



# Seasonal Summary

SPRING 2013

## HONING COMMUNITY SKILLS FOR MACRO-INVERTEBRATE MONITORING OF LOCAL WATERWAYS

To aid the community in identification of aquatic life, the Community Stream Sampling Program ran a workshop on Wednesday 27 November in conjunction with the Environment Protection Authority (EPA). The workshop developed skills in higher-level identification of freshwater macro invertebrates.

Project Officer Greg Lundstrom opened the session with a presentation on the history of the Waterwatch program in the SA Murray-Darling Basin and explained the current focus of the monitoring program. Greg said stream sampling monitoring programs that include biological indicators can provide additional information on stream condition. The inclusion of macro invertebrate monitoring is a great way to verify the physical and chemical data analysis, and capture a snapshot in time indicating "what is able to live there".

Tracy Corbin, EPA Scientific Officer Water Quality, talked about the EPA approach to monitoring their scorecard system and provided tips for identification based on her extensive knowledge of the local area's aquatic fauna.

The "hands on" workshop included observing aquatic fauna through a high powered microscope and a field trip to Black Swamp where sampling techniques were discussed.



Tracy Corbin (EPA) conducting an information session

## ALLOW ME TO INTRODUCE MYSELF –

Simon Bryars, Project Officer

### Community Monitoring

My new role is a bit of a 'tree-change' as for much of the past 20 years I have been working in the marine/coastal areas of South Australia. However, I have previously worked on terrestrial insects, freshwater macro-invertebrates and frogs. In terms of formal qualifications, I have university degrees in zoology/botany and a PhD degree in marine biology. Nonetheless, I am a practical person and have always been most interested in applied science that will lead to better natural resource management. Previously I have worked for Adelaide University, PIRSA Fisheries, SARDI Aquatic Sciences and DEWNR. Most recently, I worked as a consultant marine biologist. Much of my research and management experience has been on environmental impacts. I also have good knowledge of land management practices and catchment processes with regard to how they impact on the marine environment. In addition, I have been involved in several community monitoring programs in the marine environment and I particularly enjoy Citizen Science.

I am an Adelaide Hills resident, having lived in the Bridgewater/Balhannah area for most of my life. Over the years, I have developed a strong affinity and involvement with my local natural environment and community. I am excited about the prospect of learning more about the natural environment of the Eastern Mount Lofty Ranges and working with passionate community volunteers. Hopefully, I will bring a different perspective to the role due to my broad background in biological research and natural resource management. However, I am keen to



continue the excellent monitoring programs and community networks that Greg Lundstrom has developed over many years. I look forward to meeting and working with you all soon.



Simon Bryars enjoying the natural environment

## THANK YOU - TO A WONDERFUL BUNCH OF VOLUNTEERS

As outgoing project officer, I would like to thank all those who have unselfishly given of their time to conduct monitoring and been part of the Community Stream Sampling Program and allied projects. It has been eight years since I started supporting groups and the journey has been a fulfilling one. I believe the program will continue to be an important part of data collection to better understand our local resources. I wish the program well under the guidance of Simon Bryars. I will remain with the board delivering its Atmosphere Program. In particular, I will be involved in the Regional Adaptation Plan for climate change leading to a more resilient landscape and community able to cope with the climate challenges ahead. I will not be lost to the community stream sampling as I intend monitoring water quality in the Currency Creek catchment in a voluntary capacity.

Regards

Greg Lundstrom

Senior Project Officer, Climate & Energy

Natural Resources South Australian Murray-Darling Basin

## EASTERN MOUNT LOFTY RANGES WATER ALLOCATION PLAN

A new water allocation plan (WAP) for the Eastern Mount Lofty Ranges (EMLR) was adopted by the Honorable Ian Hunter MLC, Minister for Sustainability, Environment and

Conservation on 17 December 2013 under the Natural Resources Management Act 2004.

The WAP will help to share limited water resources in the EMLR between all users and the environment, now and into the future. The plan manages new allocations, transfers and water affecting activities within sustainable limits, and minimises the risks of new use impacting on other users and the environment.

The WAP aims to:

- protect the resource for all water users and the environment, now and into the future
- provide greater certainty for water users.

Water resources in the EMLR were prescribed in 2005. Work began soon after to develop a WAP to guide the fair and sustainable management of water resources across the region. Extensive community and industry involvement occurred and was integral to the planning process.

You can visit the EMLR WAP website for more information:

[www.naturalresources.sa.gov.au/samurraydarlingbasin/water-allocation-plans/eastern-mount-lofty-ranges](http://www.naturalresources.sa.gov.au/samurraydarlingbasin/water-allocation-plans/eastern-mount-lofty-ranges)



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This monitoring program is supported by the South Australian Murray-Darling Basin Natural Resources Management Board, through funding from the Australian Government.

## For more information

Simon Bryars

*Community Monitoring Project Officer*

Natural Resources, South Australian Murray-Darling Basin  
Mount Barker Natural Resources Centre  
Upper Level, Cnr Mann & Walker Streets  
Mount Barker SA 5251 DX 51703

Mob: 0428 743 487

Tel: 08 8391 7520

Fax: 08 8391 7524

Simon.Bryars@sa.gov.au

<http://www.naturalresources.sa.gov.au/samurraydarlingbasin/home>



Natural Resources  
SA Murray-Darling Basin



Government  
of South Australia

## Spring Monitoring Participating Groups:

Angas Catchment Group  
 Angela & Paul Cullen  
 Bremer Barker Catchment Group  
 Calperum Station  
 Clayton Waterwatch Group  
 Cliff Farm  
 (Cherry & David Macklin)  
 Finnis Catchment Group  
 Friends of Parks Burra  
 Burra Landcare  
 Friends of Younghusband  
 Henschke Winery  
 "High Currency" property  
 Mannum Waterwatch (KESAB)  
 Mallee Minders Monarto Zoo  
 Marne, North Rhine & Saunders  
 Landcare Group  
 Milang Environment Centre  
 Murrundi - El Shaddai  
 Narnu Farm  
 Will and Dana Miles – Laratinga  
 Wetlands  
 Murrayong - Daryl & Helen Royans  
 Nairne Community Waterwatch  
 Northern Bremer Catchment Group  
 Riverview Deli - Ian Rowen  
 Signal Point Riverine Environment

## RAINFALL & TEMPERATURE

In South Australia, Spring 2013 produced a hot and dry season with a cool finish. An exceptionally warm start to the season resulted in the third warmest spring on record.

While the highest records were from the northern part of the state, the SA Murray-Darling Basin (SAMDB) experienced higher than average temperatures by about 1<sup>o</sup> C.

Regionally the SAMDB experienced low rainfall. Loxton and Meningie received average rainfall; Murray Bridge, Karoonda and Lameroo received 54% to 56% of average rainfall.

(Bureau of Meteorology website)  
 Available at:  
<http://www.bom.gov.au/climate/current/season/sa/summary.shtml#summary>

	Highest reading	Where	Lowest reading	Where	Comments
<b>Salinity (EC)</b>	94,800	Long Gully Creek	200	River Murray - Younghusband	Target: EC at Morgan at less than 800 us/cm for 95% of the time. Ephemeral streams and wetlands tend to be highly variable.
<b>pH</b>	9	Long Gully Creek	6.33	River Murray Wetland	A low reading is more acidic, 7 is neutral. One unit either side of 7 presents little environmental risk.
<b>Turbidity (NTU)</b>	200	Long Gully Creek	4	Currency Creek	Desirable that turbidity remains below 40 Nephelometric Turbidity Units (NTU).
<b>Nitrate (N in mg/l)</b>	2	Burra Creek Catchment	< 0.05	40 sites	Between 0.05 mg/L and 0.8 mg/L is usual for SA, however in the South East some groundwater can exceed 10.0 mg/L.
<b>Phosphate (P in mg/l)</b>	0.8	Angas River	< 0.05	27 sites	Between 0.05 mg/L and 0.4 mg/L of P is usual for SA. Between 0.05mg/L and 0.1 mg/L is considered good for the Adelaide Hills region.

Data from 67 sites was reported from across the region to the Community Stream Sampling Program over Spring 2013.

### Salinity (EC) (65 readings)

The lowest salinity reading was 200 us/cm (EC units) recorded at Younghusband on the River Murray upstream of Mannum (MUR-140). The highest EC recording of 94,800 us/cm was at Long Gully Creek (LGC-020). This is double what it was three months ago and higher than seawater salinity.

### Turbidity (NTU) (55 readings)

A turbidity reading (cloudiness of water) of 51 NTU (Nephelometric Turbidity Units) was again recorded on Long Gully Creek (LGC-120). River Murray sites recorded relatively high (between 20-60 NTU). 27 sites recorded at 10 or less than 10 NTU; with Currency Creek Lions Park recording 4 NTU.

### Phosphorus (P) (52 readings)

One site on the Angas River (ANG-545) recorded highest phosphate levels of 0.8mg/l. There were 28 sites that recorded 0.05 mg/l or lower. The majority of sites were within or less than a normal and expected range.

### Nitrogen (N) (52 readings)

Nitrogen on Spring Creek in the Burra catchment recorded at 2.0 mg/l. This is a surprising result for a site that measured near a spring fed headwater. Further investigation needed to identify the source of the nutrient. Thirty nine (39) sites recorded at 0.05 or lower indicating that most sites remain within an expected range of acceptability.

**pH** (54 readings) – Long Gully Creek recorded highly alkaline conditions at pH 9 (LGC-020). The calcium carbonate reading from the same site and past monitoring results indicates this is typical of this site (300 mg/l CaCO<sub>3</sub>). The remaining sites were within the 8-6.2 range.

### Macro-Invertebrates

Macro-invertebrate monitoring occurred at 28 sites with community groups and schools monitoring. Results indicated fair diversity at sites monitored (up to 16 at one site). Three sites recorded a Signal2 score of 5.

