BREMER CATCHMENT ASSOCIATION INC.

June2019

Special points of interest:

Our next Meeting in 2019 is on 18th July 2019 Everyone welcome

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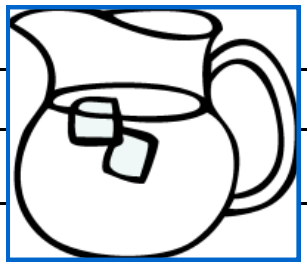


Have you all paid your BCA Membership for 2018/2019

around the bremer

President's Corner by Mark Edginton

As members of the Bremer Catchment Association, we know that catchment management is not just about looking after the environment. It is also about economics. Any money spent on catchment management should not be seen as a cost, but instead it should be seen as an investment with economic benefit.

With this philosophy in mind, I recently became aware of a project of investment in catchment management, the costs and benefits of which had been accounted for in great detail, and which had such a high profit that it amazed even me. It is the details of that project that I want to share with you today.

The project I wish to share with you is the water purification of New York City's water supply. The city was faced with a cost of 6 to 8 billion dollars to upgrade the water purification system, along with annual costs of 300 to 500 billion dollars a year. That was the cost of a 'traditional' hard engineering solution to treat the water using intensive infiltration in a typical water treatment plant.

But they elected to achieve the same level of purification for just 1 to 1 and a half billion, by instead *re-afforesting* and *protecting the water catchment area* around New City. The environmental solution, compared to the engineering solution, saved New York City 4 and a half to seven billion dollars of initial investment, with greatly reduced annual costs as well.

So what investments did New York City Make to achieve this? They paid for the upgrading of thousands of private septic tanks. They paid for fencing for farmers to shepherd stock away from sensitive areas. They purchased intact vegetation. They upgraded sewage treatment plants. And they made many other investments. As New York City's Department of Environmental Protection summed it up: "The Watershed Protection Program leverages pollution prevention, land acquisition and environmental stewardship programs at less than the cost of a water treatment facility, thus providing great value for the investments made." The result is New York City's award-winning water quality. New York's drinking water has been described as "the champagne of drinking water."

Now of course, the Bremer River does not supply drinking water. However, Lake Moogerah and Reynolds Creek are in the Bremer Catchment and they do provide drinking water. In any event the New York City project is relevant because it demonstrates that environmental stewardship of a catchment is much cheaper than letting the environmental health of a catchment decline, then trying to clean up the water that emerges at the other end. The water from the Bremer Catchment flows into the Brisbane River which flows into Moreton Bay, so the quality of water that flows from the Bremer River is important to marine life and wading birds. So the story of New York City's catchment management has lessons for us.

If you would like to learn more about New York City's catchment management, a good place to start is the link below:

http://www.nyc.gov/html/dep/pdf/climate/one-nyc-one-water.pdf

Same Notes on Farm Dams

Farm dams are used: where filling is from a natural or improved catchment

Run-off from crop land and pasture is not adequate to reliably fill farm

Farm dams provide effective water storage wherever surface water run-off can be harvested for livestock, crop spraying, irrigation and domestic use on rural properties. Dams for rainfall storage are common within the Bremer Catchment.

Well-designed and constructed dams are farm assets, safe and require little maintenance. Poor design and construction can lead to excessive costs, downstream erosion and risks to property and people. They should be part of an integrated farm water and salinity management program.

Dams block an existing waterway and are an excavation into which water is diverted.

A dam is an earth structure on near-level land used to store water, in which part of the storage capacity is below ground level. On sloping land, the dam is often called a hillside dam or just a farm dam.

The following guidelines are for earth dams that do not require a civil engineer (but an experienced Contractor). Hillside dams are a cost-efficient way of collecting and storing run-off water from a catchment where there is no easily accessible and suitable groundwater for pumping.

Farm dams are used: where filling is from a natural or improved catchment (grade banks or roadbed catchment); For drought proofing whole farms; for livestock water supplies; for crop spraying water; for domestic use on-farm; for fire-fighting water supplies and for aquaculture.

How farm dams work

Farm dams are most effective at holding water when the base and inside walls of the dam are sealed with clay of low permeability to minimise leakage, and when catchments are improved to increase and collect run-off. Run-off from crop land and pasture is not adequate to reliably fill farm dams. Run-off can be improved by using grade banks and roaded catchments.

Conditions where guidelines apply:

On gently to moderately sloping land, for hillside dams in agricultural and pastoral areas anywhere there is a requirement for initial or additional water supplies. These have to be near to, but clear of streams, creeks and rivers; positioned so that the overflow from the structure can be safely diverted to a stream, creek or river where a natural or improved catchment is of sufficient area to fill the farm dam.

Planning Considerations

"Code of Practice – Excavations' applies to all workplaces where excavation occurs.

Local government may have limitations on dam placement, especially in relation to roads and other infrastructure. For example, dams are not to be sited within 100m of a watercourse or within 200m of roads.

Refrain from sites close to and above buildings, work sites, roads, and valuable infrastructure. Avoid valley floors or drainage lines with shallow water-tables; check options for reducing salt build up in dams; allow space above the dam for improved catchment structures (grade banks or roaded catchments).

Calculate water needs for a full year in dry conditions; calculate water flows and storage based on dry years, and for the intended improved catchment structures; design inflow (silt traps, piped inlets) and outlets (outlet pipes, emergency spillway) to safely handle peak flows from intense storms.

Design dam and water access to reduce erosion and allow for maintenance; direct access by livestock is not recommended.

Consider fewer, larger dams and reticulation to reduce evaporation losses and increase flexibility of water distribution.

In Summery

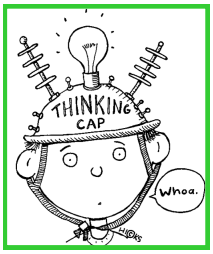
To ensure dams remain in save and working conditions, regular monitoring is recommended.

Lately, BCA has been receiving several calls about dam maintenance recommendations. While we are in the dry season, de-silt your farm dam when possible.

Calculate water needs for a full year in dry conditions; calculate water flows and storage based on dry years

To all interested Readers,

There are Grants available for different land resources maintenance. Put on your "thinking cap".



Have you seen Miconia?

Have you seen Miconia growing in Queensland? Miconia is a Restricted invasive plant being targeted for early detection and eradication.

Miconia invades rainforest areas, competes with native plant species and impacts the habitat of native fauna. It is easily recognised by the distinctive purple underside of the leaves. Report any sightings to Biosecurity Queensland on **13 25 23**.

Miconia flowers

Miconia fruit pannicle

Miconia plant form

Habitat

Prefers forested country, particularly in disturbed areas and along creek lines.

Also found in open country and domestic gardens.

Found in Far North Queensland and South East Queensland.

Control

Miconia is the target of a national eradication program.

New infestations must: be reported to Biosecurity Queensland on **13 25 23**

Be identified and removed by approved officers have their locations recorded prior to removal.

Legal requirements

Miconia is a restricted invasive plant under the *Biosecurity Act 2014*.

It must not be given away, sold, or released into the environment without a permit. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO).

At a local level, each local government must have a biosecurity plan that covers invasive plants and animals in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

For more information see: Weed Spotters Network Queensland Bulletin June 2019

.The East Ipswich Echidna Reserve by Darren Close

We Don't Inherit the environment from our ancestors, We borrow it from our Children

My name is Darren Close and I am the Junior Vice President of the Bremer Catchment Association.

In 2003, I unknowingly became a member of an exclusive club, being one of a handful of fortunate Ipswich residents who back onto the Bremer River. The Property is situated between the Blackall Street Bushland Reserve and the Barry Street Bushland Reserve along with 8 other Private properties. After witnessing first hand several floods on the Bremer and the loss of land I started to rehabilitate the riverbank starting at the low tide mark. Starting in 2014, I removed exotic weeds and actively gardened the natives in the tidal zone, dividing and planting rushes and sedged and planting river lily seeds as they were deposited on the bank.

In January 2018 I signed my property to became a partner with Healthy Land and Water and several months later formed the Blackall Street Action Group Facebook page. To promote what I was doing and encourage my neighbouring properties to also rehabilitate their section of the Bremer, with the goal of linking both bushland reserve. I call the project the "East Ipswich Echidna Reserve" (E.I.E.R) as I have been fortunate on several occasions to see Blackall Street residents monitoring me while in the backyard.

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The Goals of the E.I.E.R are;

The Rehabilitation of the Blackall Street and Barry Street Bushland Reserves

Encourage all Private land holders to join BCA.

Inspire river bank and tidal zone regeneration

Encourage Mycelium growth

To date 6 of the nine properties are HL&W partners.

5 Private land owners actively engaged in rehabilitation activities

In August 2018 I was Ipswich's first recipient of an Environment and Sustainability grant to continue rehabilitating the riverbank in the Blackall Street Bushland Reserve.

The river bank is being selectively cleared and there has been the re-establishment of native plants that have been lying dormant under a thick blanket of kikuyu grass. It is still early days in its rehabilitation, however it is already responding well to the care I'm taking in its restoration.

You're all welcome to pay me a visit If you would like to see firsthand the natural beauty of the project site.

March 2018 (30m2 Bank Slip

March 2019

Smart Farm Equipment to Greatly Reduce Use of Chemicals

The farm robot can kill weeds with 20 times less herbicide than traditional meth-

Nearly every week, we hear news about the latest successes and failures in **driverless vehicles.** But we hear little about how other industries are developing this same kind of technology.

One industry heavily involved in researching and developing **artificial intelligence**, or AI, is agriculture. Companies are experimenting with high-tech tools that can help farmers save time and money, while reducing environment-harming chemicals.

One of the companies is ecoRobotix of Switzerland. It created a **robot** equipped with AI and cameras to identify all plants on a farm. The robot has four wheels to carry it through the paddocks in search of **weeds**. Computer-controlled arms then lower and **spray** the weeds with small amounts of **herbicide**.

Company officials say the robot can fully operate on its own for up to 12 hours a day while being **powered by the sun.** It uses the same kind of sensor and positioning technology used to guide driverless vehicles. A farmer can also control the equipment through a smartphone.

The co-founder of ecoRobotix, **Aurelien Demaurex**, says the farm robot can kill weeds with 20 times less herbicide than traditional methods. This is because the system uses exactly the right amount of chemical in the exact place required to kill the weeds.

In this photo, ecoRobotix demonstrates its 'smart farm' technology, which uses artificial intelligence to identify weeds and precisely deliver herbicide to kill them.

Disclaimer

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Editor's Contact details:

Email: msteent@ngvemail.com

Mobile: 0414 381 664