CORANGAMITE LAKES LANDCARE NEWSLETTER

LISMORE LAND PROTECTION GROUP, WEERING-EURACK LANDCARE GROUP, LESLIE MANOR LANDCARE GROUP, CUNDARE DUVERNEY LANDCARE GROUP, WEERITE LANDCARE GROUP, MT ELEPHANT COMMUNITY MANAGEMENT

Lismore Land Protection Group
2020 Annual General Meeting

7.30pm Thursday 13th August at Lismore CFA Rooms

- *Annual Report*
- *Election of Office Bearers*
- *Acceptance of Bylaws*

Due to COVID 19 restrictions those attending in person will need to prior register and practice social distancing, or you can attend by "Zoom" videoconference. To register, receive details and conference code for Zoom contact Shari at llpgsharim@westnet.com.au

What's In Half A Litre Of Mount Emu Creek Water?

Like us, animals leave DNA everywhere they go, and it has just been used to undertake an inventory of vertebrate animals on the Mt Emu Creek. It's surprising how much DNA from miniscule bits of hair, skin, faeces, saliva or urine half a litre of water from a site can contain as many samples revealed 15 to 20 species.

With funding from the Victorian Government's Biodiversity on Ground Program and the help of Derrinallum P12 students and ten citizen scientists, 30 sites were sampled along Mt Emu Creek between Darlington and Skipton in October (2019). The water samples were analysed for DNA and results compared to a database containing DNA from thousands of vertebrate species that have had their DNA sequenced.

The sampling detected the DNA of over 50 individual species including 11 fish, 4 amphibian, 18 bird, 16 mammal and 1 reptile species, with some species on state or national threatened species lists (growling grass frog). As expected the DNA of cattle, sheep, foxes, rabbits, cats and possums was also detected and they are included in these counts. Of major concern was the presence of European Carp in one stretch of the creek.

Some of the species of interest that showed up are

- Platypus were found at 13 sites, mostly sites that had better fringing vegetation however they are known to be present at other sites (though not detected).
- Rakali (native water rat) were found at 7 sites, mostly concentrated downstream of south of Carlons Rd, with a population at Skipton.
- Growling Grass Frog, Southern Banjo Frog, Spotted Marsh frog, and Sudells frog at a very limited number of locations.
- Native fish such as a few isolated populations of Dwarf galaxis, however Flathead gudgeons were common right along the creek. There is significant evidence of a species of Pygmy perch in mid and upper reaches, either the common Southern Pygmy perch and/or possibly the critically endangered EPBC listed Yarra PP or Variegated PP (although unlikely as this latter one isn't known in this area).

Unfortunately no black fish were recorded, despite anecdotal records of their presence many years ago. This initial sampling has provided a snapshot of the species present and a rough idea of their abundance and distribution. A $20,000 Community Environment Grant from the Federal Government enabled another round of sampling during late Autumn when waterholes provided important refuge sites for species. The second round also allowed for a refined search for important species such as the Yarra Pygmy Perch with samples awaiting analysis.

Recent Storms Muddy The Waters

Our recent vertebrate sampling revealed a range of creatures along the Mount Emu Creek including extensive evidence of that quirk of evolution, the platypus, as well as the rakali (or the native water rat). This indicates the reasonably healthy state of the creek, as these species require clean clear water.

However the heavy rains in May saw a significant muddying of those waters in certain sections, with high levels of soil running off recently sown cropping paddocks, particularly from some raised bed paddocks on smaller tributaries leading to the Mt Emu Creek. That soil is now lost and took with it valuable nutrients and organic matter. Much of the soil will be deposited in the creek, silting it up and infilling important waterholes that provide important refuges for fish and other species such as the platypus.

Although such heavy rain events coinciding with bare or recently cultivated ground are infrequent, they do have significant impacts when they occur. While it is almost impossible to plan and cater for the most extreme rain events adherence to some simple practices can minimise the risk of soil loss and damage to waterways when they occur, particularly on raised bed paddocks that are designed to get water off the paddocks quickly. Don't crop right up to the waterway, no matter how small it is. Leaving vegetated buffer strips along waterways slows the flow of water thereby reducing its' energy and ability to transport any entrained soil particles, and much of the soil is deposited there. The waters were much clearer where there are reasonable buffer strips of vegetation remaining along the creek, its' tributaries or paddock drains.

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Understanding Our Groundwater Systems To Improve Farm Water Security And Protect RAMSAR Lakes

Under Round 3 of the Federal Government Smart Farms Grants the Cundare Duverney group was successful in obtaining $50,000 to undertake a groundwater study and farm water planning for their area. "We have been trying to get funding for this study for quite a few years" says Bill Charles. "Over the past 20 years our farm water supplies have become more problematic as runoff has declined the dams have become less reliable and some groundwater bores have dropped".

The group will partner with Federation University to undertake an analysis of local bores and to determine local and regional groundwater flows and connections. According to Peter Dahlhaus of Federation University "this is an important project for both the landholders and the RAMSAR listed Lake Corangamite. Surface inflows into the lake have declined significantly over recent years and long term monitoring of groundwater bores to the north shows a declining trend. We know there are groundwater connections to the lake but don't understand them very well. However the declining trend will likely impact groundwater inflows into the lake as well as farm water bores".

"Over the years we have seen the detrimental impact of sediments and salts blowing off the dry beds of Lake Corangamite and Lake Gnarpurt onto adjacent farmlands", said adjoining landholder Ross Alexander. "Trying to ensure that the Lakes retain inflows where possible is important for protecting both our farms and the important ecological functions the lakes provide. Understanding the surface and groundwater interactions with the lakes is critical to this, while also helping to secure water for our farming enterprises into the future".

Continuing Our Effort to Improve Stubble Management

Reducing the burning of stubbles helps to improve soil condition, sequester carbon and can potentially save you money. To continue the work to reduce stubble burning by incorporating stubbles into the soil with the addition of nutrients to promote microbial decomposition, the LLPG on behalf of the Corangamite Lakes Landcare area has received $44,760 under the Federal Government's Smart Farms Round 3 Program.

"Last year 13 landholders trialled the practice across 100 hectares and were all pretty happy with the result" said participant Scott Barr. "Following that, this year landholders have incorporated over 400 hectares of stubbles that would normally have been burnt".

Each tonne of stubble burnt releases about 400 kilograms of carbon to the atmosphere where it adds to greenhouse gases and contributes to global warming. That is carbon that could be improving your soil condition. While there is a cost associated with purchasing and applying fertiliser to assist the stubble decomposition, these nutrients remain in the soil pool for later reuse and their cost is about equal to the value of nutrients going up in smoke from burning. A win win!

How Efficiently Is Your Crop Nitrogen Used?

We value our local lakes for the opportunities they provide us with for swimming, sailing, water skiing and fishing. The lakes also contribute significantly to the local economy through attracting visitors to the area. However toxic blue green alga arising from excessive nutrient levels has seen the lakes closed to the public on a more frequent basis in recent years.

While nitrogen is essential to the productivity of cropsit is also a major contributing factor to the blue green alga in the lakes as monitoring shows significant amounts of nitrogen in runoff from crop paddocks going into our local waterways and lakes. Research shows that crop nitrogen use efficiency in the high rainfall zone is low with only about 30 to 35% of the nitrogen applied recovered in grain in the first year, which is considered low compared to other areas. So could you achieve the same yield with less nitrogen, save some money and help protect our environment?

To answer this, the Cundare Duverney Landcare Group with funding from the Federal Government National Landcare Smart Farms Program is trialling the practice of mid row banding. According to Professor James Hunt of La Trobe University, "mid row banding is putting in high rates of nitrogen at depth between every second crop row where it acts like a slow release fertiliser. The high rates restrict root development and nitrification in that zone, with the roots gradually growing towards the fertiliser and taking it up as needed. This can reduce losses due to volatilisation and denitrification, and by dissolution in runoff that goes into creeks and lakes.

However, mid row banding requires most or all of the fertiliser to be applied at sowing or soon after, reducing the need for later in-crop applications when soils are waterlogged and there is higher risk of nutrients running off into waterways. Although you do have to make an early decision on yield potential, if the season warrants and conditions are suitable a late broadcast application can be applied.

The group recently established four sites of about two hectares each at Duverney and Mingay, with 350 litres per hectare of UAN applied at about 50 – 70 mm depth with a "Fast N applicator". Thanks to Jeff and Chris Gardiner for their time and tractor to establish the sites.

This newsletter has been supported by the Victorian Governments Biodiversity on Ground Program and the Victorian Government Victorian Landcare Facilitator Program.