



Quarterly Update No 11 ... January 2018

New year greetings ... enjoy LUCI's Update!

The Lockyer Creek catchment¹

"Everyone lives and works in a river catchment. Everything you do in your backyard, your school playground, your farm or your business then has the potential to affect waterways lower down the catchment, and ultimately the ocean and marine life."²

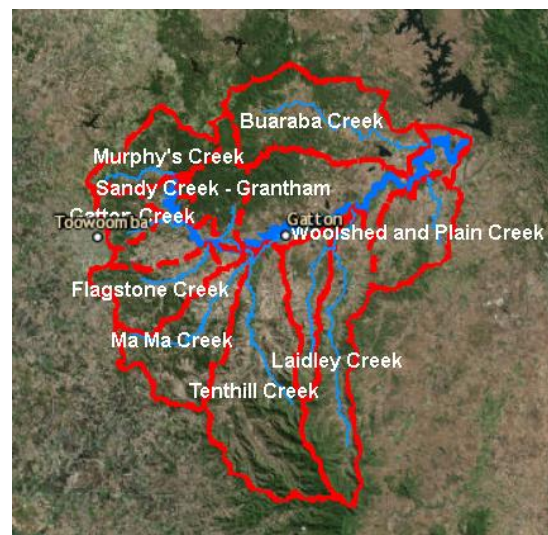
A catchment is an area with a natural boundary (e.g. ridges, hills or mountains) where all surface water drains to a common channel to form rivers or creeks. The Lockyer Catchment covers approximately 3,000 square kilometres and is bounded by the eastern slopes of the Great Dividing Range. The Lockyer catchment is just one of a number of catchments that flow into the Brisbane River; others include the Upper Brisbane, Stanley, Bremer, Lower Brisbane and Oxley catchments.

On the slopes of the eastern and southern sides of the catchment, the landscape contains basalts, which enable high amounts of water infiltration and recharge the groundwater system with good quality water. Much of the remaining catchment is underlain by sandstone formations which aid water infiltration, but can also produce naturally saline groundwater.

The main channel or "macrochannel" in the Lockyer Creek Catchment is Lockyer Creek which is surrounded by deep alluvial plains, made up of permeable silts, sands and gravels, absorb and hold water, and recharge groundwater systems.

The flows into this main channel come from several smaller subcatchments. Each of these smaller areas has its own drainage and creek systems.

The Lockyer subcatchments include Laidley Creek, Sandy Creek (Forest Hill), Tenthill Creek, Ma Ma Creek, Flagstone Creek, Gatton Creek, Murphy's Creek, Sandy Creek (Grantham), Upper Lockyer Creek, Buaraba Creek, Woolshed and Plain Creeks and Lower Lockyer Creek.



Lockyer Creek catchment system

Together, the subcatchments include a range of water bodies such as groundwater reserves, creeks and rivers, lakes, reservoirs and wetlands while each subcatchment has its own waterflow characteristics. For example, Flagstone Creek subcatchment contains very steep slopes and the rock types have a lower groundwater recharge potential. On the other hand, the upper section of Tenthill

¹ Unless otherwise referenced, the content of this item is taken from the Lockyer Catchment Action Plan 2015-2018. https://seqmayors.qld.gov.au/wp-content/uploads/2016/08/Lockyer-CAP_WEB_final.pdf and *Walking the Landscape - Lockyer Catchment Map Journal v1.0 (2016)* <http://qgsp.maps.arcgis.com/apps/MapJournal/index.html?appid=e64a7303aff74f2e83454e6baf35651a#>

² https://www.ehp.qld.gov.au/water/catchment_care.html

Creek generally receives very high rainfall and combined with the very steep slopes, leads to rapid creek flows. The water loses energy and slows down when it reaches the floodplain. The Ma Ma Creek subcatchment involves steep slopes, which combined with vegetation clearing, promote increased run-off and thus soil loss.

Vegetation affects how water flows through the catchment, slowing and retaining water longer in the landscape while reducing erosion potential and sediment movement. Historically, the Lockyer Creek catchment contained Iron bark woodlands, Semi-evergreen vine thickets, Brigalow, and Forest Red Gums and grasslands. Half the catchment has now been cleared for farming, urban development and industries. In addition, built structures such as roads, railways, creek crossings and levees, can redirect water and increase flow rates and create downstream bank erosion.

and the state of our catchment...

A number of initiatives are focusing on the health of our catchment and priority remedial actions. Examples include:

- * Water security issues - *LVRC Draft Pre-feasibility Study - Water for agriculture productivity and sustainability.*
- * The downstream impacts of sediment movement from the catchment - *LVRC's Lockyer Action Catchment Plan 2015-2018*, part of the Resilient Rivers Initiative.
- * The condition and benefits of South East Queensland's waterways (including the Lockyer Valley) - *Health Land and Water's Report Card 2017.*

If we go back to the opening quote that "everything you do...has the potential to affect waterways" then we might agree with Eldridge³ that assessments of catchment

³ Eldridge, D.J. (2002). Assessing catchment health. In: K. Kent, G. Earl., B. Mullins, I. Lunt and R. Webster (eds.) *Native Vegetation Guide for the Riverina: Notes for Land Managers on its Management and Restoration.*

health need to refer to "a range of components (ie. landscapes, soils, plants and animals) rather than just one or two components". In other words, catchment health goes beyond measures related to water flows only and includes measures related to the land condition and biodiversity indicators.

November 2017 Breakfast

Forty eight adults and twelve children attended the November Breakfast at the Darvalls where Dr Don Sands, guest speaker, spoke on *The World of Insect Interactions - All Plants and Animals Depend on Them.*

Don's presentation highlighted the range of functions performed by insects in creating and maintaining a healthy ecosystem. Insects can be food for other organisms and regulate the health and abundance of organisms among other functions.

Some of the many examples provided by Don include: dung beetles reducing the incidence of disease

vectors; stick insects being the main food for the Pacific Baza; Cossid moth larvae being essential food for Yellow-tailed Black Cockatoo; the symbiotic relationship between the larvae of the moth *Trisyntopa scatophaga* and Golden-shouldered parrot in termite mounds; and changes in species distribution being indicators of climate change.



Highlighting the relationship between insects and their habitats, Don described

pp. 20-24. Charles Sturt University, Albury. <http://www.csu.edu.au/faculty/science/herbarium/riverina/chapters/chapter4.pdf>

the often catastrophic impacts on insect populations of such events as changing weather patterns and land disturbance from clearing, burning and weed invasion. Some butterfly and moth species and their attendant species (e.g. ants) are declining in numbers due to loss of essential habitat plants (e.g. mistletoes, rainforest vines) while ecosystems of other insects are threatened by the flammability of invading exotic grasses.

The breakfast gathering also welcomed the Principal and four of the Mount Sylvia State School Year 6 students of 2017 who reported on the school's riparian restoration project undertaken with LUCI last September. The project is proving a great success with, at least 80 percent of the 500 trees and grasses planted not just surviving but thriving. Thanks to the students and the school's grounds maintenance officer for keeping the weeds in check, which, unfortunately, are also thriving.

Lockyer Uplands Glossy Black Cockatoo Project: Phase 2

Notwithstanding testing conditions (summer heat and lantana), a small group of LUCI members have Phase 2 of our GBC project well underway. The project focuses on the relationship between flowering, pollinating and growth cycles of local *Allocasuarina* species and the occurrence of GBC feeding.

Ten LUCI members are participating in the project, which involves surveying a sample of feed trees on their property. Landholders can opt for using either a random walk method or a transect survey method. To date, over 500 trees with a circumference⁴ of 93mm or greater have been surveyed and tagged for ongoing monitoring with a number of transects yet to be surveyed. Permission has been given to include a sample of transects in Dwyers Scrub, which will assist

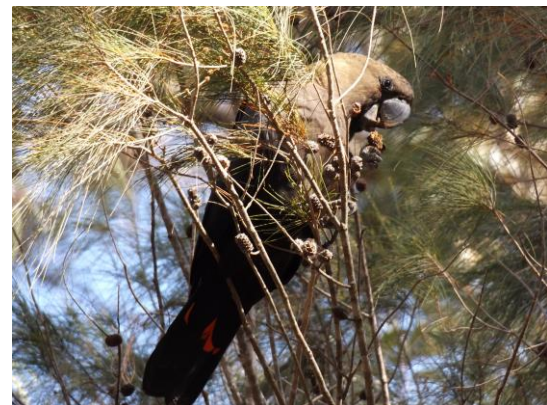
LUCI's efforts to understand and monitor native habitat connectivity in the landscape.



*Griffith University researcher Nico Rakotopare helps a LUCI member measure *Allocasuarina* trunks*

Dr Guy Castley, our project mentor, will be visiting with us from 8th-9th February to assist with transect surveying and to hear about the group's progress and answer any methodology questions.

LUCI members have been reporting evidence of Glossies feeding on their properties in the last couple of months. Orts are being found under *A. torulosa* (Forest She-oak), *A. littoralis* (Black She-oak) and, surprisingly, on one property, *A. inophloia* (Woolly bark She-oak).



A Glossy Black observed by LUCI members while conducting surveys

For more information on the GBC, check out the Glossy Black Conservancy website at http://www.glossyblack.org.au/correct_id.html

⁴ Not diameter as incorrectly described in LUCI's October Update.

Lockyer Uplands Koala Project

While we often hear LUCI members report koala sightings on their property, LUCI is keen to get a better picture of koala presence, distribution and habitat use in the Lockyer Uplands. In general, what we know about koalas in South-east Queensland comes mainly from research and monitoring on urban koala populations.⁵

Efforts to understand koala populations and dynamics in the Lockyer Valley have begun. Laura Affleck, a Griffith University student in 2016, conducted a koala survey in Lockyer National Park for her Honours thesis. Some LUCI members assisted Laura in her work and learned about the grid-based koala survey method. This method records the presence/absence of koala scats under 30 live trees at each intersection of a grid-based map of an area. In Lockyer National Park, grid intersection points were at 1km intervals. The method indicates whether koalas are using an area and enables a measure of how much koala activity is occurring.⁶

In 2017, a small group of LUCI members and supporters, with the assistance of Laura, applied the grid-based survey method, using 250m intersection intervals, on a Mount Whitestone property. The landholder was curious to know if koalas were using the feed trees on his property. Of the thirteen grid points surveyed, more than 50% of the points indicated koala presence.

This year, LUCI is officially launching its Lockyer Uplands Koala Survey to better understand our koala populations and better plan our habitat conservation efforts. Already, two LUCI members, also in the Mount Whitestone area, have agreed to a

grid-based survey being conducted on their property. Dr Guy Castley, Griffith University, has agreed to mentor LUCI's koala project and provide the grid maps. We are also discussing with Guy opportunities to provide field research experience for students.



*Koala observed on a Fordsdale property in December.
Photo by Nicolas Rakotopare*

If you would like to know whether koalas are using your property and to what extent, consider having a survey done on your property. Contact Diane on 0413 333 681 for further information and, if there is enough interest from landholders, Guy is willing to conduct a workshop on the grid-based sampling method.

Junior Citizen Science

LUCI will be partnering again with Mount Sylvia SS Principal, Mark Thompson, on a project that aims to embed on-ground practical experiences in the science curriculum. Students will be studying soil nutrition as part of their earth science module and delving into the benefits of worm farming for improving soil. LUCI members can participate in helping students set up their worm farm and assist with teaching resources. If you have knowledge and skills to share on soil, soil health and/or worm farming and would like to be involved in this project, send us an email at lucatchmentsinc@gmail.com.

⁵ Koala Expert Panel Interim Report 2017
<https://www.ehp.qld.gov.au/wildlife/koalas/pdf/koala-expert-panel-interim-report.pdf>

⁶ For further information see
<http://www.biolink.com.au/sites/www.biolink.com.au/files/publications/Phillips%20%26%20Callaghan.pdf>
http://www.environment.nsw.gov.au/resources/threatenedspecies/koala_survey_results_seforests.pdf

Later this year, the students with the help of Mr Thompson and LUCI members will prepare a community education resource on the riparian restoration project undertaken in 2017. The audience for the resource will be other students. The resource will document the journey of preparing, undertaking and maintaining a riparian restoration project.

Friends of Dwyers Scrub Project

Work continues in Dwyers Scrub Conservation Park to remove Cat's Claw in the endangered Semi-evergreen vine thicket (SEVT) ecosystem. Making up about 40ha of the 259ha in the Park, the SEVT areas



contain around two-thirds of all the native plant species recorded in the Park including threatened vine and orchid species.

Listed as vulnerable, the stream Clematis or Clematis fawcettii (Photo courtesy Martin Bennett)

SEVT also provides habitat for a range of bird and animal species including the endangered Black-breasted Button-quail (*Turnix melanogaster*).

According to the Dwyers Scrub Management Plan, SEVT once covered up to 20 percent of the Lockyer Valley. Largely cleared for grazing and crops, SEVT is protected in only two areas in the Lockyer Valley, Dwyers Scrub and Flagstone Creek Conservation Parks.

The Friends of Dwyers Scrub volunteers have now completed two years of weeding work and will make a concerted effort in 2018 to engage more volunteers. We need to decrease the average (and median and modal!) age of our volunteers as well as keep on top of the ever present regrowth.



FoDS members enjoy a pre- Christmas get together.

If you are interested in joining the Friends of Dwyers Scrub team for a few hours weeding a month, contact Paul Stevens on 0429 880 144 or Jim Kerr on 5462 6724.

Need help with your lantana or tree pear problem? LUCI has two splatter guns and a tree spear for member hire at *very* competitive rates. Contact Peter Darvall on 5462 6841 or Paul Stevens on 0429 880 144.

Of interest...

The value of understory vegetation can not be emphasized enough. Yet, it is the understory which seems to represent the ultimate challenge to landholders wanting to "tidy up" their block or achieve that parkland look. Beyond fire management activities, "thinning" or clearing the understory has major repercussions for a range of ecosystem functions and the wildlife, including insects, which inhabit it. For an indepth description of the value of understorey vegetation, read Land for Wildlife Queensland: Note V6 <https://www.lfwseq.org.au/wp-content/uploads/2016/11/The-Value-of-Understorey-Vegetation.pdf>

and remember...

biodiversity needs habitat managers!

Important number: Wildlife carers Kath and Steph 0410 334 661 (available 24/7)

Test your knowledge...

(Answers over page)

Do you know the common and/or scientific name for any of the following?



Photo Paul Stevens



Photo Diane Guthrie

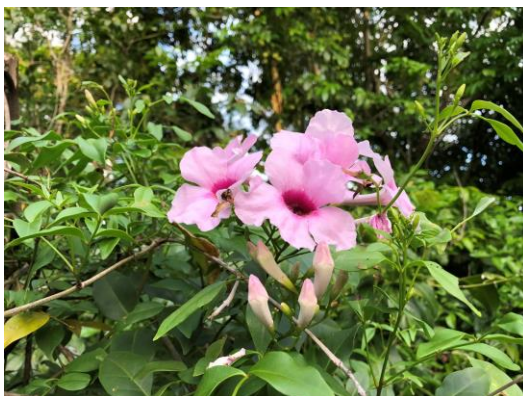


Photo Martin Bennett

Upcoming events ...

- ☛ *Citizen Science online for Queensland critters. Sunday 25th February from 2:00-4:00pm at Stockyard Creek Community Hall, Stockyard Creek Road.*

Are you interested in finding, using, contributing to information online for flora and fauna conservation? Ever wanted to generate a particular species distribution map or wondered what happens to your species records? Then come along and let LUCI member, Roxane Blackley, take you through the world of public, online data bases and mapping tools such as Queensland Globe, Biomaps, Wildnet, Australia's Virtual Herbarium, the list goes on. Bring a "plate" to share and tea and coffee will be provided. A gold coin donation towards hall costs is appreciated.

Contact Roxane on 0428 779 138 for further information

- ☛ *LUCI AGM/General Meeting, Saturday 17th March, 2:00-4:00pm, venue to be advised.*

Have your say in the election of LUCI office bearers for 2018 and share your ideas on current and future LUCI projects. Check out LUCI's website for an overview of current activities and feel free to use the "contact us" option to provide feedback/suggestions prior to the meeting.

www.lockyeruplandscatchmentsinc.wordpress.com

- ☛ *Autumn Walk, Sunday April 22nd, starting at 8:00am.*

Come and see how one LUCI member is implementing a vision of native habitat restoration on a section of his 450 acre property. Land for Wildlife Officer, Martin Bennett, will be on hand to share his knowledge and give advice. Bring morning tea to share and remember hat, sunscreen and water. *Ring Peter Darvall on 5462 6841 to book your place as the group will be limited to 20 people.*

Important number: Wildlife carers Kath and Steph
0410 334 661 (available 24/7)

If you would like to submit an item or photo for the newsletter or you have any suggestions and/or concerns that you would like LUCI to consider, send us an email...remember...

Stay connected, it's healthy!

If you do not want to be included on the email list for this newsletter please let us know at lucatchmentsinc@gmail.com.
Newsletter Editor Diane Guthrie 0413 333 681

Join like-minded others in caring for native habitats...

Become a LUCI member

Only \$5/year, children free.

How did you go on the test...

- ✓ Pacific Black Duck or *Anas superciliosa* (thanks Al Young)
- ✓ Female Mountain Katydid or *Acripeza reticulata* (thanks Gordon Claridge)
http://www.brisbaneinsects.com/brisbane_crickets/MountainKatydid.htm
- ✓ *Pandorea jasminoides* or Scrub wonga vine (thanks Martin Bennett)