Keeping it Green

October 2011

AUSTRALIAN GOLF ENVIRONMENTAL INITIATIVE NEWSLETTER

Keeping it Green Editorial Enquiries

If you have any editorial or photos you would like to submit for publication in Keeping it Green, please contact AGCSA environmental agronomist John Geary jgeary@agcsa.com.au or phone (03) 9548 8600

Produced by the AGCSA

Suite 1, Monash Corporate Centre
752 Blackburn Road, Clayton, Vic, 3168
Phone: (03) 9548 8600
Fax: (03) 9548 8622
www.agcsa.com.au

The biodiversity and carbon benefit of urban golf courses

Spring Valley Golf Course

The University of Melbourne is commencing a major scientific study into the biodiversity and carbon benefits that golf course's provide within our cities. What is the link between biodiversity and carbon you may well ask, well, the intention is to measure these two important 'ecosystem services' that golf course's provide using the same research framework, i.e. at the same time and in the same places. It is widely recognised that large green spaces, such as a golf course, make a big difference to the retention of biodiversity within our cities. They provide habitat for birds, mammals, insects, reptiles and amphibians to inhabit and forage within. Golf courses also often contain some of the most important patches of remnant vegetation within our city landscapes. Their role in the urban carbon balance is less well understood and the amount of C stored within golf courses has not previously been researched.

After a golf course is landscaped, it takes several decades for the vegetation to establish and surface litter to accumulate providing a more natural

ecosystem for faunal biodiversity to find refuge. As such, we expect there may well be a greater biodiversity benefit in older, more established golf courses. Concurrently, as the vegetation grows and establishes there will be steady increase in vegetation biomass and therefore above-ground carbon and potentially an even bigger increase in below-ground soil carbon, because the cultivation and maintenance of a productive turf grass sward can support a big increase in soil organic carbon. So, this project aims to investigate within a given climate and soil type (Melbourne's sand belt) the strength of the link between:

- golf course age,
- golf course biodiversity value, and
- golf course carbon sequestration status.

Golf courses provide an excellent means to investigate the ecosystem services provided by all large urban green spaces because they keep excellent records of any changes in landscaping and management practice. In addition, the AGCSA provides a unifying industry body that makes communication a great deal easier. Add to this the fact that golf clubs really do care about their role in environmental stewardship and the reason for working within the golf course community becomes instantly apparent. Another reason why golf courses provide a really good opportunity to investigate ecosystem services and ecological processes that occur in all urban green spaces, is that they contain the full spectrum of green space types: from intensively managed and manicured greens and mown fairways, to less managed, or passively managed rough and woody vegetation patches. This provides an opportunity for this project to investigate the relationship between:

1) green space type (i.e. management intensity),
2) soil biodiversity (bacteria, fungal and insect), and
3) soil carbon status.

This has real relevance to how we think about soil health in our urban green spaces and the influence of management practices. Linking soil (and surface litter) biodiversity to soil carbon status could provide some real indicators as to the value of the diverse landscape elements within a golf course, or any large urban green space.

This project title is 'Ecosystem services from large urban green spaces - the biodiversity and carbon benefit of urban golf courses' and this project requires a truly multi-disciplinary approach and just as importantly the collaboration and assistance of Melbourne's golfing community. The University of Melbourne has put together a research team including: Dr Stephen Livesley (soil-plant ecologist), Dr. Nick Williams (urban plant ecologist), Dr Caragh Threlfall (urban ecologist), Prof. Nigel Stork (entomologist) and Dr Amy Hahs (GIS ecologist) to work in close collaboration with the Australian Golf Course Superintendents Association (AGCSA) and a network of golf courses throughout the sand-belt region of southeast Melbourne. This network will cover a range of golf course ages, from less than 20 years old to more than 100 years in age. The research is funded by the Australian Golf Course Superintendents Association (AGCSA) and the Australian Research Centre for Urban Ecology (ARCUE), as well as the federal government, through an industry linkage award from the Australian Research Council (ARC). In the coming months the on-site research will commence through vegetation surveys and in the New Year the soil and biodiversity elements will be surveyed and will include PhD students and visiting international scientists. The project will run for three years in total and we hope to bring you regular updates on the successes and research findings as we go.

Woodlands Golf Club: Remnant vegetation

Cape Kidnappers Golf Course wins 2011 NZGCSA Environment Award

Earlier this year at the New Zealand Turf Conference held in Hamilton, Cape Kidnappers Golf Course was judged the recipient of the inaugural Turf NZGCSA Environment Award.
Sponsored by PGG Wrightson, the award has been established by the NZ Golf Course Superintendents Association to create a vehicle which would encourage golf courses in their environmental management efforts.
In the following article Cape Kidnappers Golf Course Superintendent Steve Marsden outlines the ongoing environmental management programs undertaken at Cape Kidnappers.

Cape Kidnappers gained its name in 1769 after local Maori attempted to abduct the servant of a member of Captain Cook's crew aboard HMS Endeavour. Today, it's a more peaceful environment, home to the world's largest, most accessible mainland Gannet colony.

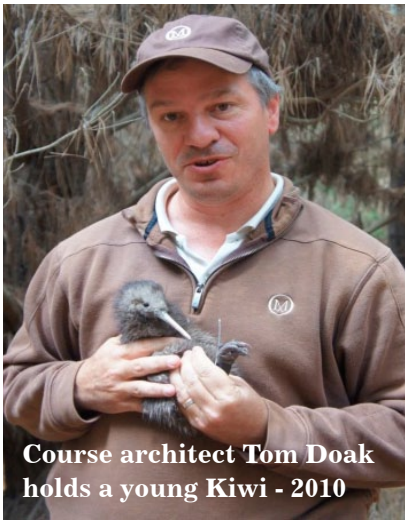
In 1999 Julian Robertson purchased the 5,000 acre sheep station known as "Cape Kidnappers Station". His vision was to build a world class golf course and lodge on an iconic property for all to enjoy, whilst retaining the natural character of the land. Today, the property features a world class golf course, recently ranked number 33 in Golf Magazine's list of the top 100 courses in the world. The Farm at Cape Kidnappers, a 5-Star luxury lodge, showcases a cluster of luxury lodge buildings suggestive of a working farm. Each room takes on a character of its own while harking back to the rural feeling of the New Zealand sheep station and surrounding wine country.

The 20,000 Gannets at the cape are members of the Booby family, with distinctive black eye markings and a pale gold crown. Visitors to the colony will see adults and young nesting in serried rows carrying out their daily routine. In the air above, these amazing birds (with their six foot wing span) swoop and dive as they bring back fish to enjoy on the coast. On the ground, just a few feet away, the pairs preen and perform the dance of the Gannets' recognition ritual. The birds can be observed from September through early May. In September, they return and build their nests, preparing for the arrival of the chicks during December and January. The chicks are then fattened up and prepared for their departing flight in late April / early May, when they embark on their annual ritual to warmer climates.

Golf course architect Tom Doak made his first site visit in late 2001. Tom made four visits prior to construction, and another three during the shaping stages. In all, around 150,000m^3 of earth was shifted, which reflects Tom Doak's sensitivity to the landscape, and really showcases what a spectacular piece of land he had to work with at Cape Kidnappers.

The course debuted in 2004 to rave reviews, and along with its sister course, Kauri Cliffs, have made a significant impact on the New Zealand golfing landscape. This impact was recognised internationally by Golf Magazine's world top 100 panel rating Cape Kidnappers at number 27 in its inaugural year.

In 2001, adjoining land owner Andy Lowe proposed the idea of a wildlife sanctuary on the Cape Kidnappers peninsula to re-establish the Cape with many of its former inhabitants, along with a few new ones. In early 2007, a 10km predator proof fence was erected across the boundaries of 3 properties encompassing 6500 acres. The intent of this fence is to keep out predators of New Zealand's wildlife, which include stoats, cats, weasels, ferrets, possums and rats. A full time staff of 3 manage the preserve along with over 300 local community volunteers, who assist with tasks such as nest box building and installation, monitoring bird activity, planting, weed control and much more.


Course architect Tom Doak holds a young Kiwi - 2010

The initiative of the New Zealand Golf Course Superintendents Association to recognise golf courses with the newly formed 'NZGCSA Environment Award' supported by PGG Wrightson Turf is long over due. The turf industry, specific to golf, can utilise this type of award to better promote the many positive things Superintendents are carrying out across the country.

Whether it is Audubon International or EPar, there are now templates that help turf managers document and record their efforts in this area. These programs can be a great way to educate members, decision makers within the club, and community groups. During my tenure at Lakelands Golf Club, we organised a tree planting day to coincide with National Tree Day. The project had wonderful support from the members, allowing us to discuss the course in general, work we were doing, and the reasons behind some of our projects (including coring greens!). We organised a BBQ, activities for the kids...its now been going for 10 years.

As a Golf Course Manager it's about more than just managing the golf course, it's about the management of the entire property. How do we stack up environmentally? What can we do to ensure that our maintenance operation has a positive effect on the environment? Is it sustainable? How do we get the balance right between providing high quality playing surfaces and ensuring the environment is not compromised? With sound management practices, a

golf course can make economic sense while protecting, and in many cases, restoring the environment.

In October 2010, Cape Kidnappers Golf Course became the first golf course in New Zealand to achieve designation as a Certified Audubon Cooperative Sanctuary through the Audubon Cooperative Sanctuary Program for Golf Courses. To reach certification, a course must demonstrate that they are maintaining a high degree of environmental quality in a number of areas. These categories include: Environmental Planning, Wildlife & Habitat Management, Outreach and Education, Chemical Use Reduction and Safety, Water Conservation, and Water Quality Management.

As part of the program, the superintendent fills in a site assessment, which helps summarise the key features of the golf course. This requires gathering information such as grass types, heights of cut, naturalised areas, vegetation make up/types of trees, understory planting, lakes/wetlands, percentage of naturalised lake margins, wildlife and plant inventory.

We carried out a full plant survey to understand the native plant types across the golf course, and also identify the noxious/invasive plants we have and what was required to gain control of them. Many years of farming had voided the gullies of significant vegetation, and we wanted to enhance existing stands and re introduce the native vegetation lost. We were not looking to establish our own personal landscape pallet, but restore what was once here. Having Tom Doak on the property last year was a great benefit. We discussed bringing back the vegetation into areas out of play, where clearing had taken place to get the golf holes built. This includes bringing planting into the back of selected bunker complexes to create a more natural look to these areas.

Recycling is something most of us are more conscious of today; this was an area where we believed more could be done. Not only to recycle the likes of plastics, cans, bottles, paper, tyres, batteries, waste oils, empty chemical containers, and scrap metal...but also looking at utilising the resources that we have on the property. A log splitter was built in our workshop to allow fallen trees to be cut up and split. This is now utilized in conjunction with our lodge, where historically firewood was brought in from off site. Seed collections are being carried out from various native plants and propagated by a local native nursery. Cows are utilised to graze the tall grass around the course, which in turn has helped provide control over the Porina caterpillar. Temporary electric fencing is set up to keep them in and the fencing is moved around the course as each area is chewed out. A set of chain harrows soon breaks up and spreads the cow pats, a shitty job, but the benefits are that you're first on the scene to collect the many stray golf balls that were once lost! The guests like the cattle out on the course, its something that they don't usually see. For us there is always a bit of apprehension when they are grazing as the odd break out is guaranteed!


Cows Near #10 Tees

One of the more enjoyable parts of our involvement with the Audubon program is having the school groups in to assist with projects. Our outreach and education programs have brought in several children to help with re-vegetation work, restoring degraded areas, and enhancing them with native plants. With the golf course sitting inside a wildlife preserve, we have the added benefit of hosting some of New Zealand's endangered wildlife on the property. Recently, we had a release of the Brown Teal duck, a nationally endangered species. Information was distributed to schools for the kids to learn about the Brown Teal. Our staff built nesting boxes,


Pateke Being Released

then dismantled them and took them into the school were the kids assembled them and brought them out on their visit to Cape Kidnappers. They installed the nest boxes and then each released a Brown Teal that had been flown up from Christchurch earlier in the day. The delight on the kids' faces was very evident, and as one parent said "it's an experience that will stay with them a lifetime."

Of the many birds brought to the property, the most popular are the young Kiwi. They are fitted with a transmitter, attached upon their arrival, and set to a unique frequency to allow monitoring of that particular bird. The transmitter feeds back information through an aerial antenna in a series of beeps, allowing them to be tracked in the wild. It's important to monitor the health and well being of the Kiwi, and we recently had kids visit to track Kiwi with the preserve staff. Upon finding the Kiwi, they are weighed and their


Te Mata School Year 4

overall condition checked. In environments where pests, such as stoats and cats, are not controlled, 94% of chicks will die before breeding. This statistic shows the importance of environments like Cape Kidnappers, which have become a safe haven. The success rate of the Kiwi here has prompted other land owners to send the young Kiwi chicks from their property to ours. Some come as young as 30 days old and are kept here up to the age of around 120 days, where they are then strong enough to fend off most predators. At this age, the Kiwi are returned to the property from which they came. In a way, you could say we are a crèche for young Kiwi chicks.

With regard to chemical usage, a 'no spray' policy is not a requirement for Audubon certification. Instead, we look more closely at insect life cycles, along with ways of carrying out checks to determine insect activity, and then utilize products with low toxicity. The launch of Du Pont Aceleypryn insecticide is a great example of new technology, as it is effective on insects as well as environmentally friendly. Simple cultural practices have been implemented, such as dew removal from fairways to reduce leaf wetness (in the winter months the dew removal helps to combat Red Thread), and breaking mycelium during periods when Dollar Spot can be prevalent.

Improving our irrigation water quality is a pathway to creating healthier soils for our turf. With our water high in bicarbonates and pH, this does little to assist with soil structure. We are about to undertake a program to inject ReliepH and carry out applications of gypsum. We believe this will help make the water that we do apply go further, along with providing guests a firmer, dryer golf course, just the way Tom Doak wishes it to play. From an environmental standpoint, using less water means utilizing less power for running pumps.

Each year, self audits are carried out on the irrigation system. Although the system is monitored on a daily basis, the audit allows us to ensure that isolation valves are working as expected, and that part circle heads are giving us the coverage required and not throwing water unnecessarily into tall grass areas. The audit also gives us a chance to see where we may be able to eliminate sprinklers by naturalising areas out of play.

Our industry can do more to improve its image by improving the way in which golf course maintenance is carried out for the betterment of the environment. There are excellent resources available to provide guidance and help formulate plans for all golf courses to be doing what they can. The process has helped Cape Kidnappers Golf Course look at our management practices and their influences on the game of golf and the environment.

The AGCSA would like to congratulate Steve and Cape Kidnappers Golf Course on winning the inaugural NZGCSA Environment Award.


Young Kiwi


Ready to harrow


Native Grass Post Cattle & Harrowing

Couchgrass – don't take it for granted

Phil Ford, University of Ballarat

September, 2011

It seems we can rule a line under the 1997-2009 drought in southern Australia. Previous droughts have shown that people have short memories, so no doubt in the next few years there will be golfers and footballers and bowlers complaining about the lack of colour of couchgrass over winter, and agitating for a return to cool season grasses. Golf Course Superintendents have longer memories. But many people, including Golf Course Superintendents, especially young Golf Course Superintendents, can take things for granted. Occasionally we should cast a look back as a reality check.

Peter McMaugh should be given enormous credit for promoting superior couchgrass varieties for fairways in Australian golf courses. In the early 1980s he was twisting the arms of Superintendents and committees at many clubs to switch to new varieties such as Wintergreen and Santa Ana. In those days (or after 1983, at least) there were no water restrictions, and the motivation to switch to the new couch varieties was all about quality, rather than saving water. And there is no doubt the fairway surfaces that resulted could rival or surpass the best bentgrass or ryegrass fairways seen anywhere in the world.

Kingston Heath Golf Club
Hole 13 Couchgrass fairway

But the real payoff came in the drought years after 1996. By that stage, of course, I'd guess that over 90% of Melbourne metropolitan clubs had made the switch. The only clubs that hadn't converted were three or four laggard private clubs, and most of the public, council-run courses. Council-run courses (with a couple of exceptions, such as those run by the Ringwood Golf Club guys) worried about the lost revenue for the 3 months or so out of play during couch conversion, and decided to do nothing and hope the drought problem would just go away. It didn't, and the problem for all those clubs was that couch establishment takes a lot of water, and it was impossible to start their conversions once water restrictions had come in. I recall several of those courses (eg. Geelong Golf Club) who had converted two or three fairways to couch, and when water restrictions came in they had 15 dead fairways and three absolutely beautiful couch fairways. Too little, too late.

I recall a Victorian Superintendents meeting one summer at Greenacres, I think, and Michael Picken was president. Forgive me if my memory is faulty there. But Michael asked the group of 60 or so Supers 'who was being badly affected by the drought and the new Level 4 water restrictions?' Only a couple of hands went up, I know Jim Porter from Royal Melbourne was one, he was wanting to get the couch growing faster after the Poa had died out, and probably had a tournament coming up. But nearly all other Supers were quite comfortable with the fact that they weren't going to be able to water their fairways at all!

I recall another story, at Metropolitan Golf Club, also around 2004 I guess. The Victorian Golf Association and the Smart Water fund had initiated a trial of 16 different couchgrasses for fairways for Victorian conditions. One valuable lesson that came out of that trial was that in Melbourne, being a marginal climate for couch, not all couch varieties will succeed, and variety evaluation is essential. Varieties such as WindsorGreen and Plateau, while excellent performers in Sydney, simply don't grow in Melbourne. But the thing that sticks most in my mind about that trial was when a small busload of water people involved in the Smart Water fund came to Metro to look at the plots, as part of an information day. I gave a short talk on C_3 v C_4 photosynthesis, and the advantages of couch. They were very polite, but their eyes were starting to glaze over after a short while (I have that effect on people, just ask Jim Hull). So we headed back to the bus, walking over an immaculate, deep green Wintergreen fairway. This was February, by the way. One of the people commented to Richard Forsyth 'these fairways must be getting a fair bit of irrigation', to which Richard replied 'these fairways haven't been watered for three months with minimal water applied over the past three years'. I think that single statement alone taught them more about couchgrass than anything they'd read or heard previously.

So we should be extremely grateful to Peter McMaugh, and for the younger readers, your predecessor Superintendents who pushed through a couch conversion despite opposition from committees and members, and despite the pain and cost of the program. As Peter and those older Superintendents probably said in their submissions, the benefits will be there for many generations to come.

I want to expand on couchgrass drought resistance a little further. I did a research project for my Sydney Uni masters, under Dr. Peter Martin. I expected to find that couch's

ET rate would be dramatically lower than cool season grasses, especially when the soil started to dry out. To my surprise (and I repeated the test to check, over a three week period of drying) the couch daily ET rate was only about 25% lower than that of Bent, Ryegrass and Tall Fescue. 25% lower is pretty good, but doesn't fully explain why Richard Forsyth could have beautiful, green fairways in the middle of February, with no irrigation (bent or rye would be well dead by then). I learned that the drought resistance of couch is much more than just a lower ET rate, there are actually four separate factors:


Legend® Couchgrass

- A 25% lower daily ET rate
- High tolerance to Heat Stress (it's Heat Stress that kills a lot of the C_3 grasses when they aren't irrigated generously)
- Couch roots get better (longer and more efficient at water uptake) as the summer goes on (in contrast to cool season grasses, whose roots decline, especially in functional efficiency, as the summer goes on), and
- 'Resurrection' ability, which is the ability to rapidly bounce back in growth and colour after any rainfall or irrigation that is applied in the summer. Couch actually has this advantage not only over cool season grasses, but over kikuyu, Paspalum and Zoysia as well.

But it doesn't stop there. Couchgrass has many other advantages, apart from being a beautiful surface to hit off, and being drought resistant. I'll make a list, but I bet you can add some:

- It tolerates a wide range of herbicides. I reckon there isn't a weed you can't quickly and cheaply kill out of couch (unless it's another couch).
- It has very little serious disease. Spring Dead Spot can be managed, I think particularly by variety selection and reducing dormancy. That might change with this new Black Fungus problem, let's hope a solution can be found for that.
- It doesn't get Argentine Stem Weevil. It does get a range other insects, of course, but these can be managed if their numbers are monitored by plug inspections and if you act well in advance of the damage period.
- If you have a couchgrass sward you can always plant a cool season grass into it for the winter, if you want to use that option. But if you have a Ryegrass sward you can't successfully plant couch into it for the summer, it just won't work.
- It is self-repairing. Divot marks simply grow over.
- There are many varieties to choose from, from coarser types to ultradwarfs, and from very dark green to a brighter green.
- It is extremely salt tolerant. In our trials Santa Ana tolerated a full summer of irrigation using water up to 18,000 ppm, and even survived reasonably well (although it was knocked around, obviously) under full seawater irrigation (36,000 ppm). There are big differences in varieties with salt tolerance.
- Mowing height can vary, so it can be used from rough down to greens height.
- It has the highest wear tolerance of all turfgrasses, except Zoysia.
- Its growth and seedhead emergence is very sensitive to Primo, which can be used effectively and cheaply to manage growth and quality.

There are other advantages too. I recently looked at 20 or so randomly selected Santa Ana football fields in Melbourne, with Michael Robinson of Sportsturf Consultants, and the amount of grass cover and playability of the fields was generally very good, even though Melbourne's rainfall in May, June and July (137mm) was nearly bang-on the average over the last 20 years (139mm). Many sceptics had the opinion that couch football fields would be destroyed in a 'normal' Melbourne winter, but this hasn't happened. And what's more, they'll recover rapidly as the weather warms up. We'll be looking at them from aerial photos on NearMap (if you haven't used this free online source, go to www.nearmap.com straight away, you can see very clear aerial shots of your course, and go back to photos taken periodically over the last few years).

Most of the trial work I've referred to here has been funded by the Victorian Golf Association, and is normally available on their web site. I think their site is under reconstruction at the moment, and access is restricted to member clubs with a log-in, unfortunately. Possibly any interested parties could have the relevant reports sent on by the AGCSA. It includes the variety trials at Metropolitan, the salinity trials and the ET work.

RESISTENCE MANAGEMENT

By Jyri Kaapro, Research Manager - Green Bayer Environmental Science

The development of resistance by weeds, pests and diseases to chemicals is an increasing problem in many fields of agriculture and should be a key consideration for golf course managers in designing their management programmes. Proper use of all the management options available will give us best use of the chemicals which are currently available and will be developed in the future.

Limited chemical options for turf

The turf industry in Australia has a reduced range of chemicals from different mode of actions groups available for use. Turf registered chemicals represent 47-64% of all available mode of action groups (see following table). This highlights the limited number of different groups available for turf managers compared with other agricultural and horticultural industries.

New chemical development

With increasing costs involved in the discovery and development of chemicals fewer new chemicals are being developed. In 1996 in Australia there was 21 different herbicide active ingredients registered for use in turf. These chemicals represented 9 different mode of action groups. 15 years later the number of active ingredients has increased to 26 with 9 new herbicide active ingredients registered in that time. The change in the number of mode of action groups? Zero. We still have 9 herbicide mode of action groups registered in turf. While there is no argument that some of these new herbicides (like the sulphonyl ureas) are very valuable weed management tools, it shows that the risk of herbicide resistance development is very real.

Where to get more information

Internationally there are "Resistance Action Committees" (RAC) whose general purpose is to support a cooperative approach to the management of resistance. There is a committee each for herbicides, fungicides and insecticides. Each committee has a web-site with useful information on mode of action and resistance management. Searching the internet for HRAC, FRAC and IRAC will quickly lead to the respective web-sites.

On the local front, resistance management information particular to Australia is organized by "Croplife Australia". Once again their web-site has information like mode of action groupings. Croplife Australia also has general strategies for resistance management in fungicides, herbicides and insecticides. There are no specific recommendations for turf herbicides and insecticides, although many of the more recent turf herbicides have resistance management information on the labels. Croplife Australia does publish a turf specific fungicide resistance management strategy which is reproduced below.

DO NOT apply more than two consecutive sprays of fungicides from the same activity group (other than Group 14, 28, M2, M3, M4 or M5), unless mixed with a protectant fungicide from Group 14, 28, M2, M3, M4 or M5.

In more simple terms the strategy states that we should not apply more than two consecutive sprays of most fungicides. This not does apply to some fungicides like mancozeb, chlorothalonil, propamocarb and some others. If you need to make more than two consecutive applications of a fungicide than the third time it should be tank mixed with one of the fungicides mentioned previously.

Resistance development in the turf industry

In the USA resistance has been seen in the turf industry to various herbicides, fungicides and insecticides. Diseases which have resistance problem include dollar spot, pythium, anthracnose and gray leaf spot. It is often the annual grass weeds which first show resistance and in the USA in turf situations both wintergrass and crowsfootgrass have developed resistance to some pre and post-emergent herbicides. Turf pests in the USA which have resistance problems to some insecticides include scarab grubs, sod webworm and annual bluegrass weevil.

Lack of Australian Research

How many cases of resistance have been discovered in the Australian turf industry? None to my knowledge. I don't think this is because resistance is not present; it more highlights the lack of turf research which occurs in Australia by qualified scientists. Chemical resistance is an important issue which should not be lightly dismissed. All golf course managers need to develop integrated system to manage their pests which not only gives the desired pest control results but ensures these tools will remain effective in the future.

Category	All registered groups	Turf registered groups	(% of total)
Fungicide	28	18	(64%)
Herbicide	19	9	(47%)
Insecticide	26	15	(58%)

Environmental Management and Corporate Governance – The Role of the Superintendent

Prepared by: Terry Muir B.App.Sc(EAM), M.Sc&Tch(Enc Sc) Env Auditor, Cert IV

INTRODUCTION

It is a fundamental principle of good governance to have in place practices and processes that address environmental management. Today, compliance is demanded with a greater number of statutes, regulations, industry standards and principles than ever before. Society is becoming more litigious, regulators are having their arsenal bolstered by greater powers and a greater range of penalties and Superintendents want to protect both the golf brand and the brand of Superintendent.

In the last 12 months alone, the golf workplace in Australia has seen one death, one near death and two other major incidents involving environmental and safety breaches. All of these incidents are life-changing and terrible events. Apart from the environmental and public relations damage they cause there is no easy way to make lives whole that are turned upside down in the aftermath of an environmental incident.

Everyone in the industry knows the risks. Some Superintendents lay responsibility with their General Managers, General Managers with Supers, Boards with GM's and vice versa. Others simply remain apathetic, yet many Superintendents are taking positive action and embracing environmental management as a business opportunity and a social and ethical responsibility. They also see environmental management as a means to raise their own professional profile.

And why wouldn't they!!! The words of Justice Talbot when handing down the sentences in the Warringah case should still be ringing in everyone's ears. Scathing of the industry and management, Justice Talbot said, "The Court should send a powerful message to sporting club operators that mismanagement or, particularly as in this case, abandonment of environmental responsibility will lead to condign punishment." He went on to state, "The club, through its board and management, never seriously addressed the issue of environmental responsibility. Future, as well as present board members must be made aware that the consequences of a re-occurrence could be catastrophic to the financial viability of the club." A more powerful message directed at golf course management could not have been made. It is therefore critical that all Superintendents have documented processes in place to demonstrate a commitment to managing environmental risk.

CORPORATE GOVERNANCE AND DUE DILIGENCE

Recently a Senior Manager of a local council in NSW was prosecuted as an individual for the actions of his staff. The Council, as his employer was also prosecuted, convicted and fined $45,500 and ordered to pay $114,000 in costs by the Land and Environment Court. Geoffrey Freeman, formerly

Simon Brown, Long Reef Golf Club assistant golf course superintendent, is the first person to achieve a perfect score in the epar certification exam. He joines 68 other golf course personnel in the certification pathway to have their environmental competence recognised

the Director of Infrastructure at the Council and the man responsible for the construction of the roads, was convicted and fined $57,000 and ordered to pay costs of $167,500. **He now has a criminal record as he was held responsible for the actions of his staff.**

Mr Freeman did not raise the defence of due diligence in the proceedings – perhaps realising that his conduct fell short of the exacting standards required to establish due diligence. In this case, Mr Freeman would have had to at least establish that he did the following to try and prevent the commission of the offence:-

- Satisfied himself that a proper assessment of the impact on the activity was done to meet requirements under the legislation;
- Ensured that the work was carried out in accordance with all approvals; and
- Took all reasonable and practicable measures to ensure that no harm was otherwise caused to the environment.

In another case that involved pesticide use, the EPA prosecuted a Council for the actions of its employee. This matter related to the application of a pesticide by a Council employee on green playing fields. The Court heard that the application of the chemical was directly responsible for the death of 42 to 50 ducks. The Court accepted that the council as a corporate body comprising the councillors and the executives involved in the day to day administration of the council may not have been aware of the particular circumstances under which pesticides were being used by its staff. Nevertheless, the Court held they still bear

the responsibility to ensure that procedures are in place which recognise the serious nature of the obligation the council has in dealing with chemicals and which reflect an understanding of the environmental impacts which can occur, including any danger that might be caused to its own employees. The Council acknowledged to the Court that the defence of using all due diligence to prevent the contravention by its staff member was not open to it.

Both the Freeman and the Gosford Council cases serve as a reminder to Superintendents of their exposure to personal prosecution when their companies or staff commit environmental offences. Both cases also provide some valuable lessons that can help limit this exposure. Some of the key lessons for Superintendents to remember include:-

- Superintendents, their staff and club directors and managers are subject to the same environmental law obligations as any other person.
- It is essential for Superintendents to be able to demonstrate that they acted with all due diligence. Given the complexity of environmental protection legislation and the range of obligations – establishing due diligence will require some effort.
- Ignorance isn't bliss – even if a Superintendent lacks actual knowledge of the contravention – imputed or constructive knowledge is easier to establish, especially if they are directly responsible for a project or in a senior management position.
- Training in environmental obligations and awareness is essential for a Superintendent and their staff.
- Procedures should be in place to put checks and balances on any decision that is likely to or has the risk of causing environmental harm.
- Prevention is always better than cure – prosecution could be avoided if systems are in place to ensure activity complies with legal obligations.

Due diligence requires that employers, supervisors and others understand and carry out their legal duties, assess the risk and hazards in the workplace on an on-going basis and **take all reasonable precautions** with respect to those risks. At its simplest, due diligence means to take care. In the workplace, it means taking every precaution reasonable in the circumstances to protect the environment. Evidence of due diligence is one of the defences available to a Superintendent or person concerned with the management of a club should they be charged with an offence under environmental legislation because of the actions of their staff.

GOLF COURSE MAINTENANCE RISK MANAGEMENT

Superintendents operate in an environment fraught with risk. They are required to manage many situations and issues that impact upon the environment. Every time a chemical is used, a fertiliser applied, equipment operated or maintained or when any decision is made concerning the maintenance of turf grass, there is an element of risk to the environment.

The following image is a summary of the typical environmental portfolio of a Superintendent. Is this vast risk portfolio being managed at your facility and as the Superintendent are you comfortable your staff are not exposing you and the organisation to liability?

CONCLUSION AND RECOMMENDATIONS

The 1992 Canadian environmental prosecution of Bata is responsible for bringing the concept of due diligence into sharp focus within the corporate community. In this case the corporation, its directors and managers were all charged with environmental offences relating to the unlawful discharge of waste.

Try the quiz. The following 10 questions will provide a snapshot of your current environmental management due diligence status.

ISSUE	yes	no
Do you have a corporate environmental policy that is documented and implemented?		
Do you have an environmental management system in place that is maintained and regularly audited?		
Have you undertaken an environmental risk assessment in the last 12 months to assess your current environmental status?		
Is there access to relevant environmental laws and regulations, as well as other requirements to which your club must adhere?		
Is environmental management included in the position description of staff?		
Do you have an environmental management organisational chart in place listing environmental responsibilities of all grounds staff?		
Are all staff and contractors environmentally inducted every 12 months?		
Do you conduct regular simulated environmental emergency response exercises to ensure staff are competent to respond to an event?		
Do you maintain environmental training registers? Is environmental management included as a line item in your operating budget?		

The Court exonerated the CEO because he actively participated in the preparation of the company's environmental policy; he delegated responsibility to an experienced Director and was unaware of the waste disposal. However, the President of the company was convicted because he was aware of the problem but took no steps to deal with it. The on-site manager was also convicted because he knew of the problem and had responsibility and authority to take remedial action but failed to do so. Both the company and individuals were convicted and fined. The Court also found that **the financial difficulties of a corporation did not excuse a failure to take steps to deal with its environmental responsibilities.** This case has become the judicial touchstone for measuring standards of conduct in relation to environmental and safety management.

While there is no fool-proof plan to guarantee the prevention of environmental incidents, a risk management strategy in the form of robust environmental management system is essential to enhance accountability, responsibility and defensibility. The ultimate goal is to ensure individuals at your club understand their environmental responsibilities and are accountable for their actions. As, Justice Hemmings (1991) reported in The Land and Environment Court, "due diligence contemplates a mind concentrated on the likely risks so as to prevent the contravention which actually occurred, **general precautions will not suffice."**

RECOMMENDATIONS

If after reading this information and completing the brief quiz you have concerns about your environmental management liability it is time to consider implementing an environmental management system. You can't afford not to. Don't think that you will be free from liability just because you have brought this to the attention of management. If you know you are carrying out activities that breach the legislation and continue to do so you will be liable along with club management.

Environmental management represents a very low proportion of your course maintenance budget and the regulators know it. The corporate governance role of a Superintendent requires a commitment to environmental management. Your professional brand depends upon it.

The following text is a summary of the typical environmental portfolio of a Superintendent. Is this vast risk portfolio being managed at your facility and as the Superintendent are you comfortable your staff are not exposing you and the organisation to liability?