive impacts to agriculture and agricultural jobs. **More Efficient Agribusinesses Can Create Better Jobs**

As digital technologies continue to penetrate agriculture, the least digitised industry, inefficiencies within business operations and along the supply chain will be eliminated. The coupling of algorithms, data from multiple sources (think satellites, drones, and airplanes), and sensors (think automated irrigation systems) will improve decision making for farmers and agronomists.

A robot prowls the rows looking for weeds to zap.

With better decisions and increased efficiencies, business will save money that can be reinvested to train employees to do higher level tasks and create more value for customers. Improving customer experience, as well as creating value-added, higher-margin products, helps differentiate the business and ensure longevity. And better jobs mean happier employees and reduced turnover.

AI will unlock potential in new areas of agriculture and these new businesses will need employees. - New Industries Will Create New Jobs.

As these industries mature, new jobs in agriculture are being created. Urban farming supply chains already require dedicated software and hardware providers (e.g., LEDs), and container-based farms are creating new opportunities for aspiring farmers without access to land.
Similarly, as the insect supply chain matures to service food, feed, and other future industries, jobs will be created to haul and manage food waste, research new uses and the potential of new insects, and market and sell products.

There's undeniably still a lot of work to be done to harvest the full potential of AI in agriculture. There are also ethical (e.g., responsible governance of gene editing techs), social (e.g., global GMO acceptance), and technical (e.g., extent to which data is open source and/or standardized) questions to be answered.

But with this digital agricultural revolution already on our doorstep, I am extremely positive about both the power of emerging technologies, as well as the jobs they will replace, change, and create.

Mayors fund river upgrade

Unhealthy Bremer a focus for fix by Hayden Johnson (QT 07-11-2018)

A three-year action plan has been formed to improve water quality and mitigate flooding in the unhealthy Bremer River catchment.

Launched as part of the Resilient River Catchment Plan is the first step in a plan to future-proof the river.

The Southeast Queensland Council of Mayors has contributed about $2 million to improving the Bremer's quality. Council chairman Lord Mayor Graham Quirk said, stabilising river banks was key to preventing soil in the river.

"We all know from the experiences of the 2011 flood and the 2013 flood event that the catchments of the southeast Queensland corridors are all intertwined," he said.

"There are no boundaries when it comes to the waterways of southeast Queensland" Projects and co-operation with landowners will be the key to improving the water quality, with the plan touted as the start of a 15-year vision of improving the catchment.

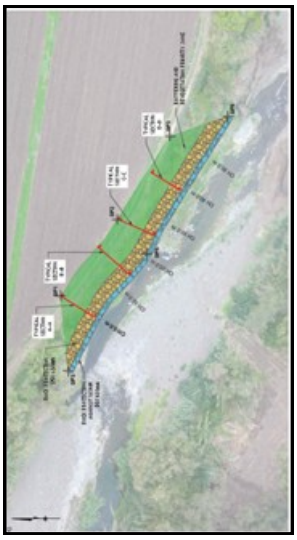
What happens in the Bremer affects Brisbane River and Moreton Bay water quality. The Bremer river is regarded as being in the worst condition of all southeast Queensland catchments.

Scenic Rim Mayor Greg Christensen said silt in the river originated from farmland soil.

"Our farmers, our landowners, are passionate about preserving that land where it should be," he said.

"We don't want our bay destroyed. We don't want our farmers destroyed and we certainly don't want everybody in between affected by the impacts of what can happen upstream."

"Landowners are Passionate about preserving that land where it should be."



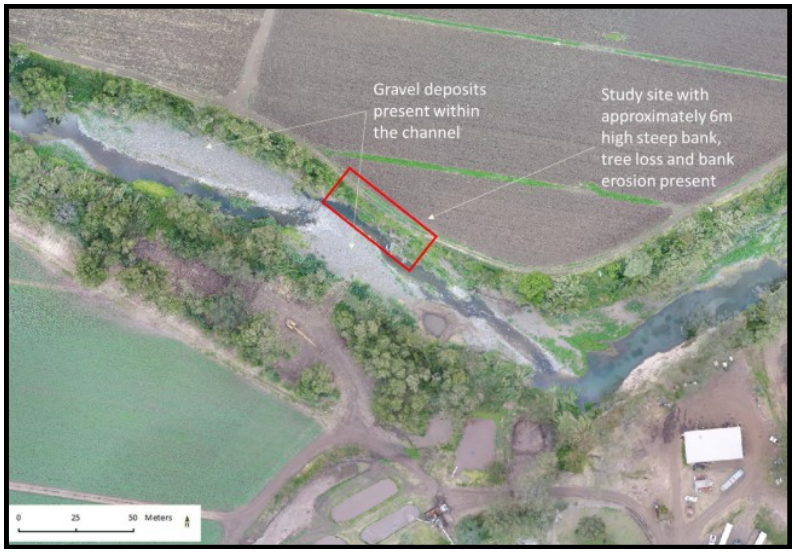
Upper Warrill Creek By Mark Waud

This property is located on the Upper Warrill Creek approximately 8km from Aratula. The property has deep alluvial soils where the landholder grows carrots, pumpkins and other horticultural produce. A 75m long section of bank eroded during the 2001 flood event and continued in 2013 followed by 2017 with ex-tropical cyclone 'Debbie'. IN stream vegetation was stripped out in these flood events as well as stream bank vegetation with damage extending into the access road and cultivation land. The eroding vertical bank was approximately 6 metres in height.

Historical analysis of aerial imagery indicated that upstream of the site, Warrill Creek has been subject to shifts in location or active meander due to flood events since 1933. IN areas, the channel has approximately doubled in width from approximately 20 to 40 metres.

The landholder agreed to have battering extending back 20m into his cultivation paddock as required by the engineering design to achieve a stable bank slope. This demonstrates the importance of community involvement in creek restoration projects from the design/concept stage as, without careful engagement and discussion, this project could not have been implemented.

Rock has been installed over Geofabric to protect the bank from further erosion. The bank above the rock placement has been planted with vegetation to provide long term stability once the vegetation establishes. This site suffered no damage to works and some minor loss of vegetation along the bank toe, after a ½ bank full flow in December.



This figure shows vertical bank which has retreated about 10m from 2009-2017 along a 35m stretch with further erosion (3-5m) 40m downstream of the red box in the above image (comparison of aerial imagery from 2009-2017).

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