



Delta Environmental Consulting

Special points of interest:

- The population at Delta has increased again, with the arrival of Oliver Cook
- The Coorong leak detection program is providing a model for Victorian water saving programs currently being implemented
- Adelaide Airport Limited's revegetation efforts at Patawalonga Creek have resulted in an increased *Melaleuca halmaturorum* canopy cover

From the desk with a view...

The New Year started with a rush, and here at Delta we spent the time alternating between doing fieldwork (when the weather was tolerable) and hiding in the office doing the paperwork sections of projects (when the January heat wave turned its fury on us).

The projects so far this year have been varied and interesting, ranging from monitoring groundwater bores to mapping the density and locations of populations of rare and endangered plant species. In between, there were Mining and Rehabilitation Plans (MARPs) to write, site assessments to undertake, coliform bacteria to chase and the development of a management plan for a remnant creek line in a Barossa Valley.



Tecticornia flabelliformis, mapped by Delta staff between St Kilda and Middle Beach

Faith Cook displayed her usual cheery and unflappable nature as the date of her second child's delivery neared — she was out doing fieldwork the day before young Oliver made his appearance in late February, and he attended his first community meeting when he was 11 days old.

His brother Daniel is very sturdy on his feet for an 18 month old, and has a knack for recognizing rare plants. Unfortunately, it turns out that he **really** likes one species, which he tries to eat whenever he finds it...

Well, that's all from me for this newsletter—
Best regards

Peri Coleman

Inside this issue:

From the desk with a view...	1
Stepping up...	1
Why test pH?	2
Product focus—EMS and waste audits	2
Leak detection	3
Taking a stand...	3
Keeping it in the family	4

Stepping up...

Constant professional improvement is essential to keep our staff thinking of fresh, innovative ideas. Since the last newsletter two staff have undertaken accredited business management training.

Faith Cook was awarded a Diploma of Business Management through David Foreman and Associates. The diploma had a strong focus on challenges specifically related to managing a family business, and recognizes Faith's ongoing commitment to best practice management.

Peri Coleman has undertaken a workshop in Good Governance, provided by South Australian business Governance Matters who specialize in providing training for directors as well as value-adding through the assessment of board effectiveness. The training was part of her commitment as a Board Member of the South Australian Coast Protection Board.



pH papers are available that span the entire pH range or narrower ranges

Why test pH?

When designing a monitoring program of any environmental system, it seems that pH is included as an almost forgone conclusion. Because of this, we are often asked why pH is such a frequently measured parameter, and what the data is used for.

pH is a measure hydrogen ion concentration, used to identify how acidic or basic a solution is. Pure water is said to be neutral, with a pH of approximately 7 at 25 °C. Solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are said to be basic or alkaline.

Delta prepares tightly structured monitoring regimes, aimed at achieving the client's objectives, while keeping costs low. pH is often included within these monitoring programs, to identify how other parameters interact with each other, whether particular test methods will be valid, or as a surrogate for a more difficult to measure parameter.

Some diverse examples of using pH data include;

- Determining the availability of minerals, or the mobility of heavy metals in soils.
- An unusually low pH in estuaries can indicate the presence of acid sulfate soils, or a recent anaerobic event.
- Testing the adequacy of chemical additions or the occupational hazard of a substance in an industrial environment.
- Identifying the impact of air pollution on rainwater potability.

To undertake your own pH testing of liquids, follow the instructions included with the attached test strips. If you are interested in testing other materials, instructions for making a test solution from a solid medium (e.g. soil) are provided in the Delta Management Manual, accessible via;

deltaenvironmental.com.au/management/Lab_methods/pH_soil.htm

*“A waste audit...
may identify
economic
opportunities
contained within
your waste
stream”*

EMS and waste audits

With the advent of carbon trading, a climate of economic instability and environmental accountability, two of our services are becoming increasingly more popular with industrial clients. These are the preparation of environmental management systems (EMS) and waste audits.

An EMS is a set of procedures that address the environmental aspect of your business, and outline the management of impacts now and into the future. An efficient EMS integrates environmental management into your daily operations, long term planning strategies and quality management systems. Implementation of an EMS may help you to rationalise resource use, streamline licence or permit applications and help meet operational, environmental and quality targets.

A Waste Audit is a specific activity, often undertaken to prepare for or maintain an EMS. It involves having an independent third party examine your waste disposal methods and records, along with a quantification of waste being produced at each site. Waste streams are identified, and ways to reduce waste generation documented.

Smaller industries often complete a waste audit as a one-off activity, before committing to an EMS. Large companies frequently have a program of whole, or part, company waste audits as part of their regular EMS compliance monitoring.

Undertaking a waste audit will assist in identifying how efficient your manufacturing processes are, how much waste disposal is costing you, and may identify economic opportunities contained within your waste stream.

The cost of undertaking either of these services varies significantly, depending on the size and complexity of the client's operation. An indicative range for waste audits of small to medium manufacturing businesses with one or two sites would be \$6,000 - \$16,000, while preparation of EMS documentation ranges from \$22,000 - \$55,000.



Waste audits may include physical measurement and/or review of records

For the month of June, Delta is offering Family Business Australia members and all our existing clients 15% off our standard hourly rates to undertake a waste audit or prepare an EMS.

Leak detection

Hopes are high for huge water savings in the state's Upper South East, thanks to a trial of a new leak detection system, initiated by local landholders, the Coorong Local Action Plan (LAP) and Delta staff member, Faith Cook.

Between five and twenty per cent of River Murray water delivered to Coorong District farms is lost through leaky pipes, costing farmers thousands of dollars in excess water charges each year.

Stock and domestic water for the region is supplied from the River Murray, via the Taillem Bend to Keith pipeline. Faith assisted the Coorong LAP obtain \$186,000 in Commonwealth grants, to design and install a range of systems though out the district. Landholders are keeping detailed logs of water use and leak repairs over the project duration.

The system uses off-the-shelf components and includes solar powered batteries for the radio telemetry components so that they can be easily repaired and installed in areas where there is no reticulated electricity or mobile telecommunications.

Delta employees (Faith and Matthew Cook), Laurie McGing (SA Water) and Derek Wilde (Wiltec Engineering), have played a crucial role in drawing up specifications, designing the system, organising field days and installation of the systems on participating properties.

Since the commencement of this project, similar projects have been initiated elsewhere, using specifications and data obtained through the Coorong system, including a system currently being fine-tuned in rural Victoria, and another in being discussed in South-West Queensland.



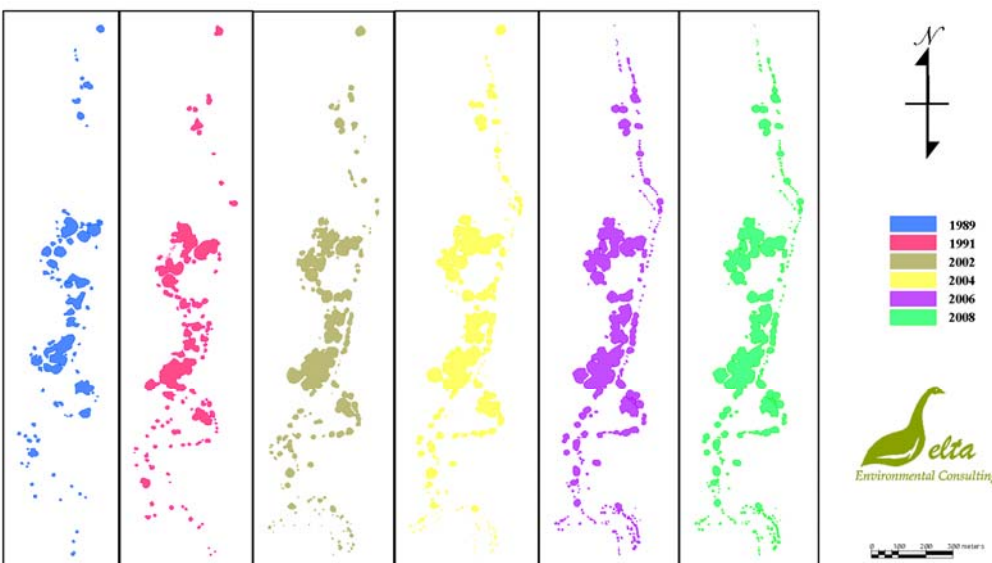
Telemetry for the leak detection project

Taking a stand...

Landholdings at Adelaide Airport include a short strip of the historic Patawalonga Creek. The creek line hosts a sizable stand of Swamp Paperbark (*Melaleuca halmaturorum*). This stand was listed by the National Trust in 2006 as the last significant stand of this species remaining in the Western Adelaide Plains.

Since taking responsibility for the Airport in 1998, Adelaide Airport Limited has invested considerable resources into restoring this section of Patawalonga Creek. Recently, they contracted Delta Environmental Consulting to design and undertake a monitoring program at the site, to identify changes in vegetation type and cover.

Changes in Swamp Paperbark cover were assessed using aerial photography, to produce digital maps of the canopy between 1989 and 2008. Analysis of changes in *M. halmaturorum* cover highlighted the results of earlier management methods, including dredging of the creek line, as well as positive impacts from more recent management efforts. Recent management has included woody weed control, rubbish removal, ongoing revegetation, and removing silt mounds. Overall, there has been a significant increase in Swamp Paperbark canopy, as shown in the image below.



Maps (above) of *Melaleuca* coverage were overlaid on each other to highlight changes

“Overall, there has been a significant increase in Swamp Paperbark canopy...”



Patawalonga Creek in 1906



Delta Environmental Consulting

12 Beach Road
ST KILDA SA 5110
AUSTRALIA

Phone: 08 8280 5910
Fax: 08 8280 5179
E-mail: consulting@deltaenvironmental.com.au
Web: www.deltaenvironmental.com.au

Wet? Salty? Arid? Muddy? Our element...

Delta Environmental Consulting is an independent South Australian consulting business. We offer services including sampling, monitoring and discharge monitoring programmes for waterways, tidal areas, saline lakes and wetlands, assessment of revegetation projects, flora and fauna biodiversity surveys of terrestrial, shallow aquatic (fresh, brackish and haline) and stygian habitats, site environmental surveys, evaporation basin modelling, GIS habitat change assessments, land use histories, enterprise carbon footprinting, compliance audits and research programs.

Delta Environmental Consulting has a policy of continuous improvement in the areas of :

- Providing a quality product to our clients,
- Providing ongoing training and development opportunities for our consultants (we have InSkill SA certification),
- Maintaining high standards in the areas of health, safety and the environment both within Delta and while working with our clients.



The company's quality assurance management system has been third party certified to the international Q-base standard by SAI Global. A copy of the scope of certification is available on request.



Water Industry
Alliance

Delta is proud to be associated with the Water Industry Alliance

Keeping it in the family...

In tight economic times, buying locally made and owned is an excellent way of maintaining strong communities. Purchasing from a local family business ensures that the money you spend stays in the local economy.

Delta is proud of its South Australian family roots, and regularly teams with other South Australian family businesses to provide clients with a wide range of quality services or materials.

Gabriel and Helen Xiourouppa of ASIS Scientific provide Delta, and many of our clients, with a range of high quality field and laboratory equipment and supplies (including the pH strips attached to this newsletter).

Peter and Jo Leonard of Lencom Antennas make the radio masts used to communicate with Delta's remote monitoring sites, including the Coorong leak detection project.

Greg and Scott Hicks (Adam Internet) have provided a range of flexible internet services to meet Delta's every expanding technology requirement for more than 15 years.

Many of our other suppliers are also owner-operated (if not family operated) businesses. These include Measurement Engineering Australia, Chalk Hill nurseries and Flowers Everywhere.

On the other side of the ledger, Delta's family business clients include Australian Plastic Recyclers, COOE (Caring for our Environment), Coopers Brewery, Mulgundawa Salt and Jeffries Garden Soils.



Peri Coleman talking about saltmarshes for Environment Week.