

Keeping it Green

August 2009

AUSTRALIAN GOLF ENVIRONMENTAL INITIATIVE NEWSLETTER

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Keeping it Green Editorial Enquiries

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AGCSA LAUNCHES ONLINE WATER MANAGEMENT REVIEW



In 2007, the Australian Golf Course Superintendents' Association (AGCSA), in conjunction with the Australian Golf Industry Council (AGIC), conducted research into how the current drought and subsequent water restrictions have impacted on Australian golf courses.

The results of the survey indicated that golf courses affected are currently pursuing a number of short-term practices to minimise water use with only 40 per cent of Australian golf courses having a formal water management plan in place. In light of such findings, the AGCSA has embarked on an ambitious scheme to develop an interactive online water management review service.

The AGCSA's *Online Water Management Review*, which was officially launched in July 2009 at the 25th Australian Turfgrass Conference and Trade Exhibition held in Hobart, is aimed at providing superintendents and turf managers with an easy to use template which comprises a detailed online questionnaire, which when completed will generate a comprehensive report outlining your club's current water status. The management review will also identify and outline where efficiencies can be made.

The Australian golf industry recognises golf courses need to aim for best practice in managing our water resources as it plays such a vital role when it comes to the production of high quality playing surfaces. With this in mind the AGCSA is striving to have 400 clubs over the next two years complete the *Online Water Management Review*. As part of the Horticulture Australia funded project TU 08013, the *Online Water Management Review* can be accessed directly through the AGCSA's Water Initiative web portal water.agcsa.com.au or by clicking the following link <http://water.agcsa.com.au/water-management-review>

To help golf course superintendents and their respective clubs complete the *Online Water Management Review* assistance will also be provided via AGCSA representatives John Geary and Daryl Sellar.

PRINCIPAL PARTNERS

Bayer Environmental Science



The AGCSA's **Online Water Management Review** aims to identify the works and practices that will improve irrigation management and water use efficiency at your golf course. The purpose of the water management review is to:

- Assess current water management practices;
- Secure future water availability through sustainable practices;
- Demonstrate environmental responsibility and stewardship;
- Comply with regulations;
- Communicate to club members and community regarding the club's best management practices with respect to water use and conservation.

- Be an integral part of the business strategy; and
- Identify additional water sources.

Once the questionnaire is completed a comprehensive report is generated which outlines and makes recommendations on your golf club's;

- Golf course water management goals;
- Golf course site information;
- Evaluate and identify efficiency opportunities; and
- Provide action and implementation plans.

For more information regarding the AGCSA's **Online Water Management Review**, please contact John Geary at the AGCSA office on (03) 9548 8600 or via email jgeary@agcsa.com.au



VICTORIAN SMART WATER FUND NEWSLETTER

Please click on Victorian Smart Water Fund to access the July 2009 newsletter. The newsletter contains a number of interesting articles such as:

- CFA and MFB's recycled water projects;
- A new greywater information website;
- Two Smart Water Fund projects from regional Victoria;

- Water saving in aquatic and recreational facilities;
- Sustainability Victoria's new ResourceSmart website;
- A new soil recycling facility in Gippsland;
- A new groundwater map of Melbourne;
- Water saving initiatives at Nestle's Pakenham site; and
- Smart Water Fund Round 7 coming soon.

VIC GOLF CLUB TESTS AQUIFER STORAGE AND RECOVERY

The following article has been sourced from the July Victorian Smart Water Fund newsletter and outlines stormwater aquifer storage and recovery trial work being conducted at Kingswood Golf Club.

A new capture and storage project will become a working demonstration of sustainable practice for Victoria's golfing industry and other open space managers.

Kingswood Golf Club, located in Dingley, is preparing for trials of a catchment and storage method called aquifer storage and recovery (ASR), which aims to increase the club's capacity to store stormwater needed for turf irrigation. The Kingswood project uses learnings from an earlier ASR project at Rosedale Golf Club in nearby Aspendale. "Victoria's drought has meant that many sporting and recreation clubs are now reliant on groundwater, stormwater or treated effluent for irrigation," said project manager Norm Seaton.

"Kingswood's current water supply is no longer adequate to maintain the golf course in excellent condition during summer, which is why we began investigating solutions for additional water storage," Mr Seaton said.

"We estimate that an ASR system could allow Kingswood to store up to 25 megalitres of water a year, which could increase our water supply for irrigation by almost 50 per cent." "ASR offers an alternative to building additional dams

that are expensive and land-consuming." "We will further test ASR in upcoming trials, that will involve a season of injecting 10 to 20 megalitres of water into a fractured rock aquifer, for recovery and use in summer."

"These trials will help determine the rate at which we can inject, and the amount of water we can store. If the project proves feasible, we aim to establish a licensed operating system by mid-2011." The trials follow promising results from initial tests that involved a single injection and extraction of 1.9 megalitres of water. "The first stage reinforced our expectations that ASR is a viable solution for Kingswood," Mr Seaton said.

"We hope the trial will encourage other Victorian clubs to consider the ASR option for additional storage and stormwater."

Kingswood's project received a grant in round 6 of the Smart Water Fund this year.

An article on the ASR project at Kingswood Golf Club will be featured in the September-October 2009 issue of Australian Turfgrass Management journal.



SUSTAINABLE GOLF



Golf courses in Australia have never been better conditioned and presented than they have been over the past 5 – 10 years. The high quality of the playing surfaces and the golf course in general has created a demand and expectation that the golf course will always be in 'perfect condition'.

At the same time, climate change, weather extremes, the global economy and environmental pressures are creating new challenges for clubs to maintain these standards. It is a time when the term sustainability has never been more apt. With the pressures of diminishing resources and in particular water, more extreme weather conditions and tightening budgets, golf clubs are having to assess what is sustainable. Sustainability is defined as "*capable of being maintained at a steady level without exhausting natural resources or causing severe ecological damage*". This is a very appropriate definition of managing a golf course in Australia today.

The challenge of maintaining a golf club that is economically, socially and environmentally sustainable is an international issue. To discuss these issues the AGCSA has invited Steve Isaac, the Director - Golf Course Management of The R&A to participate in a series of seminars on sustainable golf.

Steve spent 18 years with the Sports Turf Research Institute, which included acting as the consultant agronomist at three Open Championships, before taking up a full-time role at The R&A in 2003. Steve is responsible for helping to develop and enact the R&A Golf Course Committee's sustainability programme. This is serviced by the best practice website, www.bestcourseforgolf.org, and involves extensive travel, mainly in Europe but also to Africa, Asia, New Zealand, South America and the USA. Steve also provides secretarial support for the European Golf Association Golf Course Committee, whose remit is to monitor developments in EU legislation which may affect golf courses in Europe and to build relationships with appropriate contacts in Brussels.

Steve will be with us in September 2009 to share The R&A's philosophy of sustainable golf which includes the key areas of playing performance, environmental stewardship, economic performance and social responsibility – the four parameters in The R&A's definition of the sustainable golf course.

The programme will cover;

- The R&A's role in SE Asia, Australia and New Zealand.
- Sustainable golf and the R&A.
- Golf course benchmarking as a management tool.

The seminars will have wide appeal and superintendents, general managers and club committee members are encouraged to attend.

The proposed dates are as follows:

- Melbourne** – Tuesday 8th September
- Sydney** – Thursday 10th September
- Brisbane** – Monday 14th September
- Adelaide** – Thursday 17th September
- Perth** – Tuesday 22nd September



'DROPLETS' NEWSLETTER

For the past three years, Professor Mike Young, Research Chair of Water Economics and Management, School of Earth and Environmental Sciences at the University of Adelaide, and Mr. Jim McColl, Research Fellow, Policy and Economic Research Unit, CSIRO Land and Water, have been penning their thoughts on alternative ways our water sources could be managed.

To access their latest essay please click on [Securing water: What is the best and fairest way to secure water for the environment?](#)

Earlier topics, which can be downloaded from www.myoung.net.au include:

- Stormwater: Expensive nuisance or an opportunity?
- Thinking like an accountant about rivers and aquifers
- Undermining water – Accounting for flow reducing activities
- Governance of large water bodies
- MDB Authority: Keeping the devil out of the detail
- Urban water pricing: How might an urban water trading scheme work?
- Irrigation Water: Use it or lose it because you can't save it!
- The unmentionable option: Is there a place for an across-the-board purchase?
- New water for old: Speeding up the reform process
- Pricing your water: Is there a smart way to do it?
- Cullenisms: Thinking about water
- A sustainable cap: What might it look like?
- Grounding connectivity: Do rivers have aquifer rights?
- Yucky Business: Paying for what we put down the drain
- Shepherding Water: Unregulated water allocation and management
- More from less: When should river systems be made smaller and managed differently?
- Water-security: Should urban water use, like rural water use, be capped?

TURFGRASS ENVIRONMENTAL RISK MANAGEMENT AND THE CONCEPT OF 'DE-RISKING'

by Terry Muir, Environmental Business Solutions

Turfgrass management professionals operate in an environment fraught with environmental risk. It goes with the territory and ignoring the element of environmental risk when turf management strategies are being framed is unimaginable.

Environmental risk management is simply a process that involves making a distinction between acceptable risk and unacceptable risk. A turfgrass manager must decide for themselves what is acceptable and what is not.

Even though environmental risk management costs money, it can help avoid even bigger costs that arise from poor risk management. By strategically managing environmental risk a facility will be able to identify areas where they "must try harder," and areas where they can afford to "maintain" or "even slow" their efforts.

Only by analysing and documenting the real state of their environment can you meaningfully find ways to improve.

Managing risk effectively

Environmental risk is uncertain and that's why it is important to take action to reduce exposure by adopting three simple steps:

- Assess your risks and vulnerabilities;
- Create prevention, contingency and response plans; and
- Choose financing options that reduce your risk and protect your key business assets.

Let's look at a practical example to illustrate this straightforward approach.

Example: Managing the risk of water pollution from a chemical spill during mixing

Start by assessing the potential impact on you and your organisation. Consider the likelihood of a spill and the impact of the spill on the environment. Also consider the potential costs of remediation and possible prosecution. How vulnerable are you?

Plan to prevent or mitigate significant losses. Planning enables you to manage your risk effectively. As a result of planning, you'll identify some steps you can take to prevent a spill and limit its impact, should one occur. Some steps are obvious: ensure mixing occurs in a contained area; train all staff; have a standard operating procedure for chemical mixing; have a standard operating procedure for spill management; have a spill kit.

Determine how to spread your risk. Instead of automatically spending money on spill kits "to fix" the problem it is best to identify options for prudent coverage and significant savings. For example, is it more important that the staff receive training in chemical mixing than it is to have a spill kit in your circumstances? Is it more important to ensure chemical mixing is undertaken in controlled circumstances therefore the development and implementation of standard operating procedures for mixing may be more important initially than developing a spill response procedure.

You must think strategically. If, for example, in the last 12 months you mixed chemicals on 100 occasions in a contained mixing area and had two spill incidents – one

RISK TREATMENT OPTIONS

AR	Avoid the risk: Decide not to proceed with the activity or adopt alternative process or choose a more suitable location.
MR	Mitigate risk: introduce new technology or change practices
RL	Reduce the likelihood: training or planning or supervision or monitoring or preventative maintenance to reduce the probability of an incident occurring or review work practices.
RC	Reduce the consequences: minimise physical exposure to risk sources by relocating an activity or improving contingency and emergency response preparedness or buffer zones or spill controls
RR	Retain the risk: Administrative responses such as development of standard operating procedures or basic training or plans to deal with outcomes if risk realised

Table 1: Risk treatment options for golf courses

Source: Standards Australia HB203:2000

of tank overfilling, and one incident in which the chemical container was knocked over and a small amount of product spilt because the lid was not replaced – would the better risk management option here be to spend money on a spill kit? Perhaps not. Other more appropriate risk management strategies may include:-

- Purchase a shut off hose fitting to reduce the risk of overfilling;
- Develop Standard Operating Procedures for chemical mixing to ensure lids are replaced on drums after use;
- Conduct a chemical filling demonstration exercise for staff; and
- Regularly monitor staff operations during filling.

In 100 chemical filling events there were two circumstances in which a kit was required. The spills were small and manageable. Perhaps in this instance the capital expense of a spill kit would not be the preferred immediate option and attention to human behaviours might be the appropriate initial risk response strategy. This would enable the costs of spill kits to be appropriately budgeted for.

As an environmental risk manager it is important you recognise that a spill event represents just one element of your club's interaction with the environment. You also have air, noise, water, waste, soil, flora, fauna, groundwater, dangerous and hazardous goods, staff and contractor issues that require management.

De-risking

The objective of environmental risk management is to provide a structured and systematic method for determining the magnitude of the risk. From this point, risks can be evaluated and prioritised to determine control treatments.

One of the biggest challenges facing a turf manager is unacceptable environmental risk. Unacceptable environmental risk is undertaking an activity that presents a significant risk of harm to the environment without any

controls. When you take time to manage environmental risk you effectively de-risk by reducing your vulnerability and mitigate potential costs should disaster strike.

What the turf manager must look for through risk assessment is work activity whose “best” outcome will result in many benefits while the “worst” outcome will still allow adequate protection of the environment. Generally, there are several courses of action open to the manager at any one time and a structured analysis of the different best/worst possibilities will enable you to balance the risks and chart the optimum course. Based on that kind of analysis, you can then proceed with the work knowing that your efforts can be concentrated on achieving the best possible results.

Standards Australia's HB 203 (2000) identifies a number of risk treatment options designed to minimise the impact on the environment. Some of those options relevant to golf courses are shown in Table 1 above.

Conclusion

A turf manager can measure risk management performance through indicators in three key areas:

- Structure - are the right elements in place to be able to identify and manage environmental risk?
- Process - are the right things being done to protect the environment?
- Outcome - is the result as intended and can we improve?

The risk management process can be implemented in stages, beginning with areas of operation that historically produce the greatest risks to the environment. Of importance is not how the risk management process is undertaken, but that it is undertaken and is systematically continued.

Environmental risk management starts with the development of a program of environmental management. Through the program you will be able to systematically identify, document and address and manage environmental risk.

What society demands of a turf manager in the 21st Century is good environmental governance to ensure both current and future risks that affect the environment are identified and managed and in some cases, the risk turned into an opportunity.

Managers that successfully integrate risk concerns into their organisational structures and daily operations will protect and enhance their ability to deliver better environmental outcomes. Start the process, commit to an EMP, and de-risk.

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AGEF SUPPORTER PACKAGES

The Australian Golf Environment Foundation (AGEF) has a range of supporter packages to suit corporate, club and individuals that may wish to contribute to fostering future research and knowledge into golf and the environment. For more information on how to become involved with the AGEF, contact John Geary at the AGCSA on (03) 9548 8600 or email jgeary@agcsa.com.au

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