



Streamlines

Newsletter of the Pullen Pullen Catchments Group Inc.

May 2021

This issue of Streamlines focuses on several citizen science projects currently running in Brisbane – the Big Butterfly Count, the Powerful Owl Project, Soils for Science and AusPollen Grass Gazers. Great opportunities to get hands-on with science. But before that, John Ness discusses what causes rainfall and the influence of land and sea temperatures on rainfall. Brisbane City Council has recently updated its blog on Recycling giving its top 10 recycling tips (reproduced on page 11). Finally, Healthy Land and Water this month launched a survey seeking information to develop a comprehensive body of data on the condition of South East Queensland's natural assets. It is asking for community input to identify any emerging threats to our future environment and liveability (see page 12).

Of great interest to PPCG members is the announcement by Brisbane City Council of the commencement of community consultation on the proposed development of Anstead Bushland Reserve. To have your say, complete the online survey at www.brisbane.qld.gov.au 'Anstead Bushland Reserves Concept Plan'. Otherwise, call Council's 24-hour Contact Centre on 3403 8888, visit the Council website or email parks@brisbane.qld.gov.au. We have until 11.59 pm on June 6 to respond.

The PPCG Website has been upgraded recently. Apart from general information about the catchment group, it provides access to back issues of Streamlines and other resources as well as databases on local birds and plants. Many, many thanks to Nola Dean for her persistence in bringing this project to its present state of excellence.

Another exciting development this year has been the creation of the PPCG Facebook Page. Thanks to Emma Barrie who created and manages the page. Check it out for local activities.

All members are welcome to submit articles to Streamlines via helian@pretirementresorts.com.au. The deadline for the next issue is 15th August 2021.

Helen Ogle
Editor

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Pullen Pullen Catchments Group

A Landcare Group

Meetings

Meetings are held at 7pm on the first Wednesday of each month at Pullenvale Environmental Education Centre, 250 Grandview Road, Pullenvale.

Website

www.pullenpullencatchments.org.au

Working Bees

Anstead Bushland Reserve – 1st Sunday of the month, 8.30 - 11 am.
Pullenvale Forest Park – 2nd Sunday of the month, 8.30 – 11 am

Tools, gloves, etc are provided at Working Bees. Just wear sturdy boots, tough clothes and bring water and a hat!

Committee Members 2021

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Membership Options

Membership fees are:

- Annual Membership – \$10 per person payable on March 1 each year
- Life Membership – \$100 per person

We are delighted to accept donations.

- a) Send a cheque payable to PPCG to PO Box 1390, Kenmore, 4069 or
- b) Transfer the funds electronically to BSB 064 152, Account No.10107038 Ref: your name.



Dedicated to a better Brisbane

“The PPCG acknowledges the support of the Lord Mayor’s Community Sustainability and Environmental Grants Programs for a grant to help with administrative, bushcare and educational costs”

NEWS

Anstead Bushland Reserve is still without a Bushcare Coordinator. John Ness is temporarily filling the position to enable work to continue at this site. For more information or to express your interest in this position, please contact PPCG at contactus@pullenpullencatchments.org.au. **Working bees at Anstead Bushland Reserve currently take place on the first Sunday of the month from 8.30 to 11am.**

As promised in last year's election, Brisbane City Council intends developing a high-level concept plan for a diverse range of nature-based recreation activities and facilities within the Anstead Bushland Reserve. The concept plan will identify low impact outdoor locations for future recreation opportunities and visitor facilities, and demonstrate how the reserve values will be protected and enhanced for the long-term. The planning priorities for Council's natural areas is nature conservation, followed by the provision of outdoor recreation opportunities.

This is a concept only at this stage and local community input will be taken into account in the development of the final concept, which is expected to be released later this year. Community consultation around this development has commenced. To complete the online survey, visit www.brisbane.qld.gov.au and search 'Anstead Bushland Reserves Concept Plan'. Otherwise, call Council's 24-hour Contact Centre on 3403 8888, visit the Council website or email parks@brisbane.qld.gov.au.

Karen Roberts submitted the following suggestion. 'On the subject of future projects, PPCG is supposed to be thinking about projects within the catchment. Whether it's stabilising the banks of an ephemeral waterway, getting rid of weeds to improve habitat for koalas or just beautifying one of our local reserves, Brisbane City Council wants to know about it. A few of our members (Liz, John and Karen) attended a Brisbane Catchments Network mapping education evening in March. The BCN mapping tool allows PPCG to have projects ready at the conceptual level, so if there are last minute funding releases we can jump on them without having to start from scratch.

So far we've dreamt up a few projects – improving the access to the quarry floor in the Anstead Bushland Reserve (see Streamlines 2018), capitalising on our recent rains and doing some weed management and canopy tree planting within the gully area between the tarred quarry access road and the powerline easement. The projects are simply marked as a polygon on a plan, and accompanied by a few sentences and some photographs if we have them. So if you have any project ideas please contact our Secretary Liz (she and Karen will be more than happy to help scope out and map them up with you).'

Pullenvale Forest Park Celebration Day – Sunday 18th April 2021 (contributed by Karen Roberts)
The Pullenvale Forest Park Celebration Day and community planting event was a great educational and fun experience for our whole family.



After getting dirty planting about 400 plants on the south side of the creek (thank goodness the rain had prepared the soil wonderfully and the holes had already been dug), Martin from Geckos Wildlife brought out a range of native animals, including Boo the four month old Boobook owl. Shaggy, the carpet python was also a hit and Charlie the channel bill cuckoo was the noisiest animal present

(including humans). As Martin showed the animals he spoke about their role and importance in urban ecological cycles and food chains.



Martin from Gecko's Wildlife with a carpet python, squirrel glider and Boo, the juvenile Boobook Owl

Hollow Log Homes cemented these concepts as they spoke about the importance of providing habitat boxes and artificial nest hollows for hollow-dependent mammals and birds. It took less than 3 months for families of squirrel gliders to colonise the nest boxes installed along the creek and, while checking some of the nest boxes, a powerful owl was seen keenly watching (possibly thinking that nest box will produce my evening meal).



Hollow Log Homes (left) and John Ness and Julian Simmons addressing the community planting event (right)

Christian Rowan and Julian Simmons participated in a ceremonial planting (in an area adjacent to the creek near to where John Ness planted some hoop pines in a ceremonial planting around 20 years ago). The Brookfield Lions Club saved our stomachs with some delicious sausage sandwiches.

Well done Lynn, Brendan, Andrew, our local members of state and federal parliament and the PPCG committee for all you did to conceptualise, organise and promote this well rounded, fun, educational and inspirational community event.

Moggill State School Nursery Project (contributed by Karen Roberts) Following a couple of working bees (and a lot of manual labour from our wonderful president John), the Moggill School Nursery is looking great. There are a number of smaller plants in the shade house awaiting a potting up morning with the kids, a pile of soil ready to use in the potting up, and ample paved area set up outside (with sprinklers) to take the potted up beauties. We just need some 30cm pots donated to facilitate the potting up so if you have some old pots spare (we could do with about 100) please contact John or Karen.



Nursery at Moggill State School – shadehouse (left) and outside paved area (right)

Peaks to Points returns in 2021 Celebrating Southern Brisbane’s diverse natural environment, the ‘Peaks to Points Festival’ is set to be held from Saturday 17th July to Sunday 1st August 2021. Catering for all age groups, the festival will feature numerous opportunities for sustainable fun including: guided walks, bird-watching, scavenger hunts, tree planting, tours, and spotlighting. The festival’s popular FREE Family Day will be held at the Oxley Creek Common, Sherwood Road, Rocklea, on Sunday 18 July. Families can enjoy live entertainment, interactive/informative stalls and displays and lots of playful activities for the littlies whilst promoting the beauty and value of our local environments and the groups that care for them. We welcome any environmental or community groups willing to host an event, activity or wanting to promote their work. Contact OCCA on 07 3345 5541 or email info@oxleycreekcatchment.org.au

Platypus monitoring Wildlife Queensland’s PlatypusWatch Network has been monitoring local Queensland platypus populations since 2005. In 2016, it introduced a revolutionary and exciting monitoring method called environmental DNA (eDNA). Water samples are analysed for platypus specific marker DNA. Animals don’t have to be seen and identified to be confident they are within a waterway. Pullen Pullen Creek has been consistently positive over the years, suggesting a resident animal/s with sustaining habitat resources. If you see a live or dead platypus please report to PlatypusWatch Network on (07) 3844 0129 or platypus@wildlife.org.au. If you find an injured platypus please phone RSPCA Queensland 1300 246 625, Wildcare Australia (07) 5527 2444, Australian Wildlife Hospital 1300 369 652 or Currumbin Wildlife Hospital (07) 5534 0813.

The Moreton Bay Foundation (TMBF) offers a range of activities including Days on the Bay and opportunities for young scientists to participate in research studies. A recent report included the following: ‘In a preliminary study of the three Australian estuaries, Brisbane, Melbourne and Sydney, the concentrations of 25 medicines and 53 pesticides were measured. Carbamazepine, a medicine used to treat epilepsy and neuropathic pain was detected in all water samples in all three estuaries. Other dominant pharmaceuticals measured were gabapentin, iopromide, venlafaxine and tramadol. Similarly, the current-use pesticides; atrazine, diuron, metolachlor and simazine were prevalent in all three estuaries. Generally, contamination was higher in the Brisbane River estuary than Sydney and Melbourne.’ Not a great recommendation!

Frogs in your backyard Wildlife Queensland Bayside Branch reports that frogs are disappearing from our backyards for many reasons, mainly lack of water in which to breed, the overuse of pesticides and the cultivation of gardens. To bring those night sounds back we need to return habitat to a more frog-friendly state. Ways in which we can do this are to stop using pesticides and allow natural pest controllers to do their job. Frogs and birds will eat insects, blue tongue lizards will dispose of snails and small insectivorous bats will eat their weight in mosquitoes. Secondly, we can plant native shrubs and grasses and leave the litter from them lie on the garden to provide hiding places as well as food. Thirdly, we can build a simple frog pond. Details on their website.

It Doesn't Rain but it Pours

John Ness

1.0 Changes in Rainfall

Long term catchment residents would have noticed that rainfall has been on a long term decline – some estimates from local rain gauges have a figure of around 10 mm per year. This may not seem much but over a period of about 50 years from the 1970s it means that the rainfall has dropped to around two thirds of what it was, from 1200 mm pa to 800 mm pa. This is not trivial for plants, people or wildlife. There has also been a qualitative change in the rain. The rain tends to be more erratic, rain often appears imminent but does not happen and when it does the bursts are heavier. A number of Queensland centres have seen the records rewritten for the maximum rainfall in an hour or a day over the last few years and March 2021 saw new rainfall rate records for much of coastal New South Wales.

The CSIRO has produced predictions of the changing rainfall patterns across Australia. Temperate coastal regions such as Brisbane are predicted to get drier while some dry areas of central Australia will get wetter. However, there is a fundamental driver to the changes in rain fall. This is the temperature dependency of the ability of the atmosphere to hold water in the form of vapour. For each 1°C increase in temperature the atmosphere can hold about 7% more moisture and while this number may look small it has far from trivial implications. The difference between the sea surface temperature and that of the land around eastern Australia has increased by 1°C over the past 50 years and it is this differential increase which is the primary driver of rainfall patterns.

2.0 Increases in land and sea surface temperatures

Why has the average temperature difference between land and sea increased? The heating caused by increasing levels of CO₂ takes days to months to change average atmospheric temperatures, months to years to increase the land surface temperature but years to decades to increase ocean surface temperatures. Water has a higher thermal mass than air or land and the ocean surface gradually overturns and mixes with cooler deeper water so it takes more energy operating over a longer time to shift ocean surface temperatures. The higher sea surface temperatures mean that more moisture gets into the atmosphere but even higher temperature increases on land mean that it is more difficult to get the moisture out. However, under certain conditions this extra moisture can be extracted and then the trouble starts.

3.0 Quantitative changes in water content.

As a first step, it is helpful to get a quantitative feel for how much moisture the atmosphere holds. The basic measurement for this is the humidity which is usually quoted as relative to the maximum amount that can be held as vapour at a given temperature. A value of 60% relative humidity means that the atmosphere is holding 60% of the maximum value. How much is this maximum value? Rather than think of it as a percentage, it may be easier to consider the depth of water that could be extracted from 100 m high saturated air column. The depth of water, if all extracted, on the bottom of this air column at different temperatures would be approximately as follows:

Air Temp (°C)	Water Depth (mm)
10	0.8
15	1.1
20	1.5
25	2.0
30	2.8

The above numbers may seem small but rain does not fall from just a 100 m high block of air. It usually falls from a column of air which may be several hundreds of metres high and is often continually being replenished with more moist air.

4.0 What causes rain and how much

Why does the rain fall? It is basically by cooling of the air, for example, as night falls or by the moist air moving upwards or both. As the column of moist air is lifted upwards due to the terrain, winds or atmospheric turbulence or some combination, it cools at a typical rate of $0.65^{\circ}\text{C}/100\text{ m}$. The column of air can then hold less water vapour and some precipitates out as water which eventually falls as rain or as ice if the column is lifted high enough. Interestingly enough although we tend to think of high humidity as oppressive, the higher the humidity the less dense the air so humid air tends to float upwards.

Suppose a 100m column of saturated air was at 25°C at ground level. There would be 2.0 mm of water in this column. If this column of air was lifted about 800 m it would cool to 20°C where it could only hold 1.5 mm of water. In this case 0.5 mm of rain would fall. If the column was replenished every 30 minutes then the rain would fall at around 1 mm per minute or about 60 mm per hour.

How does this 1°C increase in temperature difference between land and sea surfaces driven by global warming affect this? Some rough figures will illustrate the situation.

The surface temperature of the ocean off SE Queensland, the main source of rain in Brisbane, has warmed over the last 70 years and for illustration purposes assume it is now about 1°C higher in summer time from say 24.5°C to 25.5°C . On a late summer evening in 1950, the temperature over the land could be say 29°C but this is now 2°C hotter at 31°C as the land to sea average temperature difference has increased by 1°C

5.0 Numerical example comparing 1950 to 2021.

Back in 1950, the saturated air blowing in from the sea at 24.5°C would hold 2 mm of water per 100 m column. If this air is lifted to 700 m by the buoyancy of moist air and the sea breeze being directed upwards by Mt. Coot-tha, then it will just start to rain. If the air continues to lift to double the height at 1.4 km then it will cool to 20°C where the air can hold only 1.5 mm/m and so 0.5 mm of rain per 100 m of air will fall. If the uplifting breeze was a mild 5 kph, then the rainfall rate would be 25 mm/hr.

Now consider the case in 2021 with increased temperatures and increased land to sea differential. The sea breeze at 25.5°C now holds 2.15 mm of water per 100 m of air but this encounters the land temperature of 31°C . If the air is uplifted by 700 m as before no rain falls as the air temperature is still too high. The air has to be lifted to 850 m to get the temperature to drop to 25.5°C where precipitation will just start. So, it can be seen that the upward air movement has to be more marked, by about 20%, to get rain to fall. What happens if the upward air movements are strong enough that the height can be double that required for precipitation as previously. In this case the air will get to 1.7 km, the temperature will drop to 20°C where only 1.5 mm of water can be held leaving 0.65 mm as rain. If the breeze speed stays at 5 km/hr then this gives a rainfall rate of 33 mm/hr which is about 30% higher than in 1950. However, in practice the increase in differential sea and land temperatures and the increased buoyancy of the more moist air will cause the upward air movement to increase so assume a still modest speed of 6 kph. In this case, the rainfall rate has increased to nearly 40 mm/hr which is 60% more than in 1950.

In summary, then, the atmospheric conditions now have to be more active to drive the hotter air higher to get rain to fall but if the conditions are considerably more active, which will happen both by chance and due to the increased temperature differences and variability then there is more rain to fall and it will do so at a faster rate. This will settle down to a new equilibrium once CO_2 forced warming stops but that requires people to stop adding CO_2 and other greenhouse gases to the atmosphere.

It has also been verified that cyclones are getting larger, last longer and travel further inland. The reason for this is that the fuel of cyclones is water vapour and these consequences follow from adding more fuel. When water vapour condenses it emits over 5 times the energy that it takes to heat the water from just above freezing to just below boiling, a change of 100°C . With higher moisture levels in cyclones, there is more rain to come out, the rain will last longer as the cyclone moves inland and the extra energy emitted will keep the cyclone lasting for longer.

Citizen Science Projects

1. Big Butterfly Count

The Big Butterfly Count has already produced exciting results including a newly arrived butterfly. **Tawny Coster (*Acraea terpsicore*)** was recorded at Boondall Wetlands during a Brisbane's Big Butterfly Count survey in April.

Originally from Sri Lanka and India Tawny Coster didn't take long to arrive in our neck of the woods. Apparently it spread through Asia in the 1990s, went through the Malaysian Archipelago in the 2000s and was first recorded in Northern Australia in 2012, in Queensland (Cairns) in 2017. In November 2020, Jackie Beer (Australian Butterflies and Moths - Facebook Group) recorded a sighting below Victoria Point.

PPCG member Karen Roberts had a recent encounter with a Tawny Coster which she describes as follows: 'I had my fold up butterfly net in my mountain biking pack this morning (LUCKY!) because at around 930am, as I was riding along the Ripley's Trail in Daisy Hill Conservation Park, I got to the top of the knoll and spotted this Tawny Coster! I whipped out my net, assembled it and got this on my first sweep!!! (then released after photographing). It was just being attacked by other dainty swallowtails and then minding its own business on a twig.'



Tawny Coster Butterfly (photographs by Karen Roberts)

You may like to read "Arrival of Tawny Coster butterflies on the East Australian Coast coinciding with the winds of Tropical Cyclone Debbie" (2017) and "A new immigrant butterfly for Australia" by the Butterfly and Other Invertebrates Club.

Moggill Conservation Park Ecology walk Sunday 9th May 2020 (contributed by Karen Roberts) As part of Brisbane Catchment Network's Brisbane's Big Butterfly Count, an ecology walk was held on Mother's Day morning (in overcast conditions not really conducive to butterfly spotting). One highlight was seeing ants attending to the caterpillar and chrysalis of the common imperial blue or the imperial hairstreak butterfly (awaiting verification from the gurus). These butterflies and ants, occur on acacias but only when the ant colony is found nearby, to protect the caterpillars and chrysalis from predators. A wonderful symbiotic relationship.



Ants attending the larvae and pupae of the blue hairstreak or the common imperial blue, protecting it against predator attack

Thanks to BCN and Jutta, from CWCN, for driving Brisbane's Big Butterfly Count activities in our region. On previous solo adventures within Anstead Bushland Reserve and Moggill Conservation Park we've spotted butterflies that have not been seen elsewhere in Brisbane this year. We are so fortunate to live so close to an amazing diversity of species.



The Fiery Jewell (which makes Pullen Pullen Catchment its home) and a leaf beetle

2. Powerful Owl Project (contributed by Karen Roberts)

My last article (March 2021 Streamlines) was about my butterfly fascination and the joy that catchment group activities bring to my family and friends. As the weather started to cool, and the butterfly activity started to slow down, our wonderful Secretary Liz must have sensed the growing gap that needed filling and sent through a couple of great outdoor educational opportunities - it's Owl season!

I registered for the Birdlife Australia **Powerful Owl Project** (<https://birdlife.org.au/projects/urban-birds/powerful-owl-project-pow>) and it's inspired our family to more actively observe while walking through the bush during the daylight hours (in search of the perfect Owl or glider nest hollow, which we'll come back to at night to check for life). We now also brave (and marvel at) the spooky after-dark forest sounds on night-walks: the gibbon-like call of the White Throated Night-jar, the hair raising screech of the Australian Owlet night-jar (internet search and listen to those) and the beautiful boobook (insomniacs worst nightmare). We spotted a Boobook Owl hunting over the grassy area beneath the powerlines in Anstead Bushland Reserve, some Tawny frogmouths and a Koala in the Moggill Conservation Park, but so far our powerful owl experiences have been limited to seeing plenty of potential nest sites.



Night-walking in the Anstead Reserve Quarry Lookout where a Boobook Owl was hunting

I encourage you to go for a walk in the forest after dark to experience the different sounds and see if you can find an owl. There are some great downloads towards the bottom of the powerful owl project website (link above) to help with identification of nocturnal bird life along with powerful owl calls, a presentation on owl identification, some youtube videos and a downloadable educational kit

(for the classroom, or next time a global pandemic requires home schooling with opportunities for outdoor educational releases ☺).

3. Soils for Science

There is an urgent need to develop more effective drugs as bacterial and fungal infections are becoming increasingly resistant to antibiotics. Globally, over three million people die from bacterial and fungal infections each year. In Australia, the death rate from antibiotic-resistant bacteria is higher now than 10 years ago.

Soils for Science is a citizen science project to collect, process and study 100,000 backyard soil samples from across Queensland. Researchers at the University of Queensland's Institute for Molecular Bioscience will grow and analyse the micro-organisms in each sample. The chemicals produced by the soil micro-organisms will be catalogued and used to develop new antibiotics and other life-saving chemicals.

The project will assemble a 'living library' of more than two million micro-organisms which will be made freely available to medical and research communities to aid the development of new life-saving drugs.

Soils are being investigated because more than half the antibiotics available worldwide have been developed from micro-organisms found in soil and nature. For example, penicillin used to treat illnesses such as pneumonia, meningitis, septicaemia, anthrax and tetanus, was derived from the soil fungus *Penicillium*. Similarly, statins which lower blood cholesterol levels, were originally derived from the soil fungus *Aspergillus*.

Queensland is an ideal sampling area as it covers 1.7 million square kilometres and has one of the most biodiverse environments in the world spanning beaches, rainforests, wetlands and deserts.

Anyone living in Queensland can take part in Soils for Science by requesting a free soil collection kit from soilsforscience.org.au. Participants will be able to see close-up photographs of the micro-organisms growing in their backyards via the website or Soils for Science app.

4. AusPollen Grass Gazers

Grass pollen exposure has an adverse impact on the health and everyday life of allergy sufferers in our community. The AusPollen Grass Gazers project aims to improve our knowledge of the distribution and types of grasses around us and when they flower and produce pollen.

Citizen scientists who contribute to this project with location and images, abundance and flowering stage of grasses around Brisbane will help better predict pollen levels so that people in our community can better manage their allergies. Project observations will be entered using the iNaturalist_Australia platform.

An initial scoping study was conducted in partnership with Corinda State High School students during term 2 of 2020. To read more about the study and its outcomes, see 'Grass Gazers: Using citizen science as a tool to facilitate practical and online science learning for secondary school students during the COVID-19 lockdown'.

This project is led by the QUT Allergy Research Group and supported by project partners Corinda State High School and the Queensland Herbarium. The project is proudly supported by the Queensland Government – Queensland Citizen Science Grants and the QUT Centre for the Environment.

Interested citizen scientists and grass identifiers are needed for the project's success. If you want to be involved or have any questions or feedback, please contact grassgrazers@qut.edu.au. Their website is auspollen.edu.au/brisbane/index.php/aboutgrassgrazers/.

Recycling

Brisbane City Council is committed to making Brisbane cleaner and greener by reducing waste to landfill. Recycling is a simple way you can help the environment. Use our top 10 recycling tips to help you become a better recycler!

- 1. Identify recyclable items around the house.** Recycling is easy if you remember that paper, cardboard, firm flexible plastic, metal (aluminium and steel), and glass can be put in your household recycling bin. You can also check items for the Australasian Recycling Label to help identify if it can be recycled.
- 2. Look for the new Australasian Recycling Labels.** This is a standardised system that provides easy to understand recycling information. Remember if an item doesn't have a label and is made from paper, cardboard, glass, metal, or plastic, it can be recycled.
- 3. Aerosol cans are recyclable.** You can safely dispose of empty aerosol cans and containers that previously held household chemicals in your recycling bin.
- 4. Trust the process.** Do your best to decide if an item can be recycled and trust in Council's state-of-the-art recycling system. Brisbane residents are great recyclers, with only 10% of non-recyclables incorrectly placed in recycling bins.
- 5. Use different bins to collect more.** Make collecting recyclables at home easier by placing a bin for recyclables in your kitchen, bathroom, and laundry. Sorting your recyclables at the point of disposal may help you recycle more.
- 6. Containers do not need to be rinsed.** You don't need to rinse your containers before placing them in your recycling bin. Although rinsing reduces bin odours, unrinsed containers do not ruin a whole load of recycling.
- 7. Do not put your recyclables in plastic bags.** Throw loose items in your recycling bin. Don't put them inside a plastic bag. Plastic bags cannot be opened at the recycling facility for safety reasons, and all the goods inside are sent to landfill.
- 8. Don't forget that every little bit counts.** Even making the effort to recycle one or two extra items each week, such as the junk mail from the letterbox or the empty air freshener can from the bathroom, helps conserve precious resources from going to landfill.
- 9. Know when to remove the lids from containers and bottles.** Only remove the lids from containers and bottles when returning these items to a container refund point. Otherwise, leave the lids on when placing items in your recycling bin.
- 10. Only glass jars and bottles are suitable for recycling.** Drinking glasses, ceramics and heat-proof glass (e.g. Pyrex) melt at different temperatures and cannot be recycled. Put these items in your household rubbish bin.

More information

The information included in this blog is also available on Council's free Brisbane bin and recycling app. This app can help you:

- learn what to put in your recycling bin
- remember your bin collection days
- find out about Council's waste and resource recovery centres and services.

Date posted: Tuesday, 16th February, 2021

New Survey on Environment and Liveability of South East Queensland

‘Your chance to give input which will help drive planning for a healthy environment and long-term liveability for South East Queensland is underway this month. People from across the region are being encouraged to get to have their say.

The 2021 South East Queensland Natural Resource Management Plan (NRM Plan) survey was officially launched at Esk last week, with local mayors, community and industry leaders joining the region’s leading environmental group, Healthy Land and Water, for the event.

Designed to highlight a comprehensive body of data on the condition of South East Queensland's natural assets and seek community input to identify any emerging threats to our future environment and liveability, the interactive, informative and engaging survey has just gone live.

According to Healthy Land and Water’s CEO, Julie McLellan, the collated data from the survey will be used to help jointly plan collaborative strategies and actions which produce benefits for the whole community and a desirable future for our region. She says the broadest input from across South East Queensland is vital.

“It is important that we hear from as many South East Queenslanders as possible to ensure the plan reflects the most current information and is responding to changing circumstances,” says Ms McLellan. The collated information collected in the survey will be added to the deep dive into the science and data happening concurrently as part of the review.

“An important part of the review is identifying challenges and priority actions to protect and restore the region’s natural assets (e.g. air, water, soil, and native vegetation). This is vital in building the resilience of our future region.”

Ms McLellan says participants can also register interest in further engagement about the plan including regionalised webinars, focus group meetings and workshops, and go into the draw to win \$250 for their effort.

“If you love South East Queensland, I strongly encourage you to get involved in having a say about its future”.

This project is supported by Healthy Land and Water through funding from the Australian Government’s National Landcare Program.

About the survey

- The NRM Plan survey is being run by the environmental peak group for the region, Healthy Land and Water, which is charged with managing the region’s Natural Resources Management Plan (NRM Plan).
- The NRM Plan is a living document, which aims to halt and reverse the decline of South East Queensland’s natural assets.’

