

AUSTRALIAN

# Turfgrass



VOLUME 10.3 MAY-JUNE 2008

MANAGEMENT

## Indian Ocean Sea Change

Four Seasons GC, Mauritius

## Water

## Management

Sandbelt supers  
shore up supplies

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## COVER: Parliament House, Canberra:

The Kentucky bluegrass/tall fescue turf ramps are one of the standout features of Parliament House in Canberra. However, with water management issues starting to impact heavily on the region they could soon be converted to warm-season varieties.

**Photo:**  
**Brett Robinson**



### Canberra's couch encroachment

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With water prices skyrocketing and resources dwindling, Canberra turf facilities are biting the bullet and converting their cool-season surfaces to warm-season varieties. In this edition's cover story ATM looks at a number of the region's golf clubs and turf facilities that have or are preparing to make the switch.

### A change of seasons

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Switching from Royal Sydney Golf Club to a brand new golf course development on the tropical island of Mauritius has certainly provided many interesting scenarios for Australian superintendent Greg Puckeridge. Here he outlines some of the challenges in getting the Ernie Els-designed Four Seasons Golf Club up and operational.

years which saw him journey to the US to take part in the Ohio State Program.

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Winning the 2006 AGCSA Graduate of the Year award opened up the turf management world to former Yamba Golf Club apprentice Sean Kinsley. Here he looks back at the past two



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superintendents and clubs  
to improve golf course  
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# making the switch

Converting from cool-season varieties to warm-season is a massive undertaking for any turf facility. Whether it is the method of conversion, the educating of end users about the likely changes to surface characteristics, through to the ultimate change in maintenance practices, it is a process that requires plenty of research, patience and persistence.

In Canberra, traditionally a haven for cool-season varieties, the writing has been on the wall for a number of years, especially with the price of potable water rising dramatically and the inevitability that it will continue to do so. Again over the past growing season more golf clubs have made the decision to replace their cool-season fairways with either native or hybrid couchgrass varieties, and in another 12 months or so even the landscape department at Parliament House will be making the switch.

In putting together this edition's lead feature I was fortunate to visit a number of facilities making the transition and a common theme to emerge was the desire of each superintendent and turf manager to not only improve their chances of getting a better night's sleep, but to usher in a more sustainable future for their clubs. For many facilities the conversion is the first step in an ongoing process and in many cases securing a viable water source for the future is the next huge item on the agenda.

To all the Canberra turfies who showed me around their facilities in early April I thank you sincerely and wish you all the best as you embark on these major projects. It is a big decision for many and it will be interesting to look back a few years down the track to see how these projects have panned out.

As part of my visit to the nation's capital, I was fortunate to visit Parliament House, as you can tell by the edition's front cover. Being a proud Kiwi, I must say I was extremely taken with Parliament House and its surrounds (sorry, but the Beehive ain't got nothing I'm afraid) which are lovingly nurtured by a maintenance crew of 17.

As an aside, I created a little bit of history according to outgoing landscape manager John Lloyd after managing to get through the private ministerial entrance to Parliament House and halfway through the building without any security clearance! Ironically it was as we headed to the staff cafeteria for a spot of lunch that I was finally found out by a no-nonsense moustachioed guard.

Elsewhere in this edition, former Royal Sydney Golf Club assistant superintendent Greg Puckeridge, who is now superintendent at Four Seasons Golf Club in Mauritius, recounts some of the challenges he has faced getting the new Ernie Els-designed course into play, while The Grange Golf Club superintendent Richard James recounts his trip to South Carolina and Georgia last year where he visited some of the region's top golf courses, including Augusta National. You will also notice a few changes with this edition, mainly the absence of the Offshoot supplement which we have decided to bring back within the folds of the magazine.

Finally, looking back at our last edition I cannot begin to describe the amount of feedback we had on the 'Tails from the Turf' article which highlighted superintendents and their faithful canine assistants. The feedback, both good and bad, certainly surprised this scribe and of all the articles compiled in my time here it has generated the most amount of comment, even outstripping our much-talked about feature on the Warringah Golf Club verdict. I thank all those who took the time to phone, write or email their thoughts, especially to the one superintendent who was bold enough to put pen to paper and express his opinion in a letter to the editor – see page 63.

Enjoy the read.



*Brett Robinson*

**Brett Robinson**  
Editor



More than 30 years  
in the making



In the last instalment of Foreword Thinking (Volume 10.2) we highlighted the need for the AGCSA to rethink its Strategic Plan and purpose going forward. Since that last edition the AGCSA has conducted a couple of great planning sessions which will go a long way to ensuring the AGCSA continues to be seen as a professional, proactive and decisive body dedicated to providing exceptional services to its members.

As a first step in the Strategic Plan review, the AGCSA Board approved a new vision statement and goal for the association at its quarterly meeting in March. The Board has revised the current AGCSA vision statement to read:

**"The Australian Golf Course Superintendents Association (AGCSA) is committed to the ongoing professional development and support of all those involved in the golf course maintenance industry."**

Following on from the vision statement, the ultimate goal for the AGCSA is that:

**"All golf courses have the best possible playing surfaces and adjacent environment within the limitations of the available resources."**

In the second phase of this review we will be looking at clarifying the fundamental aims of the AGCSA. These are:

**1. To increase awareness and understanding of a golf course maintenance role and challenges they face to ensure they receive the respect and recognition they deserve.**

This will involve the AGCSA developing key communications strategies to target those that influence the golf course maintenance

team, including general managers, golf club boards, players, golf professionals etc.

**2. To improve the professionalism, consistency and the standard of non-agronomic skills of members to ensure the status of the role is improved.**

It is widely recognised that the role of the superintendent has changed significantly in recent years. The need to understand budgets, negotiation and presentation skills, computer skills, conflict resolution, and effective communication to all levels of a golf club community are essential elements required for the role in this day and age.

**3. To have the member base represented by a high proportion of golf courses and a wide range of golf course maintenance roles.**

While most of the association's efforts to this point in time have focused on delivery of knowledge skills and benefits to support the superintendent, we realise that to achieve our ultimate goal of providing the best possible playing surfaces, we will need to reach beyond the superintendent and deliver meaningful information and support to all golf course maintenance roles.

This will also see the AGCSA develop what is likened to a sporting association junior development programme, where we will offer a number of benefits that nurture incumbent ground staff and prepare them to one day lead and advance the industry into the future.

**4. To influence and lead in environmental issues and upcoming agronomic challenges.**

Golf courses operate in a tentative position in Australia and have a seemingly reckless



image in the public domain when it comes to the environmental management. This, however, is far from the truth. The AGCSA is a recognised world leader in environmental management and we will aim to hold this position going forward.

Golf courses can and should be presented as a great environmental asset to any community and we will assist driving this positive message along with proactive actions among the wider community.

With these aims in mind, we are now in the process of converting this top end vision, goals and aims into actions by creating a business plan to identify micro goals and objectives to achieve this exciting path forward. Before long you will notice these changes at the AGCSA and what is delivered by the AGCSA to support you and the industry going forward.

A summary of the AGCSA's 2008-2012 Strategic Plan will be available for viewing on the AGCSA website [www.agcsa.com.au](http://www.agcsa.com.au) and we actively encourage your feedback and support in achieving this plan. 🌱

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“ Trials conducted by the AGCSA show that the Evergreen Turf Cover can significantly improve establishment rates and plant vigour of bentgrass on newly sown greens, as well as promote higher levels of moisture retention in the rootzone.” — Andrew Peart, AGCSATech.



With water bills skyrocketing and resources diminishing, maintaining cool-season turf surfaces in the climatic extremes of Canberra is becoming less and less sustainable. In this edition's cover story, ATM takes an extensive look at some of the golf clubs and turf facilities biting the bullet and making the transition across to warm-season varieties.

The figures make for stark reading. Just ask any superintendent (or turf manager) to show you their water bill in recent years and it's easy to see why there is an air of change blowing through the Canberra turf community.

With water as much as \$3.21 per kilolitre and the prospect that the price could increase to more than \$4 per kilolitre in the not too instant future, golf clubs in the region reliant on potable water are forking out upwards of \$350,000 a season all in the name of keeping their cool-season surfaces alive. As any superintendent, or accountant for that matter, will attest the situation is no longer sustainable financially and also carries serious environmental and social implications.

You don't have to tell Canberra's turfies that the climate they work in provides a considerable challenge in their line of work. Of all the major centres in Australia, Canberra has the most extreme variation in temperature throughout the year. In the height of summer the mercury has been known to soar as high as 40 while in the depths of winter it can plummet to as low as -9.

For six to seven months of the year conditions are perfect for growing couch, while for the remainder of the year the cool-season species revel. The present challenge they all face is maintaining the cool-season varieties over the summer months and the only way to do that is with water – and plenty of it.



# Canberra's couch

The solution, therefore, is a switch to warm-season varieties and over the past spring and summer more turf facilities in the ACT have embarked on fairway conversion programmes. Converting to warm-season grasses isn't by any means a new phenomenon in Canberra and in many instances is just the first stage of an ongoing process to secure a more sustainable future for each club.

Whether it's going the seeded or vegetative option, golf clubs are forging ahead and making the transition across to couch. Even Parliament House, following a major review of its operations, is set to make the switch which means the famous cool-season turf ramps could soon be a thing of the past.

## BITING THE BULLET

Of all the golf clubs in the region to make the warm-season switch this past summer, Federal Golf Club has gone 'all in'. With virtually no

water storage capacity on course (except for a series of tanks which hold a combined 650,000 litres) and miniscule bore yields, the club simply didn't have the luxury of transitioning slowly across over a few years.

Desperate to arrest its spiralling town water bills – last year's statement read a staggering \$340,000 – the club, at the persistence of superintendent Stephen Lording, bit the bullet and line-planted 12 hectares of Santa ana over Christmas and New Year.

Couch is by no means foreign to the Federal membership as over a decade ago Lording saw the writing on the wall and converted the 6th and 17th fairways to the hybrid couch variety. Over the past decade the membership has grown to accept the colour and dormancy issues associated with couchgrass in winter and that it provides just as good a playing surface as the old predominantly *Poa annua*/ryegrass fairways.





The trend towards warm-season grasses in Canberra is gaining momentum and already this past growing season a number of golf clubs have started conversion programmes. Even the famous cool-season turf ramps of Parliament House are likely to be a thing of the past following a comprehensive landscape review by the Department of Parliamentary Services which has recommended a switch to couchgrass over the next couple of years

was made to line-plant Santa ana on the remaining fairways this past season.

After spraying out the cool-season grasses with 10l/ha of Round-up, the conversion process began on 20 December, slightly later than hoped, with the whole course completed by 3 January, 2008. During that time Lording and his staff also resurfaced four greens. As well as providing the quickest means of conversion, the line-planting option also made more sense to Lording.

"I just thought it was the best option," says Lording. "I don't think there has been a huge amount of research on seeding, particularly in colder climates. I read an article by David Nickson about the pros and cons of line-planting and seeding and the key thing he mentioned was getting rid of competition. If you don't bite the bullet and get rid of your competition, I think the seeded option could end up a lot more expensive.

"Certainly the line-planting option has been very disruptive to the members. The course was closed for nearly four weeks, opened with tee-up for another six weeks and it will remain preferred lies until it completely covers in. So you can see why the seeding option is probably better for some clubs.

"It was originally recommended that we only do three hectares, but we didn't have that luxury of just slowly changing the fairways across because of the price of water. So we did the lot and we couldn't be happier. The first three fairways we did now have 100 per cent coverage and the worst fairways are probably about 85 per cent.

"We also hit them pretty hard with a series of herbicide applications for *Poa*, summergrass, crowfoot and broadleaf. They have been treated hard from the beginning, but now we'll let the *Poa* come through over the winter months which will fill in any bare

Convincing the club to make the full switch across, however, proved to be a bit more difficult, but eventually with a change in board and the hip pocket nerve starting to ache more and more, the decision was made to take the next step.

"Water has been the biggest killer at Federal for a number of years," says Lording. "We are the only club in Canberra that doesn't have a water supply, apart from our bore yields, which in the 20 years I have been here have dropped from 900 kilolitres in 24 hours to 200KL.

"We are paying \$3.21 per kilolitre and last year our bill for town water was \$340,000. All the indications are that prices will only keep going up and I've heard figures of anywhere from \$3.50 to \$4.16 per kilolitre. And to top things off the ACT Government has this year decided to put a 25c per kilolitre charge on bore water. Quite simply it got to the stage

where it just wasn't sustainable maintaining cool-season grasses any more and if the club continued down that line it wouldn't be viable."

Lording jokes that he was "a visionary" when he put in the two Santa ana fairways back in 1997. By no means was it a spur of the moment thing, rather Lording was interested to see how couchgrass could handle the extremes of Canberra's climate, particularly in winter.

He made trips to courses along the River Murray and ended up choosing Santa ana as it came out of dormancy well, didn't go into dormancy too quick, and, unlike a lot of the native couches in Canberra, it seemed to withstand the cold temperatures, still keep its leaves and didn't go stalk-like in appearance. Having had the two Santa ana fairways for a decade, there was no need to investigate any of the other hybrid couches and the decision





**For superintendent Stephen Lording, converting the predominantly *Poa annua*/ryegrass cool-season fairways to Santa ana couch is just the first step in a long process to drought-proof Federal Golf Club**

areas we have and protect some of those exposed couch runners. We'll let the *Poa* run up until the Federal Open Amateur in October and after that we'll be aiming to have 100 per cent couch cover by Christmas Day 2008."

By no means, however, will converting to couch be a panacea for Federal. With the price of water only going to go one way, the club also needs to quickly address its issues of water storage. The club currently has plans before the ACT Government to construct a 20 megalitre storage dam on the front nine which will be fed by stormwater. Money permitting, another 20M and smaller 3-4M holding pond are also on the cards.

"It's all about water for us and drought-proofing the course," says Lording. "The ACT Government has indicated we have to be self-sufficient by 2013. We've done stage one and by doing that we will cut our water usage by 50M. We still have a lot of cool-season tees and surrounds so I'm still trying to convince the club to change them across as well. Hopefully that will come in time, but for now at least we are on the path to being more sustainable."

## SOWING THE (COUCH) SEED OF CHANGE

While Federal has taken the plunge and gone down the line-planting path, a number of the region's other golf clubs have preferred a gradual transition via seeding. Gold Creek Country Club, Queanbeyan and Capital have all started their conversion programmes this

past growing season, while the likes of Yowani Country Club and Royal Canberra have been increasing populations of couch over the past seven years, Yowani using both seeded and vegetative means.

Up at Gold Creek, superintendent Scott Harris did some trial work with line-planting before opting to go down the seeded path. Unable to see the benefit of closing the course for 4-8 weeks and losing money over one of their busiest periods, Harris has instead opted for a two-year couch conversion programme which began in November 2007.

Harris oversowed the existing ryegrass/Kentucky bluegrass fairways with a mix of Transcontinental and Panama seeded couch, followed by a topdress of 500 tonnes of sand. After a series of trials in January, Harris applied 5ml of Monument to slow down the resident cool-season varieties and given its impressive

result will adopt a similar programme come next growing season. With a lot of common couch already in the fairways, Harris is hopeful that by the end of the next growing season there will be close to full coverage on all fairways.

Water, of course, was the main reason for making the switch to warm-season and despite not having to worry about storage capacity (the course has a huge 135M dam on site fed by a 200ha catchment area) the club has had to purchase a considerable amount of town water during its 10 year existence.

Using anywhere up to 220M per year to irrigate the course (although this past year that figure is more likely to be 180M due to a cooler summer and the switch to warm-season), Harris says the water bill topped \$500,000 over the past three seasons, with the summer of 2006/07 accounting for half of that figure alone. Harris hopes that by converting across to couch there will be a resultant 50 per cent saving in the long-term.

Plenty of groundwork went into the decision to go with Transcontinental and Panama. Harris sourced information from company reps and also made a number of enquires with US superintendents who used the varieties on their courses which operated in similar climatic

**CONTINUED ON PAGE 12 ►**

**Twelve hectares of Santa ana couch was line-planted over the Christmas/New Year period at Federal Golf Club with excellent results**







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The issue of contract maintenance can be an emotive one for many in the golf course maintenance profession. For Yowani Country Club superintendent Justin Haslam he is in a better position than most to comment on the subject given that his club recently elected to switch back to in-house operations after five years under contract maintenance.



Earlier this year Yowani Country Club in Canberra switched back to in-house maintenance operations after five years under contract maintenance. For superintendent Justin Haslam and his staff the transition has meant a big adjustment

## Yowani comes full circle

While golf clubs and turf facilities all around Canberra are making the warm-season switch in response to escalating water management issues, for Yowani Country Club superintendent Justin Haslam and his staff a transition of a different kind has taken place this past summer.

Sure, like other clubs in the region Yowani is slowly transitioning its predominantly ryegrass/Kentucky blue cool-season fairways across to couch, but it is down in the maintenance facility where there has been a significant changing of the guard.

After five years under a contract maintenance regime, at the start of this year the Yowani Board decided to bring its maintenance operations back in-house following a major review. Wanting more control over the funds being spent on the course and a desire to instill a greater sense of ownership, the club decided to dispense with the contract maintenance company, bringing to an end what has been an interesting period for the club, in particular for Haslam and his staff.

"It has been a learning curve for all involved," reflects Haslam, who has been superintendent at Yowani for the past four years. "The Board thought there was a significant saving there

to be made – they were expecting to save about a third on maintenance by going down the contract maintenance path – and they believed there was a possibility of improved management.

"At the end of the day the club was very brave to try it and it was something they probably had to do because they were spending a fair amount of money and things were getting fairly tight. The trade is obviously very skeptical of contractors but I think the club did the right thing on giving it a go. They thought it was going to work but unfortunately it just wasn't quite tailored for the club's particular requirements.

"The club really wanted to have more control over where the funds were spent on the course and there was also a general feeling of unease among the members that they didn't have much control over what went on out on the course, whereas now they are showing a lot more pride in their course because it's back in their own hands."

Haslam, then a qualified greenkeeper, was one of 11 on staff when the club's board made the decision to go down the contract maintenance path in late 2002. Disappointingly, as has been seen at some clubs that have

gone down the contracting path, the existing in-house maintenance staff were the last to find out about the significant change to the way the course was going to be maintained.

"It was purely an internal decision which the board made and there wasn't any consultation with the maintenance staff," says Haslam. "Obviously there were a few disappointed people in the club and down in the shed we didn't know what was going on until a couple of the Board members came over and informed us that the club had made the decision to move to contract maintenance.

"The club wasn't aware at the time whether the contractor was going to keep us, but we were informed that all machinery assets were going to be auctioned off. As you can imagine there was a fair bit of apprehension among the boys, more a fear of the unknown. We had about 11 staff at that stage, including two apprentices. A lot of guys left while some of us stuck around and before Christmas the contractor came in and talked to us. They offered five positions which those of us left took up.

"With all the machinery being sold off, there were a lot of equipment changes which meant that we had to alter the way we did a



lot of things out on the course. We went from using lightweight fairway units to tractor drawn gang units, and instead of outfronts we were using big, 20-foot winged slashers and so on.

"Obviously the expectation of the Board was that the standard of the course was going to remain as was, if not improve, but I guess to be realistic there was also an understanding that there were going to be a certain things weren't going to be achieved due to the resources that were given to us.

"All we were specified to do was the day-to-day maintenance and set up of the course. There was no extra work like greens reconstruction, tee work, bunker renovations etc. That was all external to the contract and was an additional expense. If the club decided they wanted to do that sort of thing then I would sit down with them, discuss options and then oversee the work of external contractors which they would bring in."

The contract maintenance issue is an emotive one for many involved within the golf course maintenance profession and for a superintendent caught up in the middle of the debate it has been a sometimes awkward proposition for Haslam.

At the end of the day, Haslam remains philosophical about the whole affair. On the one hand he can see why the club made the decision to go down the contract maintenance avenue and has no ill-feelings towards them. On the other hand, however, his role as superintendent basically reverted to one of

just straight maintenance which at times was frustrating given that he could see areas of the course which needed attention but could do little about.

"Having seen both sides, I think people probably overreact a little bit to the whole contract maintenance issue, but I can see why there is some cause for concern," says Haslam. "At the end of the day they are out there to make a profit and make savings for clubs. For some clubs it works, for others it doesn't and in this case it didn't suit the needs of Yowani.

"Things were always busy, which isn't such a bad thing. Obviously we had to refine our work practices and justify more what we were doing out on the course. By all means it wasn't easy, but the expectations weren't too unrealistic. At times it was a little bit frustrating as you could see things that needed changing.

"I never felt insecure about my job under the contractor and I don't think any of the other guys were either, but there is definitely a little more certainty about our jobs now that we are no longer employed under a contract basis. The club always maintained they wanted to retain the existing staff in the transition period to contract maintenance, so there was a bit of job security there, but you always have to be cautious and look after your own interests."

Haslam says that he and the staff always maintained a good relationship with the contracting company and to the club's credit

the money that it did manage to save during that period was fed back into course improvement works such as bunkers and tees.

Making the transition back to an in-house set up has meant a considerable capital outlay for Yowani. In getting the maintenance facility stocked again the club has spent in the vicinity of \$400,000 on everything from fairway mowers, triplex mowers right down to spanners and shifters. While having just the bare essentials at the moment, Haslam is hoping the fleet will be expanded over the next few years.

All staff working when the contractor was at the club have been re-hired and Haslam has been fortunate to gain an additional staff member in the switch. The change has also meant that Haslam has had to set up new accounts with suppliers as well as establish new maintenance and works budgets.

Considering the significant cost in setting up the maintenance facility again, major works at the club have been put on hold for the time being, in particular the switch to warm-season varieties which has been happening intermittently over the past four years. Also helping to ease things financially this year, the club hasn't needed to purchase town water due to good rainfall and cooler temperatures over the summer months.

"It will be an adjustment for everyone in the hand over, but there is a very positive feeling within the club and among staff," says Haslam. "We are looking forward to seeing the course moving forward in the years to come." 🙌



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## CONTINUED FROM PAGE 9

zones to Canberra. One superintendent had Transcontinental across his entire course.

"I think we are on to a winner," says Harris. "Obviously other courses in Canberra have gone for a few different varieties, but we'll see how they all fare in the long-term. One of the major reasons for going with Transcontinental was that it has a similar leaf size as the common couch already existing on site. If we had have gone for a finer leaf couch, like Santa ana, it would have looked patchy in areas. I guess with anything money was a factor as well.

"Switching to couch will obviously mean some changes in our maintenance practices as none of us have been involved too much with warm-season grass management, so it's going to be a learning experience. With the climate in Canberra we are only going to get growth for at least 4-5 months of the season so we will have to seriously look at how we structure our renovation practices.

"It's going to take a while to learn about the different aspects of it and there might be a few mistakes on the way. But that's the great thing about the industry. We know that some superintendents down in Sydney and Melbourne have been through a similar process and I'm sure if we need some answers or advice we'll find it.

"That's one of the great benefits of going to association days and the Australian Turfgrass Conference because they give you the opportunity to sit down with people who have been or are going through similar changes and you can share ideas and implement those which suit your site."

## SAFEGUARDING FOR THE FUTURE

Across the other side of town and just a few clicks over the ACT/NSW border, Queanbeyan Golf Club superintendent Jason Ferry and assistant Adam Leech have been evaluating the success of their conversion programme which also began in earnest last November.

Thirteen fairways (the public access course has five par 3s) were oversown with La Prima couch in the first stage of a three-year plan. All

**Being proactive about educating members before and during the warm-season conversion has paid dividends for Queanbeyan Golf Club 21C Adam Leech (left) and superintendent Jason Ferry**



**Gold Creek Country Club superintendent Scott Harris has opted for a mix of Transcontinental and Panama seeded couch**

scalped the cool-season grasses right down, turned the water off and just seeded straight into it at 100kg/ha. Obviously we had a poor surface there for a period of time, but we haven't needed to topdress and we haven't had the need for preferred lies.

"Sure, we do have a few unsightly areas, but the golfers know we are going through a transitional period so they are all pretty happy at this stage. The biggest challenge will be the next growing season and removing all the cool-season grasses with the aim of getting to 100 per cent coverage.

"We chose La Prima for its quick germination and fast establishment over some of the other seeded couches as well as the fact that it has been developed in the US in a similar climate to Canberra."

Water management issues were again at the heart of the decision to switch to couch, although in Queanbeyan's case the reasoning differs a little from most other clubs in the region. The course has no access to town water at all and at present relies totally on drawing water from the Queanbeyan River.

"We are pretty lucky in that we can extract water out of the river, but in saying that every time we have renewed the license further restrictions are being imposed and I can only see that continuing," says Ferry. "Last growing season, even through we were still

things going well, Ferry is hoping to have 100 per cent cover on 10 of those fairways by the end of the next growing season and as much cover on the remaining three which have a higher percentage of existing kikuyu.

"At this stage we are pretty happy considering our process and the fact that we have had a cooler summer which hasn't been as favourable for establishing couch by seed," says Ferry, who has been Queanbeyan superintendent for nearly four years. "Being a public course which is reliant on social and corporate days, the key thing for us was to minimise the amount of disruption to play, so we didn't even consider line-planting.

"We lowered the fairway units to 8mm and





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cool-season, we saved 35M off our license and now that we are converting across to couch we can expect about a 50 per cent saving.

"By converting the fairways we are safeguarding for the future. At the moment we are totally reliant on river water and don't have any access to town water, so if they do cut us off the couch should be able to survive given the annual rainfall. The greens, well that's another issue."

A key component in the conversion to warm-season has been educating the members about the changes they will see out on the course. Ferry was working under Lording at Federal when the club converted two of its fairways to Santa ana in 1997 and can recall the shock that some members had when they saw the fairways in winter. As part of educating the members, Ferry and Leech have encouraged Queanbeyan's members to go over to Federal to see the fairways for themselves.

"I think they were a bit shocked at first with the aesthetics, but once they realised the surface was perfect it became easier to change their thinking," says Ferry. "As part of the education process we have had information nights trying to show them that what we are doing will have major long-term benefits for the club and will far outweigh any negatives.

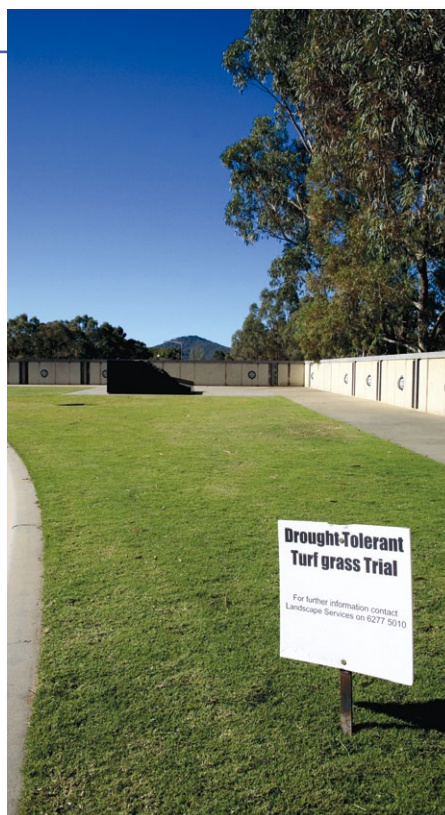
"We tried to inform the members and educate them before they saw it on the course. We put out small patches of couch to give them an idea of how it would look and told them straight up that it was going get worse before it got better.

"They were generally very receptive and we have found that those who didn't come to the education evenings were the ones that had more issues with what we were doing. But being proactive in this area has made a big difference and made the process easier."

## CHANGING THE PARLIAMENTARY LANDSCAPE

With the race to convert well and truly on, perhaps the most public manifestation of the change to warm-season turf varieties could come in a few years time. By then the most photographed patches of turf in the country – the tall fescue/Kentucky bluegrass turf ramps running up each corner of Parliament House – may well be couch.

That is the recommendation to come out of a comprehensive review of the parliamentary



landscape by outgoing manager John Lloyd, who retires from his post at the end of May after 20 years. Over the past year the 54-year-old has joined together with original Parliament House landscape architects Mervyn Dorrrough and Peter Britz and Parliament House building architect Aldo Giurgola to look back at the past 20 years and to predict the challenges set to face the landscape for the next 20 years.

"The review looks at the issues we have faced over the last 20 years, but more so those that have presented themselves in the past five years," explains Lloyd. "Certainly water restrictions in recent times have had a huge impact on the parliamentary landscape. Having to save 35 per cent of our water has meant we have had to sacrifice some areas in order to properly maintain the rest.

"We let 2.2 hectares of turf go and the nine hectares of native areas on the periphery of Parliament House have become irrigation-free zones. Obviously that has had a significant impact and we have probably lost around 800 trees and shrubs along with the turf. The water we saved on those areas, however, is what has allowed us to maintain the rest of the landscape."

The review was something that Lloyd had wanted to undertake for sometime and with his departure imminent it was the perfect opportunity to sit down to reflect. Being two decades old, what was important when Parliament House was originally designed 20

**Parliament House is currently trialling eight varieties of couch with the view to convert most of their 10 hectares of maintained turf across to warm-season varieties within the next two years.**

years ago was not necessarily important or relevant today and as part of the review Lloyd asked himself what were the key differences and, if given the chance to build Parliament House today, what he would do differently.

"The most obvious thing to come out of it was that we no longer have the luxury of using the amount of water that we once did," says Lloyd. "Seventy per cent of our water goes on the 10ha of maintained turf while the remaining 30 per cent is used on the 13ha of garden beds and landscape areas.

"That's why the key recommendation to come out of the review is to go to couchgrass. By doing so we will cut our water consumption from 160M a year to 70M, which will be a fantastic result. We've done some hydrozoning and water modelling on site and that was one of the things we had to do to ensure that the landscape survives.

"Although beyond the review's scope, it also highlighted that one of the key challenges will be for Parliament House to secure an alternate water source."

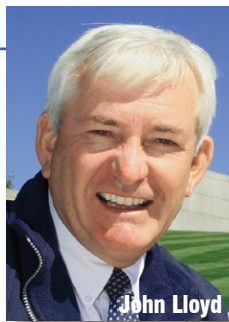
The warm-season conversion is expected to start as early as next season with the four hectares of turf outside of Parliamentary Drive (the road that circles Parliament House) set to be converted to couch. As for the cool-season ramps, Lloyd reckons they will be a further 12 months away.

To determine which couch variety will best suit the landscape at Parliament House, Lloyd and his staff have been trialling eight varieties since spring and constantly evaluating their performance. In selected areas along Parliament Drive, varieties such as Santa ana, Legend, Grand Prix and Conquest are being put through their paces. Lloyd is also looking at four New Zealand varieties – AgriDark, Patriot, Premier and CD – which have been brought across the Tasman by Dr Don Loch.

"Visually the ramps will look quite different in winter when the couch goes into dormancy and at this stage we are resisting going with a two-grass policy," says Lloyd. "We are looking at cutting the amount of maintenance and inputs required as well so the intention is to go solely couch with no oversowing.



"We also have to be mindful of how well it will fit in with the design intent of the building and the surrounding landscape. Parliament House isn't just a standalone building and forms part of the 'parliamentary triangle' which has design themes which we have to consider."



John Lloyd

While the exterior turf surfaces will switch to warm-season, the 17 grassed courtyards inside the walls of Parliament House will more than likely remain cool-season. Lloyd says the landscape department will continue to look at using native grasses and alternate species for use in these areas (the department is currently trialling zoysia matrella in one courtyard with mixed results), but they have yet to find a better species than ryegrass to handle the heavy shade issues which persist.

As well as water management, the review focused on other aspects of the department such as pesticide use, machinery, maintenance inputs, nutrition management and reducing the department's carbon footprint. It also looked

at the landscape as a whole and whether its design functionality met with the needs of modern day Parliament.

In some areas Lloyd says he and the

staff have been fighting a losing battle to keep them looking good and as a result of the review three areas will be completely overhauled. Not only will this improve the functionality of these areas but will also make them easier to maintain and more sustainable.

"The review also looked at aspects such as pesticide use," continues Lloyd. "I believe that in the next 10 years or so pesticides will be severely restricted and we won't have the luxury of using what we have had over the past 20 years. We have a very active IPM strategy in place here already so if the restrictions do come into play I don't think they will impact on operations too much.

"Things like fuel becoming more expensive, the types of machinery we run and the types



Paul Janssens

of grasses we put down were all included in the review. We examined nutrition management as well. Having Lake Burley Griffin just down the hill, we are very mindful and conscious that any runoff ends up in there. That is why we are keen to go further

down a biological path."

Although playing a key role in the review, Lloyd unfortunately won't be around for the next 20 or so years to see whether his predictions are on the money. After two decades in the top job Lloyd will step down as landscape manager at the end of May, handing the reins to Paul Janssens who is set to have a challenging time implementing some of the review's recommendations.

The transition of management will be effectively seamless given that Janssens spent the first 16 years of his career working at Parliament House under Lloyd before serving the past six years at the Australian Botanic Gardens where he rose to be head of living collections.

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The Parliament House couch trials include four varieties from New Zealand – AgriDark, Patriot, Premier and CD

“That’s the sort of things the guys here will have to sit down and look at and apply a bit of commonsense and local knowledge. But that’s something we have been good at over the years. We like to challenge things and we never treat anything as gospel. That has been one of the reasons why we have been able to maintain a very successful landscape over time and why I’m confident that we will continue to do so.” 🌱

“It is a planned transition with Paul coming back into the department,” says Lloyd. “He knows a lot of our established programmes and maintenance strategies and techniques which has made the transition a lot easier. It will be an interesting time in the coming years and not only will there be the recommendations from the landscape review to implement but he will also be overseeing the installation of a new

irrigation system. From a turf management perspective, maintenance practices will obviously change with the conversion to couch and that is something we will have to learn too. Obviously practices that suit couch in Sydney or Brisbane might not work the same here. We will have to learn what the best time is to renovate them and how hard we can hook into them.

### IN THE NEXT EDITION...

In Volume 10.4 (July-August), Australian Turfgrass Management will continue its look at Canberra turf facilities with visits to Manuka Oval and Thoroughbred Park, as well as a full profile on outgoing Parliament House landscape manager John Lloyd.



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The small tropical island of Mauritius couldn't be further removed from the inner Sydney suburb of Rose Bay, yet for former Royal Sydney Golf Club assistant superintendent Greg Puckeridge the idyllic Indian Ocean haven is now his new home. Having taken on the superintendent posting at the new Ernie Els-designed Four Seasons Golf Club, Puckeridge has joined a growing number of young enterprising Australian turf managers to showcase their skills on the international stage.



## A change of seasons

I first became interested in greenkeeping through my brother David, who is still involved in the industry as sports ground coordinator with Willoughby Council in Sydney. At 15 I started my greenkeeping apprenticeship with a contract bowling greenkeeping company owned by David Stacker and after completing that I contacted Royal Sydney Golf Club superintendent John Odell.

After many months of persistence he employed me as part of the team responsible for maintaining the club's tennis, bowls and croquet facilities. The following year I moved to the golf course department and over the following five years I worked my way through the ranks to assistant superintendent, a position I held for six enjoyable years.

Some people may wonder how I ended up with the position of course superintendent at Four Seasons Golf Club, Mauritius at Anahita and why I decided to say goodbye to Royal Sydney, one of Australia's elite golf clubs. The answer is quite simple. I was ready for a new challenge and I was very determined to progress to the next stage of my career.

At Royal Sydney we had just completed the very successful double of the 2006 Australian Open followed by the 2007 Australian Women's Open, only three months apart, and I had just successfully completed my Masters in Turf Management through the University of Sydney when the opportunity arose.

The challenge that presented me in Mauritius complemented my previous experiences at Royal Sydney with the course's reconstruction and several other tournament experiences at the highest level. I felt that growing-in a golf course to a playable state, designing internally a state-of-the-art maintenance facility, hiring and training inexperienced staff members and to be part of creating a new Ernie Els-designed championship course, while at the same time living in a new country, was definitely a big enough challenge.

### FOUR SEASONS SEA CHANGE

It all began 12 months ago when Phillip Knight, a fellow Australian superintendent who is currently working in Mauritius at Le Touessrok Golf Course, contacted John Odell about a

possible superintendent position on the island. I was very interested, especially when I found out that Four Seasons Hotels and Resorts was involved in the project and that Ernie Els was the course designer.

I was lucky enough to be selected for an interview and I travelled twice across the Indian Ocean, once for the initial interview and secondly with my wife. The second trip was mainly to see if my family and I could and really wanted to move away from Australia. Following several interviews and after many sleepless nights my wife and I finally made the decision to leave.

Four Seasons Hotels and Resorts is a five star-only hotel and resort management company. Isador Sharp is the founder, chairman and chief executive and last year formed a partnership with Prince Alwaleed and Bill Gates to form Four Seasons as a private company. Four Seasons currently manages 75 hotels (13 of which contain golf courses) in 31 different countries and has a combined work force of nearly 40,000. Here in Mauritius I have a very supporting director of golf Marc Amelot



**Greg Puckeridge with Four Seasons designer and South African great Ernie Els**



**Four Seasons Golf Club is located on the east coast of Mauritius. Part of the Four Seasons Hotels and Resorts company, it is now home to former Royal Sydney assistant superintendent Greg Puckeridge**

and general manager Andrew Harrison which makes life so much easier.

Phillip Knight and his family welcomed me to Mauritius as any other Australian would with great hospitality and friendship and they have since been a great help to my family and I during the settling in process. Over the last year my wife Blake and son Oscar have adapted well to the change, with my wife

participating in many expatriate social activities while my two-year-old has now started to speak both French and English.

Mauritius is an island situated east of Madagascar in the Indian Ocean. It covers 1865 square kilometres with 330km of coastline almost entirely surrounded by coral reefs. Population exceeds 1.2 million with a real multicultural mix of Indians, Africans, Chinese

and Europeans. Mauritius has a subtropical climate with two seasons – winter and summer. In summer, on the east coast, the temperature varies from 25-33 degrees with consistently high humidity and an average rainfall of 1400 mm per year.

The Four Seasons Golf Club is part of a new multi-million dollar residential and hotel development on the east coast of Mauritius. The Mauritian Government has allowed foreign investors to purchase land and luxury villas along the coastline through the Integrated Resort Scheme (IRS). The acquisition of a villa for residential purposes under the scheme will allow foreigners to reside in Mauritius as long as they hold the property.

The course is an Ernie Els-designed 18-hole, par 72 championship layout measuring 6828 metres, which includes a putting and chipping green and a 320-metre driving range. The club also incorporates a high tech golfing academy with 60 fully equipped GPS golf carts and the clubhouse includes a 90-seat restaurant, pro

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shop and fitness centre that overlooks the 18th green and Mauritian coastline.

The golf course stretches over six kilometres along the coastline, including six holes with ocean views. There are 13 parcels of land planned for development throughout the Anahita site all of which are set along the perimeters of the golf course. Two of these have been sold and are under construction with a third starting construction shortly.

The 213-hectare site was formerly owned by a Mauritian family and used as an intensive deer farm. Other previous uses for the site included the selling of fence poles carved out of the Eucalyptus spp. forest which is still found today densely separating holes 11 through 15.

Beyond the property and found throughout the island is sugar cane which is still the major commodity for Mauritius. Tourism is definitely being targeted as one of the country's main income earners, even more so now with the introduction of the IRS and the possibility of future developments. Another four golf courses are in the pipeline which, if developed, may turn Mauritius into a major golfing destination in the years to come.

The property owners employed a project management company from South Africa to oversee all works carried out. Ernie Els Design rough shaped the course and also had a construction coordinator on site during the construction phase. A South African and Mauritian golf course and construction company then carried out all the final construction works and shaping.

My role with Four Seasons is to manage the golf course, including the landscaping for ownership, once construction has been



**The par 3 8th is just one of a number of holes which have spectacular views of the Indian Ocean**

complete. When a section of the course was constructed, it was my role to assess the workmanship separately from the project managers and Ernie Els Design and then start takeover of operations from the contractors once the work had been passed for practical completion.

In the first months after arriving I was busy compiling a complete list of workshop tools and golf course machinery. Walking the course in full blown construction was quite difficult when trying to get a feel for what machinery should be purchased. The solution to this was talking to the Ernie Els Design team and the agronomist to find out how the course was originally designed to be played and then to match the machinery to the desired outcome.

Once the machinery list was approved, meeting the many suppliers then followed. Trying to find out whom and how things would arrive on the island for the best possible price, while trying to orchestrate this in conjunction with how the course was developing knowing that delivery would take up to 12 weeks, it was a very stressful, frustrating yet rewarding time.

Our fleet of machinery, delivered on time, consists mainly of Toro machines. All the spare parts for the machines were forecasted a year

in advance and purchased prior to assist with lowering the costs on delivery freight charges.

I have also designed the internal set up of the maintenance facility getting quotations for all the office furniture, fittings, equipment, lockers, storage shelving etc as well as organising all safety equipment.

During this period Four Seasons sent the director of human resources from Singapore to train me on the Four Seasons staff recruitment method. This was a great learning curve and it gave me the tools to ask the right questions, probe for the answers and hopefully find the correct person to suit the position. After interviewing over 300 applicants for 46 positions, many through translation, I finished up with plenty of experience and a lot of patience.

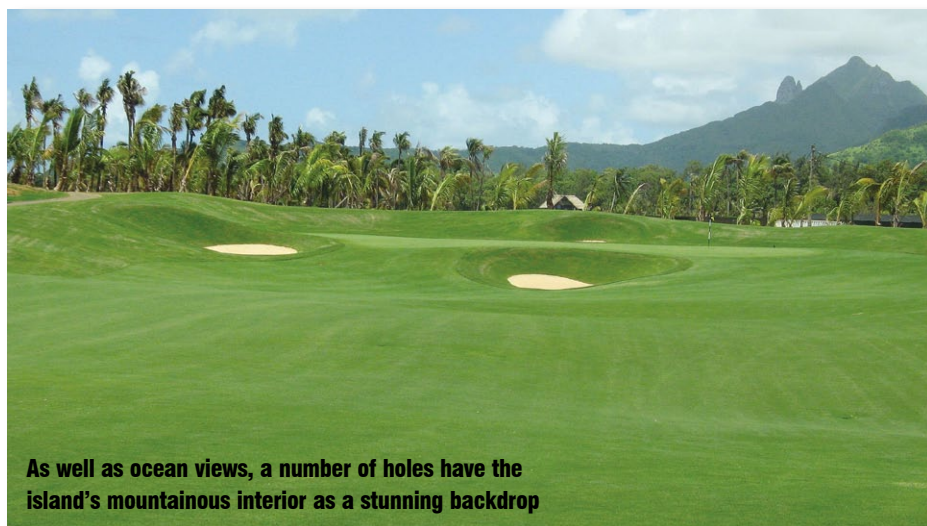
## COURSE CONSTRUCTION

The entire course has been shaped with the native soil excavated on site and spread to a variant depth. This native soil has then been capped with 0.6mm inert crushed basalt rock and spread on the fairways and roughs to a depth of 150mm.

The greens have been built with a 90/10 inert crushed basalt rock and coco peat mix to a sand specification of 0.1mm and spread to a depth of 300mm over a 100mm layer of 4-6mm gravel with flat pipe drainage installed below. The tees have the 0.1mm inert crushed basalt rock spread to a depth of about 150mm over the native soil sub-base which has a one per cent fall to a centre drainage line.

The water used on site is fairly pure – low in salts, slightly high in bicarbonate and with a near neutral pH. The irrigation system is Rain Bird and we are lucky enough to have three 2500-litre fertigation units that we have just started to experiment with.

Turf varieties are Tifdwarf on the greens, Tifway 419 on tees, fairways and roughs, and in the landscape areas completely separated



**As well as ocean views, a number of holes have the island's mountainous interior as a stunning backdrop**



from the course is a mixture of buffalo (*Stenotaphrum secundatum*) and African stargrass (*Cynodon nlemfuensis*).

My transition from working on bentgrass in Sydney to Tifdwarf greens here in Mauritius has been very enjoyable. I've really liked experimenting with this grass to see how it responds to different management techniques and my bowling greenkeeping background has definitely helped in this regard.

On the greens we have settled on a programme of weekly grooming, set at even heights, lightly foliar feeding and dusting every three weeks, weather permitting. We are currently cutting the greens daily with walkers set at 3.5mm and now that we have full coverage we have started to experiment with Primo Maxx (trinexapac-ethyl) at different rates. These applications have definitely pulled back the growth giving us a reduced amount of clippings, tightened up the playing surface and has ensured that the greens play consistently throughout the day. We roll the greens three times a week and so far they are responding and playing very well with these practices.

**The transition from working on bentgrass greens at Royal Sydney to Tifdwarf greens at Four Seasons has been an enjoyable challenge for Puckeridge**



The greens are perched up and convex to shed excess water and have subtle movement. The greens surrounds are steep and mown low, so if you miss the green you have a very tricky recovery shot. There are five sets of tees on each hole cut square with walk-behind mowers every second day which are set at a present height of 11mm. These mowers also cut a single apron around the greens.

The fairways are presently cut at 15mm and everywhere else is mown to a rough height

of 51mm which is pleasant for resort play. I am looking forward to our first major renovation where we can further improve the playing surfaces and decrease cutting heights.

Disease pressures on the course have been quite minimal in comparison to working on bentgrass at Royal Sydney. Insect damage has been my biggest problem with sod webworm and cutworm being the major pests, while crabgrass and euphorbia are the major weeds we have to contend with.

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**Spot the Aussie! Puckeridge has a hand-picked staff of 46 at Four Seasons**

The purchasing of pesticides here at times can be quite frustrating. You have enough selection to get by, but it is limited compared to what is available in Australia. Sadly, some of the latest pesticides have not been passed for use by the local authorities here but hopefully this will change over time.

Several things that you get plenty of practice at here include searching for available pesticide products and working out rates that are applicable for turf, and forecasting your maintenance, watering and fertiliser requirements six months in advance because of the need to have everything shipped in.

## UNIQUE CHALLENGES

To play the course is a real experience. The fairways are wide and you feel that there is plenty of space to land your ball. Adding to the challenge are the 73 bunkers strategically placed around the course, all deep with very steep grassed faces. The course takes you on a journey – one minute you are facing breathtaking views of the mountains and the next you are overlooking the Indian Ocean.

Along the way there are various plant types such as palms, Bauhinia, Casuarina and Eucalypts with a common dry rock wall theme found throughout. The three finishing holes, in particular, are spectacular and head back along the coastline to the Mauritian-style thatched roof clubhouse.

Each morning I address the staff on current issues and works to be carried out. About 70 per cent of my staff do not speak or understand English therefore my assistant Kiran Greedarry has become a very good translator. My management team and key personnel all speak and understand English and they relay all my intended messages onto the rest of the staff.

Looking back, I have many funny stories of how things get lost in translation. When you are working at a new site and trying to get set

up you don't always have available certain tools to carry out particular jobs and you really have to think outside the square to get the job done.

I remember one particular time when we were fertilising the 10th fairway for the first time with our new Vicon spreader. We had no marking stakes available to ensure that we received an even application so I decided to get two staff members and stand them at either end of the fairway, up wind of course.

I explained to the Vicon operator that I wanted him to drive down the fairway and throw the fertiliser back to where the staff member was standing. I told the staff member that when the operator got close, to run out of the way so as not to get hit with any fertiliser.

Following these instructions the Vicon operator took off down the fairway towards his colleague, then all of a sudden starts heading straight for him. To my astonishment his colleague ran off down the fairway a good 80 metres with the Vicon operator hot on his heels! It wasn't until my uncontrollable shouting and waving caught their attention that they both decided to stop. It would have been pretty funny to see how long this application method would have gone on for, but then again I couldn't afford to waste the fertiliser.

As you can imagine, the challenges that face you when working abroad in comparison to Australia are completely different. Primarily, I

have learnt to have a lot more patience. When I was back home I took for granted having every available resource at your fingertips and simply giving out instructions to staff was much easier when everyone could speak your language.

Working with completely inexperienced and unskilled staff members at first was very daunting, but over time with constant training and supervision it gets easier and everyone, no matter who they are, has something positive to contribute.

People may wonder does environmental management or OH&S change when you work abroad. My answer to this would be no and nor should it. All I've done is taken the years of training from Australia and Royal Sydney and adopted them here.

Basically it's all about showing duty of care and not putting the environment or your fellow worker at risk. As an aside we and several other Four Seasons-operated courses are preparing to embark on the implementation of the e-par system, which should be a great experience for all involved.

I think the skills I've learnt since taking on this position have been invaluable for my personal growth. To now know that you can combine all different aspects needed to successfully open and run a golf course from the beginning, and knowing that every decision you make is riding on your shoulders, gives you much more confidence to approach the next problem that faces you.

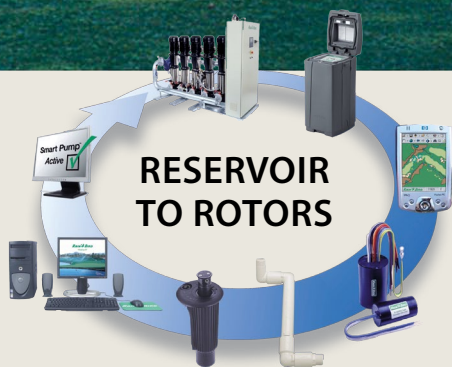
The course continues to progress well and is improving daily. We took over from the contractors at different stages, first starting on 29 October, 2007 and we successfully had our soft opening recently on 8 March, 2008. I was very pleased with what we had achieved in such a short period of time, but by no means is the course complete and we are now focused on getting the course up for its official opening in October 2008. 🌊



**Wish you were here? The 4th green at Four Seasons**



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In September 2007, The Grange Golf Club superintendent Richard James was hand-picked by Toro to attend its Turf Professionals Meeting in the USA. After spending a week touring Toro's corporate and manufacturing facilities, James hooked up with fellow delegate and Australian superintendent David Warwick to journey to Georgia and South Carolina where they visited some of the region's finest golf courses.

## Southern style

**E**arly in 2007 I was contacted by Chris Simpson, one of our local Toro irrigation representatives in Adelaide, who offered a wonderful opportunity to travel to the USA and take part in Toro's Turf Professionals Meeting. The meeting brings together a group of 13 superintendents from around the world, giving them the opportunity to meet and talk to Toro senior managers, engineers, manufacturing and test staff, as well as visiting the company's plants.

With the support of the committee and management of The Grange, I gratefully accepted the opportunity, and contacted a fellow Australian delegate, well-known and highly respected Avondale Golf Club superintendent David Warwick. David proceeded to make an already unbelievable trip even more so by offering me a chance to accompany him for a further week visiting courses in Georgia and South Carolina, including of course Augusta National.

After nearly 18 hours in the air, we arrived in Minneapolis a couple of days prior to the meeting. After settling in and meeting up with some of the other delegates, we travelled to a local public golf course called The Wilds for a round of golf. It certainly lived up to its name as it turned on one of the windiest days I think I have ever played golf in.

The Wilds is rated as one of the top public courses in the area and is designed by Tom Weiskoph. It had bentgrass fairways and greens as well as extensive rye roughs and surrounds. The course is covered by 4-6 feet of snow during the winter months, which was quite hard to picture as we played.

The Turf Professionals Meeting kicked off on the evening of 11 September. The meeting brought together a group that consisted of four Australians (one working in Kuwait), a South African (working in Dubai), two English superintendents, a New Zealander (working in Vietnam), as well as superintendents from Germany, Japan, Spain, France and Canada.

On the first full day we visited Toro's Corporate Headquarters in Lyndale, Minneapolis. We toured areas such as industrial design, the agronomic laboratory and the engineering department as well as the extensive test rooms where every imaginable test is carried out on new machines. One of these rooms was lined with cardboard so objects could be introduced to cutting units to measure the direction and velocity of discharge.

The following day we headed to the Toro manufacturing facility in Shakopee. There was some substantial equipment in this plant and parts are tested exhaustively for faults with

state-of-the-art laser technology. Considering the amount of parts manufactured, the minimal waste material generated was astonishing.

Returning to Lyndale we took part in a research and development session on fairway mowers and viewed some more of the prototype turf machinery that the company is developing.

Irrigation was also on the agenda with a field demonstration of some new sprinkler heads and other hardware items, as well as presentations on the improvements that have been made in design and testing of new sprinklers and nozzles.

On Friday we journeyed to Toro's main commercial assembly plant in Tomah, Wisconsin. The plant is massive with countless fabrication and manufacturing lines throughout the building. We saw a great variety of machines being assembled including Workman 3300s, walk-behind greens mowers, triplex mowers, Sidewinders, hydraulic trail gangs, lightweight fairway mowers and large dedicated spray units.

The week ended with the Toro 'Ryder Cup' which was played at another highly rated Minneapolis public golf course, 'The Legends'. Once again it was grassed with cool-season grasses (bent, ryes and fescues) and presented very well. Designed by a local



The stunning second hole at Peachtree Golf Club in Atlanta, Georgia. Peachtree was one of a number of courses in Georgia and South Carolina visited by Australian superintendents Richard James and David Warwick following last year's Toro Turf Professionals meeting

architect it was a very enjoyable course to play despite enduring an early morning frost delay due to the near freezing temperatures.

Being a public golf course, the majority of play is via golf carts. The carts here were all equipped with GPS technology including a menu for the halfway hut which enabled you to order your 'burger and fries' on the 9th tee and pick it up when you walked off the 9th green!

After an enjoyable week of networking and touring Toro's facilities, David and I flew to Atlanta, Georgia where we were met by Bill Fishburne who was to be our guide and chauffeur for the week ahead. Bill was involved in the development of sub-surface aeration units as well as the heating and cooling systems used by a lot of the golf clubs in the area. Being heavily involved in the local industry, Bill was able to facilitate a number of visits to clubs in the area and what follows are some of the more memorable visits.

### RIVERMONT COUNTRY CLUB – ATLANTA, GEORGIA

Rivermont is a family owned and operated golf club that had not long ago completed a rebuild of all the greens and surrounds. The



Rivermont Country Club's unique greenside bunkering

new greens had some very severe contouring on them which seemed to limit pin placements. The course was very heavily treed, with some greens completely sheltered, necessitating the use of large fans to cool the turf during the extreme heat of summer. Such a practice is almost universal throughout all the courses we were to see.

Course superintendent Mark Hoban was previously employed by the Standard Club and was introducing native plantings to his new course with impressive results. An interesting thing that I hadn't seen before was the use of a small woven basket on top of the pin instead of a flag, a traditional practice in some areas.

### CUSCOWILLA GOLF CLUB – EATONTON, GEORGIA

Situated mid-way between Atlanta and Augusta, Cuscowilla Golf Club is a Ben Crenshaw-designed course that was opened in 1997.

The superintendent had sodded in zoysia collars around his Crenshaw bent greens as a buffer to control the 419 Bermuda encroaching into the green surface.

While we didn't see much of the course or talk to the superintendent, Cuscowilla was a wonderfully natural looking course with interesting bunkering. There was a lot of housing surrounding this and other courses that we visited, as there is in Australia.

However, this course was unique from many others in that the colour schemes of the houses matched the surrounding environment. Houses bordering the course were of an 'earthy' colour, matching the colour of the bunker sand which made them less imposing on the visual aspect of the course.

### PEACHTREE GOLF CLUB – ATLANTA, GEORGIA

Designed by Robert Trent Jones and opened

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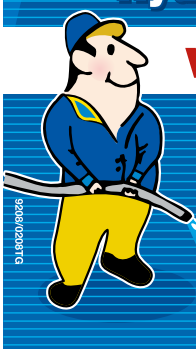
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Houses surrounding Cuscowilla Golf Club in Georgia have the same earthy colour as the bunker sand to blend into the golf course surrounds



◀ in 1948, Peachtree lays claim to be the home of Bobby Jones in his twilight years. It is said that Jones and his friends became frustrated by the slow play at East Lake and founded Peachtree, decreeing that it never be too busy that you couldn't just turn up and get a tee time. That is why they struggle through about 30 rounds of golf per week!

The fairways had recently been re-sodded with zoysia and even though they were presented in superb condition I didn't believe they offered the same quality surface as Santa Ana mown at the same height. Peachtree had A1 greens which were a little thin due to the extreme summer weather conditions that had just been endured. Once again, extensive use of fans to cool greens takes place all summer.

Peachtree is built on a wonderful piece of land, perfectly suited for a golf course and was presented in sensational condition (see main photo pg 24). The dusting regime at Peachtree used kiln-dried sand applied to the greens via a walk-behind spreader on a weekly basis. One thing that stood out was the minimal amount of course furniture. What furniture there was is constructed from natural timbers, which fitted in very well across the course.

The zoysia surrounding the greens is an interesting prospect for the many golf clubs that are looking for an answer to controlling couch encroachment in bentgrass greens. There were areas at Peachtree where very good chemical control of couch in zoysia was

being achieved, giving hope that a collar of zoysia could provide some control.

## AUGUSTA NATIONAL GOLF CLUB – AUGUSTA, GEORGIA

Without doubt one of the highlights of the trip, our visit to Augusta was a wonderful experience where we got to spend two hours with superintendent Brad Owen touring the facilities and golf course. After clearing security and receiving our guest passes, we moved into the maintenance facility, complete with reception area and four receptionists. There was a lot of activity happening throughout the property, with construction of a new practice facility, new tournament entrance gates and general maintenance taking place.

Augusta was closed for play at the time of our visit. They were about to begin overseeding the course with ryegrass, a process that involves scalping the 419 Bermuda surfaces down to dirt and seeding. All of the couch surfaces were maintained at about 25mm over the summer, with no fairway shapes evident. There is no rough at Augusta, rather it is called

'second cut'. All of the bunkers on the course were lined with plastic to prevent contamination of the sand during course closure and to prevent any seed from the oversowing of fairways germinating in the sand.

The A1 greens had one run of sod replaced around the perimeter to control any couch encroachment, with *Poa* control consisting of some minor handweeding and replacement of the green if deemed necessary. There are heating and cooling systems under seven of the greens, with more installations to be carried out in the future. Some ryegrass from the previous year's oversowing was still evident on the collar of the 12th green, which Brad said would not have survived the summer had it not been for the cooling system under the green.

All greens have 'shade tents' erected over them during the heat of summer, which accounts for a 10-12 degree Fahrenheit temperature drop compared to the outside temperature, with the fans surrounding all greens accounting for an additional 10-12 degree drop. As we stood on the rear of the 12th green, which is a lot smaller than it looks on TV, Brad put in a work order to string up a set of hydroponic lights that are used on the back half of the green during winter to assist growth. One extreme to the other!

Groundstaff numbers 38 all year round, which swells to 120 for the Masters. On top of the 38 groundstaff, there is 20 landscape staff under the direction of a landscape superintendent that work from the same facility and is responsible for the lawns and gardens throughout the property. Augusta has its own



Augusta National's 12th green in autumn mode. All bunkers are covered by plastic lining to prevent sand being contaminated during the oversowing process



laboratory to carry out disease diagnosis and a variety of other tests, and has extensive weather monitoring equipment including lightning detection. All of the major trees have lightning protection, consisting of a cable that runs to earth along the height of the tree.

We certainly experienced golf course maintenance at a different level at Augusta National. Not many golf clubs would install Subair aeration throughout their spectator crosswalks to keep them as pristine as the fairway surfaces during tournaments, however, Brad did point out that like every club he had to work to a budget.

### CHAMPIONS RETREAT – AUGUSTA, GEORGIA

Champions Retreat is a 27-hole facility just outside of Augusta, with nine holes designed by Arnold Palmer (The Island Nine), nine holes by Jack Nicklaus (The Bluff Course) and nine holes by Gary Player (The Creek Course).

Coming from Augusta National to this course was an experience as we drove into what will remain the worst golf course maintenance facility I am likely to see. The staff have been operating out of a series of temporary structures and dilapidated farm buildings while the owner decides where he wants to build a permanent structure.

Considering the state of the sheds, the superintendent and his staff were doing a wonderful job to present such well conditioned golf courses. The 419 Bermuda fairways, tees and green surrounds were in great condition, while the A1 greens were recovering from a hot and humid summer.

Making matters worse was the fact that the greens were originally Tifeagle, which were simply sprayed out and oversown with bentgrass in an attempt to achieve bent putting greens. Understandably this has created a massive headache for staff trying to control ever increasing couch populations in the greens.

### SAGE VALLEY GOLF CLUB – GRANITEVILLE, SOUTH CAROLINA

Sage Valley is an 18-hole private and exclusive golf course with a three-hole practice facility designed by Tom Fazio. Opened in 2001, it is rumored that the owner became frustrated by his unsuccessful attempts to join Augusta National so got together investors and built his own 'Augusta'.

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**The Creek Club in Georgia makes full use of the natural undulations to produce a spectacular layout**

There are only about 200 members with playing rights at Sage Valley, which is a very impressive golf course consisting of 419 Bermuda fairways, 328 tees and surrounds and A1 greens, which had only just been scarified. Staff were busy oversowing the entire course at the time of our visit, making the most of the four-week annual course closure.

A massive maintenance facility full of brand new Jacobsen machinery greeted us on our arrival. The club turns over \$US1million of turf equipment annually under a lease agreement, and seemed to have more equipment than the full-time staff of 22 could use. Fairways were mown with triplex greens mowers, and all rough, a la Augusta, was 'second cut' kept trim with Tri-king cylinder mowers.

### **PALMETTO GOLF CLUB – AIKEN, SOUTH CAROLINA**

Palmetto Golf Club, established in 1892, is one of the oldest operating golf clubs in the USA still in its original location. Starting as a course with sand greens, Dr Alistair McKenzie is credited with the original layout of the first grass greens on the course in 1932, around the same time that he was finishing at Augusta National. It is a private club with a wonderful

clubhouse that is full of character and exactly what you'd expect to see in the South.

The club had just finished rebuilding all of the greens and bunkers on the course, resodding greens in Bermuda. The bunkering was fantastic, with the superintendent sourcing as many old photos, sketches and plans of the course as he could to use as a base for the reshaping and positioning of the new bunkers. There were some quirks in the layout of the course that were maintained during the rebuild, including playing your tee shot on a hole directly over the previous green.

### **AUGUSTA COUNTRY CLUB – AUGUSTA, GEORGIA**

Situated next to Augusta National, Augusta Country Club is a Donald Ross design that maintains a lot of original Ross features including square style bunkering with steep grass faces. Many greens were also square with distinct plateaus offering pin spots and one famous 'punchbowl' green where all sides feed into the middle of about 5-6 feet.

The course has 419 Bermuda fairways and bentgrass greens and collars, with couch encroachment an issue. As with all of the courses we saw throughout the USA, tees

were square. There were also mown straight lines from tee to fairway through the carry, commonly known as 'pig trails', which did not add to the look of the course. On the whole this was a very nice course, with some very attractive holes.

### **THE CREEK CLUB – GREENSBORO, GEORGIA**

On the final day of our trip, we were looking for a couple of courses to visit to fill in some time before our departure. Bill mentioned a club on the way to Atlanta and proceeded to ring the superintendent to make a time to see him. After getting the okay we drove through the area to see what we could see from the road. It turned out to be one of the most amazing courses that I think I will ever see.

Designed by American architect Jim Engh, The Creek Club is a course with some amazing undulations that really have to be seen to be believed. It is situated on a property known as Reynolds Plantation, which houses five golf courses designed by such architects as Fazio, Nicklaus and Rees Jones.

The Creek Club makes the most of natural undulations, creeks and ravines throughout the course to create a visually spectacular layout. The zoysia fairways are surrounded by couch roughs to create wonderful definition that blends in with the natural undulations. It is a course that you could play 100 times over and not have the same shot twice, even more so on the 18th where you could find yourself playing to one of three greens constructed for the hole.

### **ACKNOWLEDGEMENTS**

*I would like to thank the committee and management of The Grange Golf Club and Toro for the chance to participate in such an educational and enjoyable trip. Also to David Warwick for inviting me to join him in visiting some incredible golf courses, and to Bill Fishburne who without his organisation and generosity we would never have seen so many fine golf establishments. 🙏*



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# Graduating with honours

**J**ust wait until you get to summer and start aerifying. You won't believe it. Every Monday you'll be punching holes in something."

After witnessing my first renovation at The Breakers Ocean Course in Palm Beach, Florida, I knew those words from fellow Aussie and former Breakers intern Stuart Smith were no exaggeration. In a single day I had seen all greens and tees cored (by side ejects), cleaned off by hand, topdressed, dragged off, double rolled, dragged off again, fertilised and watered in. Fairways were sliced and high traffic areas in the rough had also been cored. The manpower involved and the level of organisation required were beyond anything else I had experienced before.

Then the superintendent informed me that the following day they would go back and run solid tines over the greens and give them another roll! It was clear that every day would bring new experiences and information. Not for the first time the thought crossed my mind, "How did I end up here?"

The answer to that began in Brisbane on the Monday of the 2006 Australian Turfgrass

**In 2006, Yamba Golf Club's Sean Kinsley created a little slice of AGCSA history by becoming the oldest recipient of the Graduate of the Year Award. The award literally opened up the turf management world to the aspiring greenkeeper who went on to spend a year living and working abroad in the United States.**

Conference. I had been lucky enough to win the Graduate of the Year Award, sponsored by Toro Australia, and shortly after collecting the award Cameron Russell informed me that I had won an eight-week all expenses paid trip to the USA where I would attend the Winter School for Turf Managers at the University of Massachusetts.

Later that day I visited the trade exhibition floor and met with Mike O'Keeffe, programme manager of the Ohio State Program. I figured that if I was headed to the US why not extend the trip to include some practical hands-on experience of American turf management practices to go along with the theory?

The next several months became a blur of emails, forms, visa interviews and travel and accommodation arrangements. In December 2006 I completed my apprenticeship at Yamba Golf and Country Club under superintendent Andrew Smith, said goodbye to friends and family and flew out to America and whatever adventures lay ahead.

## UMASS WINTER SCHOOL

I arrived at Amherst, Massachusetts and was surprised to find clear sunshine and no snow on the ground. Where was the brutal New England winter I had heard so much about? A few days later I found out. Temperatures



**The Breakers Resort in Florida would be home for Sean Kinsley during his Ohio State Program placement. Pictured is the 8th green complex on the Rees Jones Course**

dropped to around -5 degrees C (the daily maximum!) and snow storms moved in. Suddenly the north coast of NSW seemed a long way away.

For the next seven weeks I attended classes at the Winter School for Turf Managers. The school has been running for over 75 years and is quite highly regarded within the US turf industry. It is scheduled for that time of the year in the north east when supers, assistants, and other senior personnel can get away from their snow-bound courses and take in some vocational training.

The workload was intense, with classes running from 8am to 5pm five days a week. Lectures covered a wide range of topics: turfgrass management, soil science, pest and disease control, turf nutrition, weed management, irrigation, drainage, turfgrass calculations, tree management, personnel and finance, and golf course design.

Regional agronomists with the USGA and several golf course superintendents also appeared to give guest seminars and workshops. Assignments and exams were a continual part of the programme and every day you faced a quiz or two, not all of them announced in advance.

The material was very interesting and while some of it was new to me (I had not come across the need for snow mould control at Yamba for example) I found that my TAFE courses back home stood up quite well.



**As well as attending the University of Massachusetts Winter School for Turf Managers, Kinsley also had the opportunity to visit Toro's American irrigation headquarters**

The most rewarding thing was undoubtedly the friendships made and listening to stories about golf course management from people with backgrounds so different from mine. Most students came from the New England states but there were also students from England, Slovenia, Canada and the Czech Republic.

My best moment came late one afternoon during a seminar on fertiliser trials. The lecturer had a slide on show featuring his pocket knife stuck in the ground for scale. Drawing on my best Hoges accent I drawled, "That's not a knife!" Mayhem ensued, and I at least ensured that the class remained awake for the remainder of the session.

## THE BREAKERS OF PALM BEACH

Once the winter school concluded in late February and following completion of my orientation at the Ohio State University (OSU) campus in Columbus, Ohio (the university football stadium holds more people than the MCG!), I made my way to Florida to take up

my placement with The Breakers Hotel and Resort.

The Breakers is a high end resort facility located in Palm Beach, Florida. Established in 1896, it is one of America's legendary resort destinations. With around 2300 full time staff (speaking over 56 different languages) it offers around 560 guestrooms, a luxury spa and fitness centre, a beach club with four pools and a half mile private beach, 10 tennis courts, eight restaurants, and on site retail boutiques. It is also home to two 18-hole championship golf courses.

The Ocean Course (located on-site at the hotel) is Florida's oldest 18-hole golf course, redesigned by Brian Silva in 2000. The Breakers Rees Jones Course was reconstructed in 2004 to a design by the renowned architect. At 7100 yards, par 72, it is the more demanding of the two layouts and is located 10 miles west of the main hotel in the gated Breakers West residential development in West Palm Beach. It would be the site on which nearly all of

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**Following his internship at The Breakers, Kinsley attended the three-day Ohio State University short course held at The Sea Pines Resort in South Carolina**



my internship would occur. Both courses run Tifway 419 fairways and roughs, with Tifeagle greens. The Rees Jones course features seashore paspalum on its tees.

Head golf course superintendent Mark Reid oversees both courses (he will be known to some readers as the son of retired Victorian superintendent Billy Reid) and passed through the OSU programme himself some 12 years ago. Under he and Rees Jones superintendent Brad Nelson, I was about to get my first taste of American turf management practices.

Arriving in March meant that my internship began just as the golf season in Florida was beginning to wind down. As summer approaches most members return north to escape the heat and humidity, leaving the golf courses in the area relatively empty. My first few weeks were spent familiarising myself with the course and crew (25 full-time with 10 or

so casuals added during the busiest time of the summer) and learning the ropes in terms of both my basic duties as an equipment operator and observing how daily and weekly cultural programmes were organised.

Greens were dusted (by walk-behind rotary spreaders) and foliar fed (by spray hawk) on a weekly basis, with a granular application of slightly slower release nutrients applied every three weeks or so. Total greens nitrogen applied over the year was in the order of 8-8.5 lbs of N per 1000ft.sq. Other superintendents in the area ran as low as six, some as high as 12-13. This might be considered a bit high by Australian standards but reflects budgetary levels, golfer expectations, rainfall patterns and fungicide use in that part of the world.

Greens and tees were walk mown with a brush attachment used on the Tifeagle two to three times mid-week (any more than this

tended to thin out the sward excessively along the larger ridgelines on the greens). Triplex units were used on approaches and only ever ventured onto the tees and greens for verticutting operations. I very quickly noticed how much difference all of this effort to keep heavy machinery off the finer surfaces made. One benefit of having adequate manpower I suppose.

Greens irrigation was somewhat different to what I had seen before in that they received several cycles of 3-4 minutes each on Sunday and Monday nights with one small cycle on Tuesday to follow the spray hawk application (longer cycles only tended to run off the surface). From this point on no greenside rotors would spin for the rest of the week.

By Thursday afternoon one or two guys would begin hand watering hotspots and this would continue right through the weekend in



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order to stretch root growth as far as possible. Of course as summer approached and soil temperatures rose we would strike the limits of this and have to resort to several irrigation events per week.

This was also the first time that I had worked with seashore paspalum and it proved to be an interesting experience. It is an attractive surface and one that can survive on relatively low levels of nutrition with good resistance to disease and tolerance of poor quality water.

But like all grasses it has its issues. It was certainly an aggressive grass and we had significant problems with it escaping into the 419. Many superintendents in the area will tell you that they will only use it on a course if they can go wall-to-wall with it as a surface. Much is also made of its drought tolerance, and while this is true to an extent I noticed that once the grass slips over the edge into either heat or drought dormancy it is very slow to recover thereafter. Only a rainfall event seems to wake it back up with regular irrigation events having only limited effect.

By May the golf course began to quieten down and we began an intensive programme of aerification. I was about to discover how true my good mate (and former Breakers intern) Stuart Smith's earlier words were going to be.

Every Monday during summer the Rees Jones Course would close and extensive renovation and project work would take place. This is really the only time of year when this is possible. With players paying over \$US200 for a round of golf in the peak season no serious aerification is tolerated by the members at that time. Only Hydroject operations are possible through the winter.

In summer greens would be cored on a Monday (by Toro 648 walk-behinds with 3/8 side eject tines), with tees receiving the same treatment the following week. All clean up work was done by hand with surfaces topdressed, dragged, rolled and fertilised all in the one day. The following week would see approaches scarified and topdressed. Maybe the next week the course would get a rest, but after that the whole process would begin again and continue on right through to early October.

Fairways were sliced by Aerways twice during the summer and cored and topdressed once (one extra operation was cancelled due to drought conditions). Other minor renovations such as a pencil quadline operation on greens were conducted as Mark and Brad saw fit. ►



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**Before heading home Kinsley was able to visit two of the world's most famous courses - Pebble Beach (pictured) and Cypress Point**

During the summer I was also involved in a variety of other project work ranging from irrigation installations and extensive drainage additions to planting over 300 trees and bunker restoration. All of this in addition to the basic set up of the course for play six days a week.

In August I attended the basic operator's course for the Toro Site Pro system and then toward the end of my time with The Breakers I was asked to write a new irrigation programme for the Rees Jones Course which was successfully brought into operation during my final month.

## OHIO PROGRAM SHORT COURSE

In early November both fellow Breakers intern Ashley Byham (formerly assistant superintendent at Cobram Barooga Golf Club) and myself attended the three-day OSU short course held at The Sea Pines Resort on Hilton Head Island, South Carolina.

The resort is home to Harbour Town Golf Links, one of the PGA Tour stops each year. Days were spent listening to lectures by selected OSU teaching staff and invited superintendents. And the nights? Well as any programme participant will tell you, what happens at the short course stays at the short course!

Needless to say great friendships were formed as we caught up with other interns from all over the US and swapped our stories. One highlight was the early morning tour of Harbour Town Golf Links where we walked several holes with course superintendent Gary Snyder and his assistant listening to some of the challenges that they face on site. It was great hearing first hand an insider's account of what goes on behind the scenes of staging a major PGA Tour event.

Yet again Mike O'Keeffe and his OSU crew showed their professionalism in the staging of an informative, entertaining and smoothly run event.

## RIVERSIDE, PEBBLE BEACH AND CYPRESS POINT

In December, and with my visa fast running out, I sadly said goodbye to my friends and colleagues at The Breakers. It was an unbelievable experience from the first day to the last and once again proves how fantastic an industry this is to have such quality people involved in it. But internships must come to an end and I boarded my flight in West Palm Beach and headed for a final week in California.

My first stop on the west coast was a visit to and tour of Toro's American irrigation headquarters in Riverside just west of Los Angeles. Here I met with Alfredo Romero and Kenny James (who is a regular visitor to our national conferences) and was shown around the factory to see what goes on in terms of research, design, and testing of new irrigation products before we see them released onto the market.

The creation of the moulds by which all parts are subsequently made was a real eye opener. I witnessed the use of a laser injection moulding unit that can cut stainless steel to a tolerance of 1/60th the width of a human hair! Seeing the history of irrigation equipment over the last 50 or so years made me realise how far we have come and listening to what developments and improvements Toro have in line for the future gave me an indication of how far we have to go.

Following a day's sightseeing around LA I grabbed a rental and headed up the stunning

US Highway 1 coastal drive 500 miles north to the Monterey Peninsula. Here I met with another Ohio intern Adam Strachan, from Perth, who is working at Pebble Beach.

The Peninsula is famous for its beauty and any who have visited it will not disagree with that verdict. Adam showed me around the famous links and had arranged what would be for me one of the highlights of my entire trip - a tour of the legendary Cypress Point, rated number two in the world.

The contrast between the two courses was interesting. Both sit on absolutely stunning properties and are world class facilities with the resources to match. But Pebble Beach (a public resort) plays host to over 80,000 rounds a year whereas Cypress Point (being ultra private) would be lucky to do 15,000 per year.

The differences in condition were stark. It is fair to say that Pebble Beach is in a state of permanent damage control, doing an impressive job of managing very high levels of stress, whereas on the perfect early winter afternoon that I visited Cypress I saw five club caddies playing the course without another soul in sight. Understandably it was in immaculate condition.

And that was that; the end of an incredible 18 month period full of memories that will last a lifetime. So many people contributed to my journey and I am indebted to their help and hospitality. Thanks to Cameron Russell and Jade Gardner at Toro, and to Mike O'Keeffe and all of his office at OSU. The OSU programme is truly a life-changing experience and one that I would urge all young Australian greenkeepers to consider.

To Andrew Smith and all the boys at Yamba Golf Club, where it all began, I thank them for the opportunity they gave me, and to Mark Reid, Brad Nelson, Stuart, Joe, Ashley, Alan, Barry, and all the rest of the team at The Breakers. You should all be proud of what you do on a daily basis and I am proud to have been associated with such quality teams.

**Editor's Note:** Since compiling this article for ATM, Sean Kinsley has been appointed by Troon Golf at the recently opened Settlers Run Golf Course in Melbourne's south east. 🇺🇸





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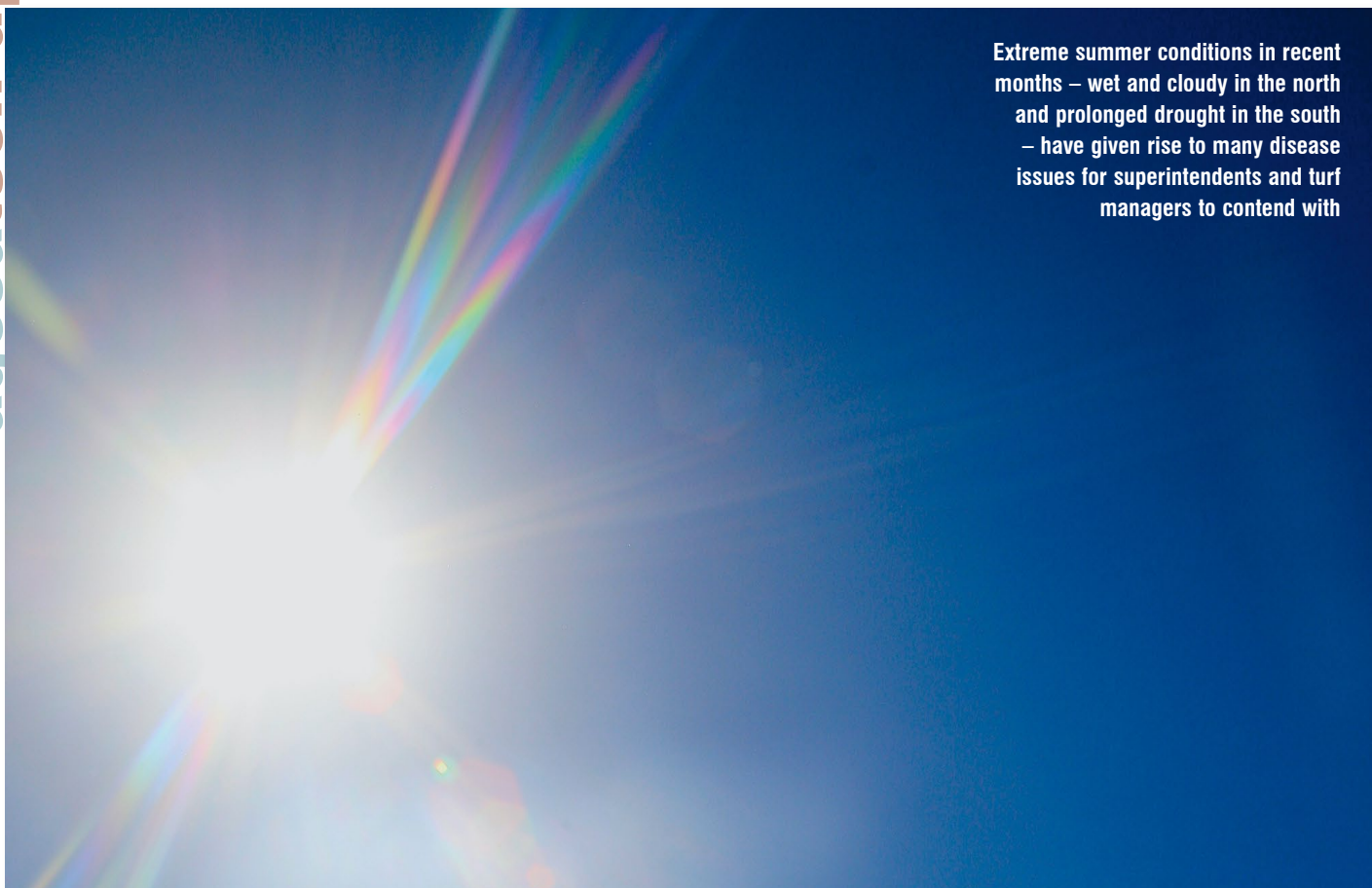
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BY JOHN NEYLAN



Extreme summer conditions in recent months – wet and cloudy in the north and prolonged drought in the south – have given rise to many disease issues for superintendents and turf managers to contend with

Summer conditions throughout Australia have been somewhat extreme this year with the big wet in the north and continuing dry conditions in the south. Heavy cloud cover, low light, high humidity and wet conditions from Sydney northwards have given rise to increased turf stresses as has the very dry conditions in Victoria and South Australia.

Turf under stress is always more susceptible to disease outbreaks. Fungal pathogens are always present on the plant and in the soil and when conditions are not favourable to the turf species, but are conducive to fungal pathogens, this can often give rise to disease outbreaks which can be difficult to control.

Disease samples that have come to AGCSATech over the summer months have involved disease complexes rather than a single pathogen. In some situations it is difficult to isolate the primary pathogen from those pathogens that are present because the plant has been damaged or weakened by the initial fungal infection. The challenge then becomes how to treat the symptoms and to gain effective (and quick) control.

We have experienced a significant increase in root diseases as the primary cause with leaf

**The extreme weather conditions of the past summer have provided plenty of challenges for superintendents and turf managers. In this AGCSATech Update John Neylan looks at summer disease issues as well as looks at the progress of the warm-season turf trials at Redlands Research Station in Queensland.**

diseases as a secondary infection. The main root diseases detected have been *Rhizoctonia* sp., *Gaeumannomyces* sp. and *Pythium* sp. with leaf-infecting pathogens such as *Drechslera* sp., *Curvularia* sp. and *Colletotrichum* sp. (Anthracnose) as secondary infections.

The challenge with the control strategy is

to firstly figure out the main disease organism and treat it, followed by a treatment for the secondary pathogens. Because of either the specific activity of fungicides or where they need to be placed (e.g. roots or leaves) often means that one fungicide will not control all.

In addition to fungicide applications it is also important to determine the factors that favour the disease organism. While climatic conditions are the obvious, this is often only the trigger for the disease to gain a hold. Thatch, soil compaction, water quality, shade, poor air movement and nutrition all need to be assessed to assist in prevention and for long-term control.

The other factor complicating the occurrence and control of diseases has been the presence of parasitic nematodes. In many of the samples examined, nematodes have been a factor with extremely high numbers recorded.

For example, at two sites Sting (*Ipioborta* sp.) nematodes were at 700 and 1000/200ml soil respectively where the treatable threshold is 20/200ml soil. At another site Stunt (*Tylenchorhynchus* sp.) nematodes were at 2800/200ml soil compared to the threshold of 200/200ml soil. Parasitic nematodes damage





**Summer conditions have seen a significant increase in root diseases as the primary cause with leaf diseases as a secondary infection**

the root system and increase the susceptibility of the plant to fungal pathogens.

The combination of fungal pathogens and nematodes can have a synergistic effect. This means that the level of turf stress and damage is a magnitude greater than the additive effects of each factor. It is relatively common to be treating the disease symptoms with fungicides and only achieving partial control. It is not until the nematodes are controlled that the disease symptoms are eliminated.

Given the long-term dry conditions in southern Australia, the effects of salt and sodium accumulation should not be underestimated. This compounds the plant stresses, increases the incidence of disease and reduces the recovery potential.

As well as a fungicide programme it is also recommended to consider mini-tyning or needle tyning, gypsum applications and heavy irrigations to leach salts from the upper rootzone as a holistic treatment program.

## WARM-SEASON GRASS TRIALS

The warm-season grass (hybrid couchgrass and seashore paspalum) trials at QDPIF, Redlands are progressing well with all the subplot treatments having been imposed



over the past few months. Each turf type is subjected to two cutting heights (2.7mm and 3.5mm), three nitrogen treatments (1, 2 and 4kg N/100m<sup>2</sup>/yr) and with and without rolling.

Most of the hybrid couchgrasses have suffered to some degree with the wet and cloudy weather over the summer months. The weather conditions have caused some turf thinning across all treatments and recovery from early season renovations have been impeded.

Our observations of the hybrid couchgrasses were that the highest quality turf was at the higher cutting height and the

highest nitrogen rate. This observation is consistent with those made on golf courses using the new hybrids on putting greens.

The weather had a similar effect on the seashore paspalum, though some cultivar/sub-treatments have scalped worse than others. It would appear that the seashore paspalums (and the hybrid couchgrasses) are reacting to the low light conditions (due to cloud) which is stimulating vertical growth that is scalped under mowing.

The best of the seashore paspalum treatments are at the lower cutting height (2.7mm) and the high rate of nitrogen. Again these observations are consistent with field observations of seashore paspalum greens in tropical South East Asia. It is also interesting to note the different requirements of the couchgrass hybrids and the seashore paspalums in relation to optimum cutting heights.

## SOIL AND PLANT TISSUE TESTING

The Australian summer has been again somewhat unpredictable with tropical rains and a true wet season in the north, wet and cool in NSW and continuing dry in the south. In fact throughout South Australia and Victoria the early autumn was marked by temperatures in the high 30's and extremely dry.

Whether it is drought, irrigation with high salinity water or leaching due to high rainfall



**The warm-season trial plots at Redlands (seashore paspalum in the centre and hybrid couchgrass to the far right)**





**Deakin Reserve in Shepparton, VIC hosted an NAB Challenge match between Hawthorn and Collingwood**

To get the best benefits from soil and plant testing, the results must be equated with turf health. If the pH is 5 and the turf is healthy, does lime have to be applied? The answer is no! What the soil test does is to provide you with a useful piece of information if the turf lacks vigour, doesn't respond to fertilisers or has a persistent disease.

### AFL PRE-SEASON VENUES

As has been the tradition over the past few years, the AFL again played many of its NAB Challenge matches at regional venues. These games provide a great opportunity for the local community to experience AFL football close at hand and the opportunity to produce an AFL standard playing surface.

With games played in Albany, Alice Springs, Bendigo, Shepparton, Narrandera and Noarlunga, the local turfies turned out very high quality playing surfaces. To meet the requirements of AFL clubs, the local turf managers put in a huge effort with renovations, extra cutting, attention to irrigation and monitoring surface hardness.

At a time of the year when the grounds can be dry and hard, all the venues did an exceptional job in providing consistent, high quality surfaces. 🙌

◀ it is time to consider taking soil and plant tissue samples to see where you are at and what needs to be done to redress any nutrient imbalances.

Given the prolonged dry conditions in the southern states it is likely that soil salts and sodium will have increased and there will be a general imbalance in soil cations. On golf course fairways or sportsfields that are constructed from fine textured soils, the breakdown in soil aggregates due to aggregate dispersion caused by sodium will result in reduced permeability.

On sandy soils where permeability is less of a problem, the cation exchange sites become saturated with Na at the expense of Ca, K and Mg and sodium is taken up by the plant in preference to these other cations. Sodium accumulation in the plant can then reach toxic concentrations, resulting in a loss of turf vigour, low recovery potential, lower tolerance to heat stress, reduced tolerance to pests and diseases, and potential death of sodium-sensitive plant species.

Under conditions of very high rainfall, the leaching of nutrients including nitrogen and potassium as well as calcium and phosphorus will occur. This is most prevalent on sandy soils. Soil and plant tissue tests will give a good indication as to the extent of the soil and

plant imbalances and what remedial agents are required.

Soil and plant tissue testing are very good management tools. They should not be used as the absolute method for determining fertility programmes but as a monitoring tool, particularly during periods of adverse conditions (e.g. drought, high rainfall etc.) when imbalances in soil chemistry is most likely to occur. Soil and plant tissue testing has its greatest value in monitoring and problem solving and determining the effects of fertiliser and remediation programmes.



**The Swans and Richmond played their NAB Challenge match at Narrandera Sports Ground, NSW**



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Poorly drained surfaces are generally prone to disease and other stress injuries and have increased susceptibility to compaction and the resultant anaerobic soil conditions

In light of the recent deluges that drenched the northern NSW and Queensland regions, Andrew Peart looks at issues surrounding subsurface drainage for turf surfaces.



With the drought currently impacting many areas of Australia, much has been made in turf management circles about retaining as much water within the soil profile. However, with the major rains experienced in northern NSW and Queensland during the first three months of this year, a more pertinent question could be are those turf managers in the southern states prepared for a possible wet winter?

It is often said that good drainage is the most important aspect in maintaining high quality turf surfaces, although in recent times it is fair to say that a good irrigation system and a sustainable water source have been more the focus.

Poorly drained surfaces are generally prone to disease and other stress injuries and have increased susceptibility to compaction and the resultant anaerobic soil conditions. These situations may have been overshadowed in recent years with relatively dry winters in southern parts of Australia, however, with the ever-increasing use of poor quality water sources, drainage, particularly subsurface drainage, may now be as important as ever.

## ISSUES OF POOR DRAINAGE

Often, poor water movement through the soil profile or even just off the surface is perceived as being related to poor drainage. However, drainage may not be the issue at all. Firstly, if water is ponding or pooling on the surface it could be as a result of a hydrophobic surface, excessive organic matter accumulation, a compacted upper soil profile or, indeed, it may be as a result of poorly drained soils that are already waterlogged.

# Drainage dilemmas

In many cases it may be one of the first three outcomes and there are well documented alternative treatment techniques to combat these effects without having to investigate additional drainage options. Unfortunately, the alternative treatment options usually fall into the maintenance category and for whatever reason, whether it be budgetary constraints, lack of staff or golfing demand, these maintenance operations are not performed nearly regularly enough to limit the occurrence of such problems.

A hydrophobic surface can best be cured through regular wetting agent applications, while dusting can dilute thatch accumulation which is often the major cause of excessive moisture being held in the upper surface layer. A compacted upper soil profile can be relieved through aeration techniques such as mini-tying, coring and/or vertidrainage which create more macro-pores within the soil profile to allow for improved water movement.

## MICRO-CLIMATE IMPLICATIONS

The impact of irrigation uniformity and micro-climates must also be investigated. What might be envisaged as a poorly drained area may just be either receiving more water through poor distribution or alternatively not drying as quickly due to micro-climate implications.

The most common micro-climate issue affecting drying is shade and poor air movement from trees. Ideally, the best remedy would be to remove the offending trees, however, this

is more often than not impractical and other alternatives must be sought. Without the use of fans to dry the surface or systems to extract excess water from the profile, altering the irrigation regime or timing of the water applications may be an alternative, otherwise drainage installation could be required.

As well as micro-climate and irrigation impacting on the drainage ability of a green, fairway or sports surface, the movement of traffic can also have a major effect. Traffic usually results in a compacted upper layer of the profile and a reduction in the percentage of macro-pores that facilitate good drainage. As mentioned, aeration practices can relieve such surfaces by coring and replacing the compacted soil with a sandier growing medium.

Altering the design allowing greater options for the movement of people, or being able to manipulate traffic movement through the use of barricades or markers, will aid in spreading the wear and ultimately improve soil drainage.

## INFERIOR SOIL TYPES

Soils used in construction situations can also be at the centre of drainage issues. Some are simply not suitable and when rainfall exceeds evapotranspiration, irrespective of maintenance inputs they remain wet and turf surfaces can deteriorate.

The usual way to determine the suitability of a soil is through a hydraulic conductivity test. This is usually performed under



laboratory conditions where the soil sample is re-compacted and then saturated before calculating the rate at which water will move through the profile.

This test can also be performed in a field situation but it may not be a true representation of the soil itself but more a representation of the actual situation of water moving through that environment. An in-situ appraisal is often conducted with the grass and thatch layer still being present and without any knowledge of the underlying soil properties.

The presence of the grass and thatch layer will slow the rate of infiltration and if there is a compacted zone, such as a pan below the surface, this could also have a negative effect of the hydraulic conductivity result.

If the overall result shows the soil has an insufficient drainage rate and it is either remaining wet for long periods of time during wet weather, or it is difficult to remove sodium or other contaminants from the profile after an irrigation season, drainage may be an option.

## DRAINAGE

Subsurface drainage unfortunately can never be regarded as a panacea to instantly provide dry firm surfaces after wet weather. A subsurface drainage system is a method for removing excessive water off the playing surface and to a lesser extent within the soil profile after wet weather.

Subsurface drainage is definitely not the only solution to rectify poorly drained areas. Complete reconstruction is another option, however this can be very costly and disruptive and cause different construction types throughout the golf course if only a few areas are poorly drained. Different construction types will lead to different management requirements and may also result in differing playing qualities which ultimately make uniformity difficult to achieve.



**Subsurface drainage can be a viable solution, however, it must be carefully undertaken to ensure a suitable result.**

Subsurface drainage can be a viable solution, however, it must be carefully undertaken to ensure a suitable result. Whenever drainage is installed there must be a viable outlet for the collected water to go. Secondly, the drainage should be installed by an experienced contractor or knowledgeable staff that can ensure drainage trenches are cut at the desired depth and with a constant gradient.

The use of materials, including pipes, gravel and sand must be suitable and correctly installed. It is imperative that the sand and gravel comply with USGA specifications for uniformity, permeability and bridging and that the sand has adequate moisture retention so that the drainage lines do not become too droughty over the summer or drier months.

The backfilling of trenches with sand is arguably the most critical aspect of the whole job to ensure that future subsidence does not occur once the sod is replaced over the drainage lines.

It would be appropriate to sod cut the turf from where the trenches are to be dug prior to drainage works starting. These sods

should preferably contain no soil, however, there may need to be some present so they can have enough strength to be lifted. The soil contained on the sod is likely to be too fine compared with the sand used to backfill the trenches and may cause incompatibility issues when re-laid.

## CONCLUSION

Poor water movement through soil profiles may not simply be an issue of soils having a low hydraulic conductivity. It may be an interaction of a hydrophobic surface, accumulated organic matter or inherent micro-climates.

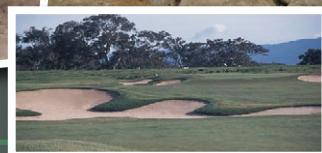
If, however, the soil type is unsatisfactory to provide adequate drainage during periods of wet weather, subsurface drainage is a worthwhile consideration. The depth at which this drainage is installed will be dependent on a number of factors including the depth of the top soil, the natural topography of the area as well as the presence of an acceptable drainage outlet. The quality of the installation and subsequent maintenance of the drainage system will be paramount to the overall success of the operation. 🌱

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## THE PULSE

Education is at the heart of the future development and advancement of any profession. In this edition The Pulse ATM quizzes five turf management education providers on some of the key issues and emerging trends, both positive and negative, to impact on their role and asks whether the quality of students is increasing or declining.

### FRANK DEMPSEY Ryde College



Over the past 28 years I have seen the gradual breakdown of TAFE infrastructure which has coincided with the breakdown of funding. This lack of structure has left a void which is now left

up to individual teaching sections to develop uniform teaching strategies, assessment tools and teaching resources across NSW, as well as carry out their daily duties. The ability of each TAFE college to do this is reflected by and dependent upon having quality teachers.

The squeeze on the education dollar year after year by both federal and state governments continues in 2008. By the time the NSW education dollar is divided up and reaches the individual TAFE colleges and then is divided up again for each college section, there is not much left. This places a great deal of pressure on the turf education section to attempt to deliver the same quality of education despite increased costs with tighter budgets. One common request is to increase trade class sizes which would be a disaster for the increasing number of students needing more and more help from the class teacher.

On the positive side, there is a greater number of greenkeepers taking up higher education in turf management. It is great to see would be managers studying in post trade education at NSI Ryde College and the University of Sydney. This can only be good for the industry. We also have consistent numbers enrol in the trade level course each year and in 2008 we had 30 students enrol in our Certificate IV class. It is rewarding to see this course accepted by students and employers in the turf industry. The education standard of students enrolling in the trade course has dropped over the years. However, there are still some excellent young men and women coming through the college who will make great turf managers. 🌱

### BRUCE DAVIES Canberra Institute of Technology



From an educational perspective, one of the biggest issues currently facing education in turf management is the academic ability of apprentice students, including

the additional support they need to reach quality outcomes. Professional teachers in organisations such as TAFEs spend time working with students to help them gain both industry-relevant knowledge and skills and to improve their literacy and numeracy. At the Canberra Institute of Technology we screen turf apprentices at the beginning of their study to determine if they need numeracy and literacy assistance. In recent years we find increasing numbers do require help, not only with literacy and numeracy but also with feeling comfortable in an educational environment. One of the big challenges for teachers is to meet the needs of students in all these dimensions.

The future in turf education is going to see more computer-based learning. Although this gives the opportunity for more up-to-date information to be readily accessed and allows for interactive learning in many situations, it also means where computer literacy was once seen as an advantage, it is now a necessity.

There is no doubt the licensed trades are a great attraction to young people starting out on a career path. Pay levels for turf apprentices, coupled with early morning starts and weekend work, make turf less attractive. As well as addressing these pay and work conditions on the job, the industry could lift its profile and worth by the introduction of more licensing/certification. This currently occurs in pesticide training and adds to the worth of the turf manager to employers. Introducing this type of licensing/certification into areas like irrigation, OH&S, environmental awareness, machine operation etc. is one way a turf career could be seen as more attractive. 🌱



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## PHIL FORD

### North Melbourne Institute of TAFE



Turf education is in pretty good shape at the moment and I feel the current system is working well to meet the training needs of the Victorian turf industry. My key issue and concern is

that the next review of the training package is going to upset that. While the current training package is pretty ordinary, at least we can work with it. I worry about the outcome of the next lot of 'improvements' to the package and organisations like the AGCSA have a key role in ensuring these are sensible and practical.

I feel that the relevance and quality of TAFE turf training is slowly and steadily improving. It needs to, of course, as the trade is becoming more and more complex each year. TAFE responds well to advice and pressure from the turf industry, so as long as the AGCSA and VGCSA stay involved with us I can see that trend of steady improvement continuing.

Student numbers have been steadily increasing for years, due to the healthy state of the Victorian golf industry. Although the money and promotion prospects are not good, the interesting work and lifestyle still attracts quality entrants. I think it takes too long for a student to complete an apprenticeship (three to four years) and then a Diploma (a further three years). It is possible for a student to shorten this by working part-time at a club and superintendents should look at this as a way to attract good staff.

The quality of students entering the trade now is generally very good compared to 10 or 20 years ago. Most apprentices nowadays have completed Year 12 and usually have reasonable English and maths skills. Similarly, the quality of teachers has improved. We have been able to recruit experienced Diploma-trained staff and the standard of teaching has risen. In saying that though, our resources have deteriorated over the last 10 years. 📉

## BRIAN DALE

### Brisbane North Institute of TAFE



There are a number of issues impacting on Brisbane North Institute of TAFE in relation to the provision of quality turf management training. One issue relates to the funding of turf management qualifications. The preferred pathway for turf training is AQF Level II underpinning the AQF Level III qualification. However, fees and charges now apply to Level II making this pathway less attractive. This has increased pressure on the learning environment of trainees starting their theory education at Level III since they no longer have the knowledge and experience at Level II.

New strategies are required to improve the learning environment for students. One strategy is the use of computers and other technologies such as USB drives. USB drives are being provided in order to deliver learning resources, extension material and assignments thus providing the students with the opportunity to consolidate their classroom learning or extend their own learning experience. Availability of an internet-based learning management system also provides students the opportunity to source other technical information and electronically submit assignments.

Turf management qualifications, Levels II and III, are achieved by completing two areas of learning – college and work based. Within the workplace the role of the trainee's supervisor cannot be understated. The trainee needs to experience the entire range of turf management within their training. The college component supports and develops the knowledge base of the trainee to enhance their skills in the workplace. The State Government offers extra incentives for the employment of people with special needs, however, there also needs to be additional support processes in place, both at college and in the workplace, to achieve a positive outcome for trainees. 📈

## JOHN FORREST

### Challenger TAFE



At present the amount of turf management students is good due to strong apprenticeship numbers. The numbers in the early classes drop off slightly through the three years as income becomes an issue. High employment levels make it difficult to find employees let alone encourage them they should further their education for a minimal increase in pay. Night classes have not run for the past two years where 10 years ago there were between 25 and 40 students keen to complete Certificate II in Turf Management. This year the classes started again, however, the numbers are only just enough to be viable.

Apprentice wages need to move with the times as do tradesman wages. Expectations of golf club members have risen substantially over the past 20 years and in general these have been met. Yet in Western Australia we expect to attract and keep apprentices on a first year hourly rate of \$6.80. The up side of this is that you get young people that are passionate about the trade although the reading and writing skills are often poor.

The quality of the young people we have had over the last few years has increased again although competency based training has reduced the competition to be top of the class as a pass receives a CO (Competent) instead of a mark. In WA we are lucky with the quality of lecturers we have, with all having qualifications in turf management and training.

One of the trends appearing is that many students or employers are looking more for skills sets where attendance is limited to only part of the year with a clear benefit for the workplace. These may be on three or four units such as soils, irrigation, weed control and chemical use improving both theoretical and practical skills. Also delivering courses in the workplace is becoming more popular. 📈

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BY LOUISE BARTON, GEORGE WAN,  
AND TIM COLMER

**A three-year study by the University of Western Australia will investigate the development of water repellency under a sand-based turfgrass system**



# Managing water repellency in turfgrass grown in sandy soils

Throughout Australia, turfgrass producers and managers are under increasing pressure to restrict their water use. Irrigation scheduling based on the replacement of a proportion of net evapotranspiration (ET) is strongly advocated as a means to improving water-use efficiency. However, whilst ET-replacement irrigation can optimise watering regimes it has also been shown to increase the incidence of soil water repellency on sandy-textured soils.

Soil water repellency decreases water use efficiency by causing irrigation water to unevenly infiltrate the soil surface, bypassing a proportion of the turfgrass roots, causing localised areas of turfgrass death. Decreasing the incidence of water repellency in turfgrass systems requires an understanding of the contributing factors and the development of corrective procedures.

Corrective techniques for water repellency include application of a wetting agent, core cultivation, and thorough watering. A number of factors influence the effectiveness of wetting agents, so choosing a wetting agent is not a particularly straight forward process. Furthermore, strategies for optimising the use of wetting agents under Australian turfgrass conditions have not been reported in the scientific literature.

Turfgrass renovation techniques that prevent thatch and mat accumulation may also be an approach to minimising the severity of water repellency, as soils high in organic matter can exhibit water repellency. Yet, information on the effectiveness of regular renovation to reduce the incidence and severity of water repellency in sand-based turfgrass systems

**A three-year research project being conducted by the University of Western Australia (UWA) aims to maximise turfgrass water use efficiency for warm-season turfgrasses grown under Australian conditions by decreasing the incidence and severity of soil water repellency. UWA researchers give an overview of this new HAL-funded research project.**



is currently lacking and also requires further investigation.

The overall objective of the University of Western Australia's (UWA) field-based project is to maximise turfgrass water use efficiency for warm-season turfgrasses grown under Australian conditions by decreasing the incidence and severity of soil water repellency. Specifically, the project will:

- Investigate the development of water repellency under a sand-based turfgrass system so as to determine the conditions that it occurs (Experiment 1);
- Evaluate the suitability of laboratory-based tests for predicting the effectiveness of wetting agents (Experiment 2);
- Determine if the timing and formulation affects wetting agent effectiveness (Experiment 3);
- Assess if turfgrass renovation techniques minimise the development of soil water repellency in sand-based turfgrass systems (Experiment 4).

## EXPERIMENTAL APPROACH

The three-year study will utilise turfgrass plots

planted in 2005 at the UWA Turf Research Facility, and which consisted of 'old' turfgrass (i.e. 20-year-old turfgrass that includes 50mm mat) and turfgrass established from new sod (i.e. 20 week old turfgrass). Including turfgrasses of two ages will enable techniques for managing soil repellency to be investigated on soil containing two contrasting soil organic matter contents. The study includes four main experiments.

## EXPERIMENT ONE

**Under what environmental conditions in a Mediterranean-type climate does soil water repellency develop?**

Understanding the development of water repellency in turfgrass is required for establishing strategies for overcoming water repellency. The aim is to determine the timing and extent of the development of water repellency in turfgrass of two organic matter contents, and in the absence of corrective measures.

Soil water repellency, soil water content and turfgrass quality (colour, surface hardness) of each turfgrass age will be measured frequently



during the growing season to determine the rate at which repellency develops. In addition, soil water content and water repellency will be measured at various soil depths to determine the soil depth to which repellency develops.

Soil water repellency will be measured using both the 'water droplet penetration time' and the 'molarity of ethanol droplet' (MED) tests. Measures of soil water repellency will be related to soil water contents to determine the critical water content at which repellency develops, and to assess if this value varies depending on the organic matter content of the soil.

## EXPERIMENT TWO

### Are laboratory-based tests suitable for predicting wetting agent effectiveness?

Turfgrass managers are faced with a selection of products when choosing a wetting agent. Selecting a suitable wetting agent can be difficult as the action of wetting agents is not always fully understood, and it is apparent that a single wetting agent may not be suitable for all soil types and climates.



Older kikuyu turfgrass, containing a 50mm layer of mat, has been very susceptible to dry patch under ET-replacement irrigation in summer

The aim of this experiment is to assess the suitability of simple laboratory tests for testing wetting agents in terms of their immediate and residual effects. Furthermore, the success of the laboratory tests to evaluate the potential benefits of wetting agents will be tested in the field.

## EXPERIMENT THREE

### What factors affect the longevity and effectiveness of wetting agents?

This experiment will determine if the effectiveness of wetting agents can be improved

by either choice of formulation or frequency of application. The field investigation will be designed in consultation with the turf industry utilising the findings from Experiments 1 and 2, and will monitor the development and extent of water repellency under different wetting agent treatments (e.g. formulations), using the methods outlined in Experiment 1, and in comparison to untreated turfgrass plots.

## EXPERIMENT FOUR

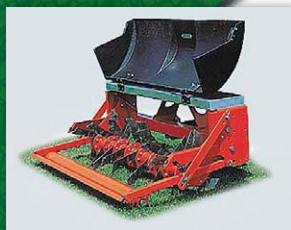
### How effective are renovation treatments at reducing the development of soil water repellency?

Reducing the thatch and mat content of turfgrass has been suggested as an approach to decrease the development and severity of water repellency. This experiment will compare the relative effectiveness of various renovation techniques to minimise the development of water repellency in younger and older kikuyu turfgrass.

Measurements initiated in 2005 to investigate the effectiveness of thatch/mat control techniques on soil organic matter

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contents, water infiltration rates and turfgrass growth and quality will also continue.

Renovation treatments are:

- No renovation (control);
- Scarifying and sweeping (one time per year, spring);
- Coring and sweeping (one time per year, spring);
- Sanding (5mm, two times per year, spring and autumn); and
- Coring and sweeping (one time per year, spring), plus topdressing (5mm, two times per year, spring and autumn).

## RESEARCH OUTCOMES

The benefits of the research to the turfgrass industry will include cost savings, improved turfgrass surfaces, better environmental management, and an improved public perception of turfgrass management. Research findings will be published in national industry journals and international scientific journals, and presented at national and state conferences, for the benefit of the wider Australian turfgrass industry.

## ACKNOWLEDGEMENTS

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**The UWA Turf Research Program will assess the effectiveness of various renovation treatments, including coring (above) and scarifying (below), to minimise the development of water repellency in turfgrass**



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Auburn University researchers found that nitrate leaching in bentgrass greens was greatest in the initial months of the study when N was applied at high rates, but differences in nitrate leaching lessened as the greens aged and N fertilisation was reduced to maintenance levels



# Nitrate leaching in bentgrass greens

Unlike other fertiliser nutrients such as potassium (K), the availability of nitrogen for plant use is controlled by the complex and biologically based nitrogen (N) cycle.

Nitrogen is added to the N cycle via decomposition and addition of plant residues, fixation by lightning, and, most importantly in turf, fertilisation with N fertilisers.

Nitrogen is lost from plant availability via immobilisation (N incorporated into biological organisms), denitrification (loss to the air as  $\text{NO}_2$  compounds), volatilisation (loss to the air as ammonia), and leaching (loss from the rootzone as nitrate).

In turfgrass research, the N uptake/loss areas which have received most exploration are N uptake as a result of fertilisation and N losses via nitrate leaching. For example, a 1990 review article on the fate of nitrogenous fertilisers applied to turfgrass cited 12 articles that studied N uptake by turf: seven examined ammonia volatilisation, four examined soil storage of N, two studied denitrification, and 10 examined N leaching (11).

Leaching is the downward loss of nitrogen as the nitrate anion ( $\text{NO}_3$ ) is moved by water from the rootzone deeper into the soil with possible movement into underlying groundwater. Nitrate leaching receives attention because:

- There are concerns about increased nitrate in water and its effects on the populations at risk;
- Nitrate is a mobile anion and this path of N loss can be substantial, especially in sandy soils; and

## Research at Auburn University in the US has examined the combined and separate effects of nitrogen rate and greens mix on nitrate and ammonium in leachate from bentgrass putting greens.

- Unlike other N loss paths such as denitrification or immobilisation, leaching is a relative easy loss path to study not requiring expensive labelling techniques or specialised, expensive equipment.

In turf systems, nitrate leaching papers first appeared in the referenced literature in the late 1970s and early 1980s with continued publication in this area to the present day. Many of these papers examined N leaching under turf managed as a lawn or fairway using species such as Kentucky bluegrass (*Poa pratensis* L.) (5, 6, 10, 12); Kentucky bluegrass/red fescue (*Festuca rubra* L.) mixtures (8, 9, 16), fairway-height hybrid couchgrass (*Cynodon dactylon* x *C. transvaalensis* Pers.) (7, 15) and Saint Augustinegrass [*Stenotaphrum secundatum* (Walt.) Kuntze] (4).

Studies often had N source and N rate as treatments, and, in general, concluded the following:

- Nitrate leached from high-sand soils during establishment (6) or when excessive rates

(approximately six-times the recommended rate) were applied (12);

- Nitrate leaching into the soil profile was far less likely to occur in soils with a lower sand content (12, 16);
- N leaching from soil was reduced when a slow-release N source was used (10, 14, 15); and
- Irrigation applied at a correct frequency and rate resulted in little measurable nitrate leaching, even in a sandy soil (15).

Based on this work, we have developed our general recommendations to limit nitrate leaching in turfed soils – avoid over-application of N fertilisers, consider use of slow-release N sources or split application of soluble N sources, and do not irrigate to excess following N applications.

Constructed putting greens often fit the worst-case scenarios mentioned in the preceding paragraph, as they are built with 90 per cent or more sand and receive frequent inputs of N fertiliser and irrigation. Additionally, constructed greens are shallow and drain directly to an outlet, an additional potential environmental hazard.

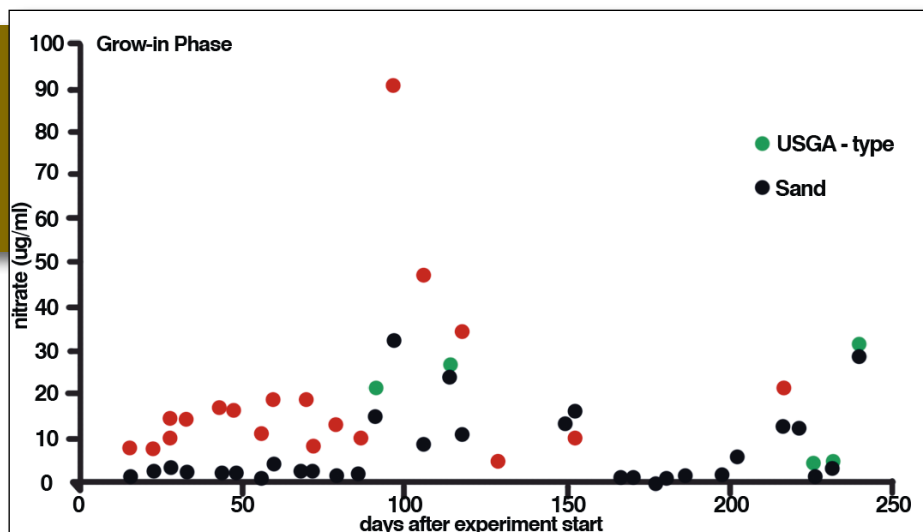
Research which examined N leaching in greens typically used small individual golf greens with the greens mix itself sometimes a treatment variable (2, 3, 13). The percentage of N lost as leached nitrate varied by study, often less than two per cent of total N applied (13, 15). However, when N was over-applied at three-times the recommended rate, leachate nitrate was as high as 23 per cent of N applied, with greatest loss from soluble N sources (2).



**Figure 1. Effect of greens mix on nitrate leaching in a newly established 'Crenshaw' bentgrass putting green. Red points indicate those sampling dates when USGA-type rootzones leached significantly higher concentrations of nitrate**

Over the past 30 years, fairway-based research has shown that when N is applied at the recommended rate, at the correct time of year, with appropriate irrigation, the result is minimal nitrate leaching. Studies that evaluated putting green mixes are less prevalent and were either a greenhouse trial (1, 14) or conducted on 'Tifdwarf' couchgrass (2, 3).

Given the widespread use of creeping bentgrass (*Agrostis stolonifera*) on USGA-type putting greens, the number of studies which have explored nitrate losses from such a system are few (11, 13). Thus, the objective of this research project was to examine the combined and separate effects of N rate and greensmix on nitrate and ammonium in leachate from bentgrass putting greens.



## MATERIALS AND METHODS

The experiment was located at the Auburn University Turfgrass Research Unit (TGRU). The study consisted of 16 individually constructed greens, each 1m x 0.5m in size. Each individual green was deep enough to hold 10cm of gravel and 40cm of overlying greens mix. No choker layer between the gravel and rootzone mix was used since prior analyses of the greens mix

indicated that the sand would bridge.

Each green drained completely into a separate collection unit, allowing all leachate from each green to be collected as needed. The greens were constructed in December 1996 using washed 'Crenshaw' creeping bentgrass sod installed in each green on 2 January 1997.

There were four replications of each

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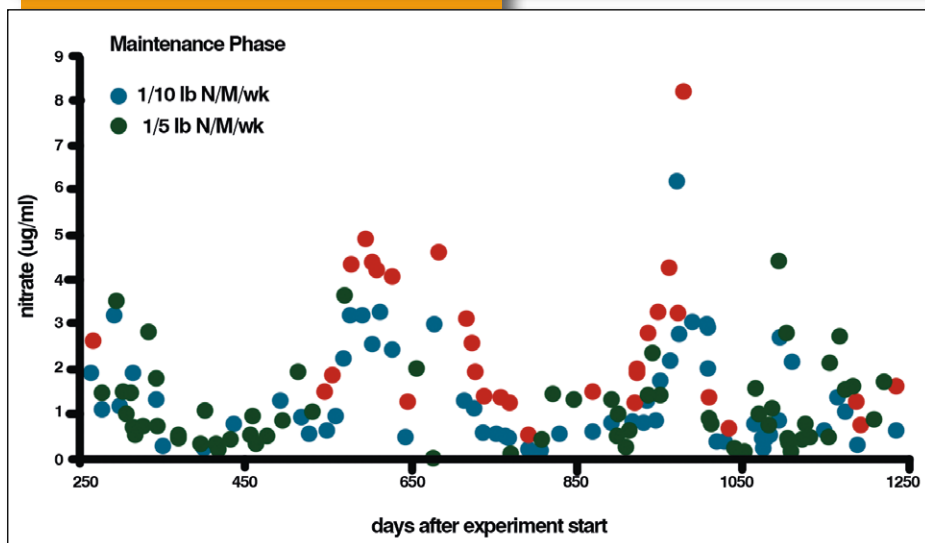
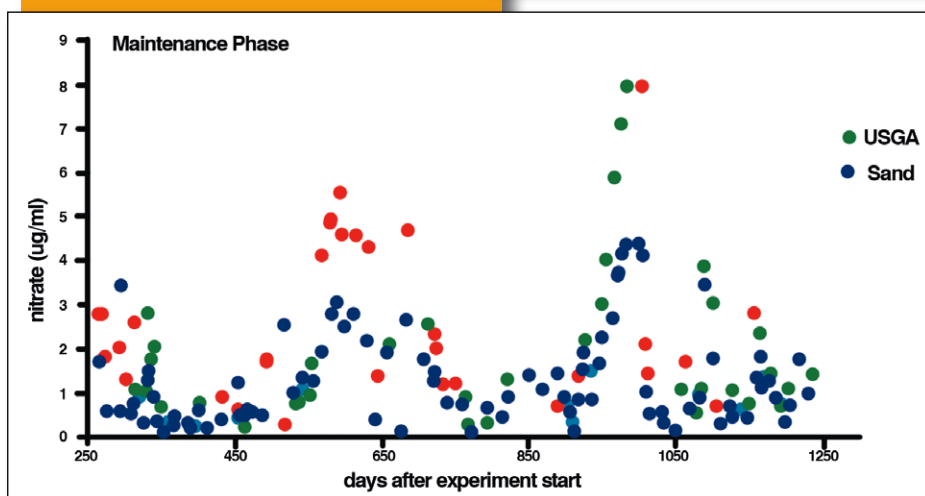
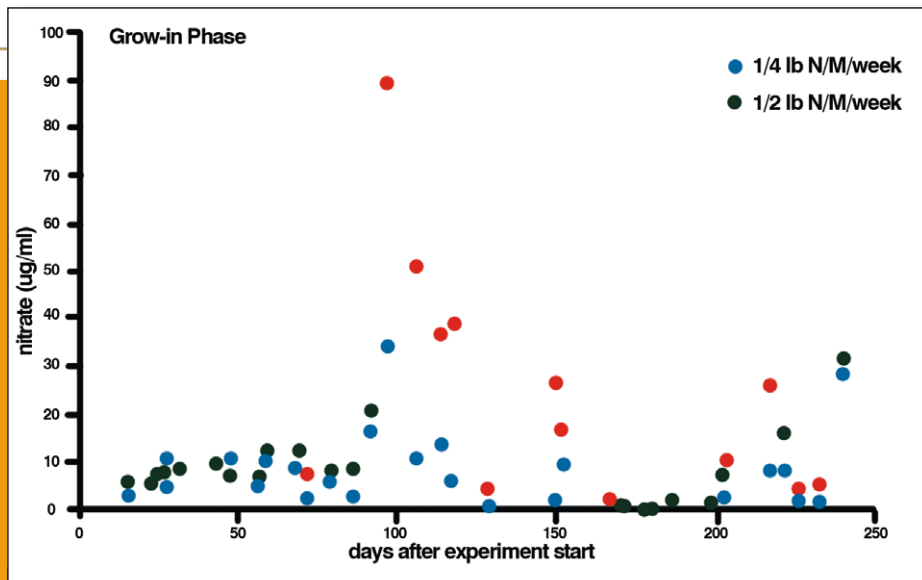
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**Right: Figure 2. Effect of nitrogen rate on nitrate in leachate in a newly established 'Crenshaw' bentgrass putting green.** Red points indicate sampling dates where 1/2 lb treatments resulted in significantly higher nitrate concentrations in leachate compared to 1/4 lb/1000 sq. ft./week treatments

**Below: Figure 3. Effect of greens mix on nitrate leaching in a 'Crenshaw' bentgrass putting green under a maintenance regime.** Red dots indicate sampling dates where USGA rootzones had significantly higher concentrations of nitrate in leachate than 100% sand rootzones



**Above: Figure 4. Effect of nitrogen rate on leachate nitrate in a 'Crenshaw' creeping bentgrass putting green managed under a maintenance regime.** Red dots indicate those sampling dates where 1/2 lb treatments resulted in higher nitrate concentrations in leachate than 1/4 lb N/1000 sq. ft./week treatments

greens mix/N rate combination. Greens mix treatments were:

- 100 per cent sand; and
- A USGA-type mix of 80 per cent sand/20 per cent reed sedge peat (v/v).

Nitrogen rate treatments were 1/4 or 1/2 lb. N/1,000 ft<sup>2</sup> per week for the first eight months (grow-in phase), followed by 1/10 or

1/5 lb. N 1,000 ft<sup>2</sup> per week for the remainder of the test (maintenance phase).

The two N rate and two greens mix treatments were arranged as a 2 x 2 factorial design with four replications of each treatment combination. All N was applied as a spray application on the Monday of each week using 20-5-10 as the fertiliser source with additional urea (46-0-0) used to make up the higher N rate. The experiment ended on 5 May, 2000 representing three years and four months of leachate collection from the bentgrass putting greens.

At least twice monthly the following was done:

- Total leachate volume from each green was collected and determined; and
- A subsample of leachate was collected and returned to the lab for subsequent determination of nitrate and ammonium concentration.

Nitrate and ammonium in water samples were determined via standard colorimetric techniques. If rainfall in a sampling period exceeded 1/2 inch, the leachate containers were emptied as soon as possible, regardless of the sampling time. Thus, in periods of high rainfall the collection containers were emptied frequently as needed.

## RESULTS

At most sampling dates there was not a significant N rate x greens mix interaction. The main effects of greens mix and N rate often resulted in significantly different N leaching losses.

Figures 1 and 2 illustrate N lost as nitrate in the grow-in phase of the experiment when N was applied at high rates (1/4 and 1/2 lb N/1,000 ft<sup>2</sup>/week) simulating grow-in



conditions. In Figure 1, a red dot indicates that nitrate loss from the USGA-type greens mix was significantly greater than that from the sand greens mix at that sampling date.

In Figure 2, a red dot indicates that nitrate loss from plots receiving 1/2 lb N/1,000 ft<sup>2</sup>/week was significantly greater than nitrate loss measured from the 1/4 lb N/1,000 ft<sup>2</sup>/week treatment at that sampling date.

As with previous research (2), highest N leaching was found when N was applied at rates above those that would be recommended for turf maintenance. High concentrations of nitrate in leachate were found during the establishment phase of this study. Agronomically and environmentally, such N rates were not needed to maintain newly laid bentgrass sod managed as a putting green.

In the first three months after construction, plots containing the USGA-type greens mix had significantly more nitrate in leachate, regardless of the N fertilisation rate (Figure 1). Initial degradation of the reed sedge peat in the greens mix was likely contributing to this N release.

This higher concentration of nitrate from the USGA-type greens mix was largely depleted by four months after construction, and from that point, differences due to greensmix were largely nonsignificant (Figure 1).

Figures 3 and 4 illustrate leachate nitrate during the maintenance phase of the research. Significant differences between treatments are indicated by a red dot for the USGA-type greens mix and 1/5 lb N rate, respectively.

The lower rates of N fertilisation applied during this maintenance period resulted in an overall reduction in leachate N, a result similar to that found in previous research. Over the length of this study, there were few times when turfgrass color or quality significantly differed due to N rate or greensmix, indicating that the lower rate of weekly N application (1/10 lb N/1000 ft<sup>2</sup>/wk) would be adequate for a quality putting bentgrass green in the southeast of the US. When that rate was applied, N in leachate was typically well below 3µg/ml (3ppm) throughout the sampling period.

Over the years of data collection during the maintenance period, there was a cycling

effect in nitrate leaching, with increased nitrate collected during July and August (northern hemisphere summer) of each year (Figure 4).

It is likely that increases in nitrate during the summer were partly due to reduced rooting in the bentgrass as summer stress thinned the turf and reduced root length in the heat-stressed bentgrass. Others have shown that root architecture will affect nitrate leaching with deeper-rooted bentgrass absorbing N more efficiently than shallow rooted bentgrass (1).

Although we did not measure root length or root density in this study, other bentgrass root research at the same location has shown reductions in rooting during July and August with subsequent root mass recovery by October of each year.

## ACKNOWLEDGEMENTS

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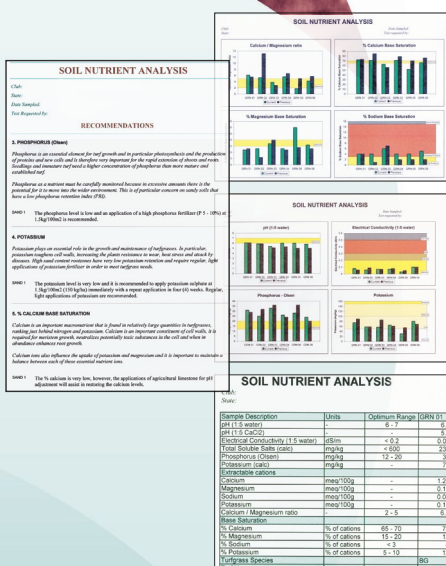


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BY BRETT ROBINSON

**"Implementing environmental measures slowly is not a huge capital expense and in the long term actually can reduce overall maintenance costs." – David Warwick, Avondale Golf Club**



# Avondale looks to the future

Over the past decade, Avondale Golf Club in Sydney has established itself as one of the pioneers of golf course environmental management in Australia, if not the world. Whether it's the club's involvement with Audubon, its aggressive promotion of native flora, through to the continual fine-tuning of environment management practices, the club has won many admirers both in Australia and around the globe.

For course superintendent David Warwick, such a reputation has been hard earned and as the accolades have come they reaffirm an ideal that was founded more than 20 years ago when he was a humble apprentice.

Warwick's affinity for environmental management can be traced back to an article on Audubon he read in the GCSAA's journal *Golf Course Management*. The article struck a chord with the young greenkeeper and it wasn't until he assumed the mantle of superintendent at Queensland's Arundel Hills Golf Club a number of years later that he started instituting some of his ideas.

Around that time general environmental awareness was starting to build among the public and some of the environmental initiatives Warwick had instituted at Arundel Hills made headlines in the local media. Seizing on this, his general manager at the time saw Warwick's efforts as a major drawcard and the publicity endeared the club to the local community.

That trend continued when Warwick was successful in getting the superintendent position at Avondale Golf Club. The club's location and setting were tailor-made for Warwick and his ideas and instantly he could see the huge potential the course offered.

In the late 1990s Warwick attended the GCSAA conference in Orlando, Florida and

**Avondale Golf Club has for years set the benchmark when it comes to golf course environmental management. ATM asks superintendent David Warwick where to now for the club.**



at the Golf Show visited the Audubon stand. Arriving back home he convinced management and committee that joining the programme was in the club's best interests. Having already documented a lot of what the course was doing environmentally, certification proved to be a relatively straightforward process and the club became one of the first in Australia to be part of the Audubon scheme.

"I reckon 99 per cent of Australian superintendents would get Audubon certification," claims Warwick, who has been superintendent at Avondale since 1996. "Everyone is environmentally conscious and doing good work, it's just the paperwork that makes some people apprehensive. I have taken and adapted things that I have seen and read about over the years, implemented them here and then documented it which is the key.

"There are a lot of guys out there doing some great work and the level of environmental

consciousness within the industry has without question improved in the last couple of years. That has come about through education, the AGCSA and the likes of the Claude Crockford award recognising environmental excellence and the great work of other superintendents. The industry is right up there now and it's great to see everyone doing their bit."

At the 2004 conference in Melbourne, Warwick's efforts were recognised at the highest level when he was bestowed the AGCSA's Claude Crockford Environmental Award. It was at that same conference Warwick met a man by the name of Terry Muir.

Approaching Muir following his keynote presentation, Warwick introduced himself to which Muir responded, "I've been looking for you!" A few weeks later Warwick was showing Muir around Avondale and from that day forward a close relationship was born.

"Terry Muir has been a godsend for the industry," states Warwick. "Since that conference we have developed a strong working relationship and have a lot of respect for what the other has done. Quite frankly, I think the man is a bloody genius. I've learnt so much from him and I would like to think that I've helped him in some way enhance the e-par system.

"Terry and his business have been a blessing in disguise. He has done so much to help our industry and I think the principles of Audubon and e-par work well together. One is about the paperwork and documenting things and the other focuses on the practical environmental aspects out on the course."

With Muir's help Avondale recently conducted an energy audit and also hosted the drumMUSTER pilot day in Sydney late last year which netted nearly 800 containers.



Also aiding Warwick in his environmental endeavours is Avondale general manager Symon Scott who together with the committee has been a strong proponent of such initiatives at the club. To further engender support, Warwick is a prolific communicator and in his committee reports environmental management issues always top the agenda.

## FINE-TUNING FOR THE FUTURE

While Avondale has firmly established its credentials in the area of environmental management, Warwick says there are still certain aspects he wants to focus on. Not surprisingly, topping the list is water management.

In the summer of 2006/07 water storage levels dropped to such a critical stage that fairway irrigation was halted. Avondale, which has just one 29M storage facility on course, is totally reliant on the collection and containment of stormwater which comes from the surrounding 220ha catchment area. The dry conditions that summer hit home just how vulnerable the club was.

In response to this, in the latter half of 2007 the club commissioned a water management report. Although finding an already high degree of irrigation efficiency and management in place, there were still opportunities to increase efficiencies through a number of means.

Ironically, the report highlighted that if the club extended its irrigation system it would be able to water the course more efficiently. The report found that the greatest area of water waste was overwatering of fairways in order to provide adequate water for rough areas. By installing more sprinklers in those areas the club would not only have better surfaces but would actually save on water usage. Other recommendations in the report included conducting a feasibility study into sewer mining, as well as increasing dam storage capacity.

Other work on the cards includes looking at installing rainwater tanks for machinery washdown, while Warwick is also keen on introducing more native grasses to rough carry areas and integrating the surrounding bushland further into the golf course.


"We haven't reached a peak, so to speak, but it's now more about maintaining the level we have got to and fine-tuning a few areas," says Warwick. "We have a fantastic base here at Avondale and the staff have played a huge part in that, particularly former horticulturalist Alex Palmer and our current horticulturalist Mark Massingham.

"The other advantage we have is that the club has the money to reach these environmental goals. In a way it's unfair to highlight Avondale because we have the resources available so it's easier for us compared to those courses that don't have the money. But I can guarantee you the guys in those clubs have just as much drive as I do when it comes to the environment and they are doing some great work given the constraints they have to operate in.

"Implementing environmental measures slowly is not a huge capital expense and in the long-term actually can reduce overall maintenance costs. That's what we have found here over the years. Environmental management should be seen as an investment and one which all clubs should make." 🙌



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Victoria Golf Club superintendent Ian Todd is looking forward to seeing his new 36.4M storage dam full come the start of next summer



# Sandbelt supers shore up supplies

With the prolonged drought threatening their famed surfaces, three of Melbourne's iconic sandbelt golf clubs are moving fast to ensure their future water supply. Royal Melbourne and Victoria, two of the hardest hit clubs in recent times, have constructed dams during the past growing season, while Metropolitan Golf Club is about to expand its existing storage capacity and install a reverse osmosis unit.

For superintendents Jim Porter (Royal Melbourne), Ian Todd (Victoria) and Richard Forsyth (Metropolitan), the past two summers have been among the most stressful they have had to endure, however they will all be able to sleep a little easier heading into this winter with the knowledge that they have taken steps to secure a more sustainable future.

Of all the sandbelt giants, Royal Melbourne has personified the impact the drought has had on golf. Reliant on potable water to supplement their low yielding bores, Australia's most famous golf club this year had to resort to carting in one megalitre of Class A recycled water a week to keep the course alive.

With the Recycled Water Scheme for councils and industries in the sandbelt region shelved for the time being, golf courses have been forced into making their own investigations to secure water for the future.

In Royal Melbourne's case, continuing to search for additional bore water was deemed to be too hit and miss, while a joint investigation

**ATM looks at three of Melbourne's renowned sandbelt courses and their efforts to secure their future**

**water resources.**



of sewer mining with Victoria Golf Club found that such an option was unlikely to meet the demands of both clubs.

At the same time Royal Melbourne investigated the possibility of harvesting stormwater from an area primarily surrounding the East Course. Initial studies showed up to 90M (three quarters of the club's total needs) could be harvested during an average rainfall year. Historical data also indicated a worse case scenario of 40M in a dry year.

Work has progressed with this project to the point where the club has recently finished construction of a 37.5M storage dam next to the maintenance facility. A 1.8km transfer pipe is currently being installed to link the diversion structure and a 1M underground storage located alongside the 7th East hole.

The project is expected to be fully completed by June in time to enable the collection of both winter and spring rains in preparation for the next irrigation season.

"Although not necessarily drought-proofing our facility, we will still have a minimum of just under 40M of storage at the start of summer that is likely to be a shandy of both bore and stormwater," says Porter. "Without rainfall this will provide us up to 12-16 weeks irrigation, which is a much more comfortable scenario than in recent years."

"This project provides the infrastructure and foundation for securing our long-term water needs without a heavy reliance on town supply. Other future work being considered includes desalinisation and treatment of our bore supply, drilling for new bores, increasing total storage and hopefully the procurement of piped Class A recycled water."

## VICTORIA

Across the road at Victoria Golf Club and Ian Todd is also looking forward to a wet winter and spring to fill his recently constructed 36.4M storage dam. After what Todd describes as one of the most challenging periods in the club's history, the area to the right of the 17th fairway was chosen as an ideal location for the new dam which is fed by bore water and stormwater.

"The construction of the facility was always considered as the first stage of a multi-stage



project to secure the club's water requirements into the future," says Todd. "Alternative water sources are still being considered rather than relying solely on bore water for the course and clubhouse surrounds."

Since completion of the dam in late September 2007, the club's bores have been operating non-stop and levels reached their highest just prior to Christmas when Melbourne copped a major dumping. That event saw around 3-4M flow into the dam which increased levels to about 18M. That allowed the intermittent watering of fairway areas only through summer and only enough to stop areas from dying.

"This programme was strictly adhered to throughout those months," says Todd. "The fairways, although always teetering on the brink of death, were in far better condition than at the corresponding period of the previous summer, so already the project is a success. The bores are currently resting for a period of time prior to winter when the refilling process will start once more and hopefully the dam will be at capacity prior to next summer."

## MET-RO-POLITAN

Increasing storage capacity is also on the agenda at Metropolitan, but is just one of two projects that superintendent Richard Forsyth will be embarking on. As well as increasing the existing 18M storage dam to 40M, the club has decided to install a reverse osmosis unit to treat water from two of its bores.

Historically Metropolitan has relied on bore water, stormwater and some mains water for irrigation. Production of ground water from the four current bores has deteriorated in recent years and in the summer of 2006/07 the lack of ground water availability resulted in the club deciding not to irrigate fairways until early March 2007.

Greens management in recent years has relied upon the use of mains water for hand watering, supplied through a separate pipe system to each green. Restrictions placed on using mains water reduced the ability to use this source and as part of the club's water management plan, constructed by Forsyth, the first priority was finding a water source of equal quality to replace mains usage on greens.

After considerable research, a desalination plant, which will provide 100 kilolitres of treated water per day, has been approved. The treated water will be stored in two tanks with a capacity of 520 kilolitres.

As well as widening and deepening the existing dam, the second stage of the project will also see the existing stormwater harvesting system upgraded to enable a greater capacity to capture water during high rainfall events.

The new water storage will also incorporate a complete new pump station with a new pump well and equipment. Work was due to start in April 2008 with completion by 30 June to allow filling prior to next summer. Cost of both projects is in the vicinity of \$900,000.

"It is hoped the investment in this additional irrigation water infrastructure will improve the security of water supply using sustainable and environmentally responsible sources of water," says Forsyth. "If, at some time in the future, recycled water becomes available, either by sewer mining or direct supply, the new infrastructure can be adapted to make best use of this source." 🌱



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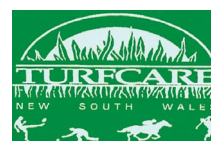
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BY LINDSAY TOMLINSON AND SIMONE STAPLES

ATM looks ahead to the  
dedicated turf technicians  
stream which will be held as  
part of the 24th Australian  
Turfgrass Conference  
and Trade Exhibition in  
Melbourne this July.



# Turf techs get into gear for conference

Turf technicians from around the country will converge on Melbourne for the 24th Australian Turfgrass Conference and Trade Exhibition from 21-25 July. In conjunction with the Victorian Turf Equipment Technicians Association (VTETA), the AGCSA has put together a four-day programme for turf technicians which includes a number of presentations from leading industry companies, as well as a facilities tour.

Education sessions kick off on Monday with a presentation from Castrol before heading out to PowerTurf/PFG's facility in Derrimut. Tuesday's sessions will be conducted at Toro's Braeside headquarters, before delegates return to the Melbourne Convention Centre on Wednesday and Thursday for the remaining sessions. John Deere will also be sponsoring the technicians dinner which will be held on the Wednesday night.

In what will be a first for the turf technician stream, the VTETA has launched a sponsorship programme to get turf technicians who wouldn't normally attend the conference down to Melbourne. The VTETA is offering six 'scholarships' each worth \$500 to cover accommodation costs for four nights during the conference. The VTETA has asked Toro, John Deere and PowerTurf to nominate two

turf technicians that would not normally have the opportunity to attend and if their club/management accepts the nomination and agrees to pay the conference fees (\$440) the VTETA will then cover the cost of accommodation. The full turf technicians programme is as follows.

## MONDAY 21 JULY

### Castrol Presentation

*Rod Crowe – Technical Services Manager (VIC, SA, TAS)*

Rod's presentation will include debunking the myths about biodegradable oils, new technology synthetic engine oils, synthetic verses mineral – the advantages and disadvantages. He will also look at the latest oils for turbo - diesel and petrol and their differences and Castrol-BP's racing involvement and racing oils.

### PowerTurf Technical Presentation

*Glenn Wright – Jacobsen Technical Training Manager (Pacific Rim)*

*Ray Grech – Specialist Product Support*

As well as a tour of the PowerTurf/PFG facilities at Derrimut, delegates will hear a presentation on fluidless mowing, an area Jacobsen Technology has been developing for over a decade, followed by a talk on the advantages of well-designed maintenance facilities.

### Facilities Tour – MCG

Delegates will end the first day touring the workshop and inspecting the equipment at Melbourne Cricket Ground.

Turf technicians will be able to pick up handy hints and new ideas at this year's conference

## TUESDAY 22 JULY

### All That's Real in Reels

*Greg Turner – Foley United Sales Manager*

Greg will provide an insight into reel facts and information and also helpful hints on how to get the best out of reels and grinders, along with hands-on grinding using the Foley 652.

### Stay Safe, Spray Safe

*Craig Day – Spray Safe*

Craig will examine correct sprayer set up (e.g. nozzle sizes, spray patterns and sprayer calibration) and will also look at how to diagnose potential problems and discuss controller aspects of sprayers.

### Hands on Technical Training

*Garry Price - Field Engineer, Turf Equipment Sale and Service*

Garry will provide a hands-on diagnostic session on electrical and hydraulic test procedures involving fault finding and the use of specialist test equipment.

## WEDNESDAY 23 JULY

### Team Work – How a Joint Approach Works

*Daryl Sellar - AGCSA HR Manager*

Drawing on his experience as superintendent at Glenelg Golf Club and his role as the AGCSA's HR and best practice manager, Daryl will discuss how communication, understanding and team work between all the areas of the turf maintenance team leads to a happy and safe working environment.

### Maintaining the Latest Machinery

*Dr Van Cline – Manager of Turf Agronomics and Research, Toro*

Dr Cline will discuss technical aspects and the skills needed to maintain the latest machinery that have innovations such as mobile sensors.





**The 24th Australian Turfgrass Conference in Melbourne will provide four days of education for turf technicians as well as the two-day trade exhibition**

#### **Technicians in Asia**

*Phil Ryan – Pacific Coast Design*

Phil will present on the role technicians play in the expanding Asian golf course industry, the unique problems that need to be addressed and job opportunities available.

#### **Who's Responsible?**

You arrive back at the sheds to find your newest piece of equipment has been delivered. Keys and user manual are on the seat. No one is sight. What now? This talk is aimed at finding out what you should expect from the manufacturer pre and post delivery of any new equipment in direct relationship to operator and OH&S issues.

#### **Future and New Directions of Turf Equipment and Machinery**

*Rene Lubbers – Product Manager, John Deere*  
*Brooks Hastings – Marketing Manager, John Deere*

This presentation will discuss the research and development involved when engineering products from the formation of ideas in the field to prototypes and production.

#### **THURSDAY 24 JULY**

##### **Briggs & Stratton Technical Presentation**

*Rohan Carroll – National Service Manager*

As a specialist in small engines and machinery, Rohan will discuss the new advances and technology across the Briggs and Stratton range.

##### **BOC Equipment Presentation**

*David Smith – Welding and Laser specialist*

*Rod Bamford – Industrial Products Manager*

David and Rod will present products that are at the cutting edge of today's standards. Presentations on plasma cutters, welders and flame gas equipment will demonstrate how these powerful yet portable pieces of equipment are an important component of modern workshops.

##### **Irrigation Development and Maintenance**

*Ken Mangum, Director Golf Courses and Grounds, Atlanta Athletics Club*

Ken will discuss the changes that are occurring

in the area of irrigation. He will cover new technologies and the importance of updating and maintaining irrigation systems.

**Turf technicians can register for the conference online at [www.agcsa.com.au](http://www.agcsa.com.au)**

#### **TETA STATE CONTACTS**

##### **NSWTETA**

##### **Membership enquiries**

Sam Olah

M: 0418 296 111

E: [s-m-s@bigpond.com](mailto:s-m-s@bigpond.com)

**Next event:** 17 June, 2008 – GWS/Silvan Australia Day

##### **VTETA**

##### **Membership enquiries**

John Phelan

M: 0412 121 111

E: [john@vteta.info](mailto:john@vteta.info)

**Next events:** 27 May, 2008 – Welding Training Day, BOC (Dandenong); 3 June, 2008 – AG Power (Lilydale)

##### **QTETA**

##### **Contact**

Phil Newton - [philnewton@people.net.au](mailto:philnewton@people.net.au)



# **TURF TECHNICIANS STREAM**



**24th Australian Turfgrass Conference and Trade Show**  
**21-25 July 2008**  
**Melbourne Convention Centre**

**For more information contact**  
**Lindsay Tomlinson on [Lindsay@vteta.info](mailto:Lindsay@vteta.info) Phone: 0439 363 018**

**For conference bookings contact the AGCSA on (03) 9548 8600**

Getting back on the tools has proved too much of an allure for Brett Morris who has taken up the superintendent role at Sea Temple Golf Club and Country Club. Morris, the former superintendent at Brisbane Golf Club, spent the past couple of years working at the University of Sydney where he was involved with the Masters of Turf Management programme. Morris finished up that role in December before moving the family north to Port Douglas.



Brett Morris

Assistant superintendent Leon Hennessy has left Long Reef Golf Club in Collaroy, NSW and moved down the road to a similar role at Elanora Country Club under superintendent Daniel Cook. Hennessy replaces Mitchell Montgomery who has left the industry. Simon Brown, ex-groundstaff at Manly Golf Club, has been promoted to Hennessy's vacant role at Long Reef.



After 19 years at Tura Beach Country Club, superintendent Pete George has decided on a change of scene. George has taken a

position with a local irrigation company dealing in both the turf and ag sectors.

Troy Nethercott is settling in as the new superintendent at Emerald Golf Club in Queensland. Formerly with Turf Irrigation Services and superintendent at Riverlakes Golf Club, Nethercott takes over from Peter Bock who has moved to Bundaberg Golf Club.

Tom Crawford has been appointed superintendent at Launceston's Riverside Golf Club. Crawford arrives after eight years at Red Cliffs Golf Club in Mildura. Crawford, who was brought up in Launceston, takes over from Peter Medwin who is now superintendent at Maryborough Golf Club.

# Jeff Lane

## Paradise Palms Country Club



Jeff Lane has taken the reins at Paradise Palms Country Club in Queensland, coming across from Joondalup Resort in Western Australia

After more than two decades as superintendent of some of Perth's foremost golf clubs, Jeff Lane pulled stumps and shifted east to take up the superintendent posting at Paradise Palms Country Club in Cairns. Seeking a new challenge in his turf management career, Lane certainly got more than he bargained for after Far North Queensland copped one of its most intense wet seasons for many years.

**Nickname:** Laney.

**Age:** 42.

**Family:** Wife Cindy and son Jeremy (13).

**Years as a superintendent:** 20.

**Years as an AGCSA member:** 20.

**Previous clubs:** Balgowlah GC (apprentice, 4 yrs); Sun City CC (greenkeeper, 1 yr); Wanneroo GC (Ass 1 yr); Sun City CC (superintendent, 3 yrs); Gosnells Golf Club WA (superintendent, 13 yrs); Joondalup Resort (superintendent, 4 yrs).

**Current club:** Paradise Palms CC (3 months).

**Number of staff:** 16.

**Course specs:** 18 holes, Tifdwarf greens, Greenlees Park tees and fairways.

**Turf qualifications:** Greenkeeping certificate, Diploma turf management.

**Congratulations on your recent appointment as superintendent at Paradise Palms CC. It must have been a big decision to move right across the other side of the country after a successful tenure at Joondalup. What prompted the move and how are you settling in?**

It is hard to say. There were so many factors involved. The job gave us the opportunity to experience life in a new place. I saw the ad on the AGCSA website and it seemed like a good opportunity to learn more and challenge myself. As Paradise Palms is going through some major changes with Graham Marsh also, I thought it would be an exciting move.

Cindy and I are no strangers to big moves, having moved from Sydney to Western Australia the day after we married when we were just 20! And our son Jeremy is happy as Cairns has the country's best skate park. There are always risks in life and with my 13-year-old being part of our decision I wanted him to learn that sometimes you have to take risks to see what you can do.

**Scott Parker (ex-2IC at The Vines) made a similar move to Cairns a couple of years ago. Were you in contact with him to get some advice before the big move east?**

No, not beforehand, but I have caught up with Scott a few times now. I have also met or chatted with some of the other guys up here too and they have all been really great.

**What are some of the main challenges with your new posting? What has been the biggest adjustment?**

The climate and grasses to start with! The disease pressure was enormous just after I arrived. What would take about 12 days to breed in WA happens in about 12 hours here. Understanding how these hybrid couches want to live is a big challenge. I arrived right before



the wet season started and it has been a pretty tough initiation. We've had about 2m of rain in the three months since I arrived.

The Tifdwarf is really suffering. The root system is nearly non-existent. It's amazing to see a grass so unhappy with what you're doing to it. It's going to take a while to understand what it wants, but we'll get there. Nearly every course up here has changed their greens to Novatec as they all got tired of losing grass every summer. Trying to build a whole new green complex out of clay during the wet season is a fair challenge too!

#### **The one thing you miss about Joondalup and the one thing you don't?**

Perth has the most fantastic sands and together with the dry climate must make it one of the best places in the world to grow turf. I must say I miss all the mates that I made over the 20 years we were in Perth, but I certainly don't miss the winds.

#### **Paradise Palms is about to undergo some major works. Can you outline what is planned for the course and what it will mean for you as superintendent?**

The new owners here are developing all the real estate around the course and also some on the course. As a consequence, Graham Marsh's team has put together a redesign plan which is expected to be completed over the next five to seven years. There will be about three completely new holes (including an island green par 3) and a number of major changes to a few other holes. All greens will be redesigned and rebuilt, all tees will be renewed and all fairway bunkers.

For me it probably means I'll be as busy as a canetoad crossing a highway but we're hoping at the end of it we'll have one of the best courses in the country. I can't see why not...it already has a great layout and is in a great location.

#### **What are some of your major turf management issues there at Paradise Palms?**

The buzzword in Queensland seems to be ERI (ectotrophic root infection). A lot of research is going into it. Coming up with a sustainable management plan to combat this is one issue. Producing extremely high quality surfaces in this climate with the rain and the soils is another issue we want to excel in.

#### **Water is obviously a critical issue around the country. Is water the least of your worries given the location of the course?**

Well, we still can have a water shortage too.

Our only water supply is reclaimed effluent and from about April through to December we still need it and often it may not be enough. The daily evaporation rate is still around 5-6mm through winter and then only about 7-8mm in summer. And then we've just finished getting about 2m of rain over the first three months of the year! So yes, that does cause some other issues.

#### **What's the one piece of advice you would give a superintendent moving to a new club interstate?**

I suppose just to stick to the basics – moisture, drainage, nutrition etc. Look, learn and listen to as many people as you can. Oh, and if they are coming to FNQ, get a good preventative disease programme in place asap!

## **OFF THE COURSE**

### **Favourite movie?**

T2.

### **Name three CDs you could not live without.**

U2 – Unforgettable Fire; Coldplay – Rush of Blood to the Head; The Brady Bunch – It's a Sunshine Day.

### **If you could be any musician, who would you be?**

Don't care...as long as I get to do a duet with Christina Aguilera.

### **Food you could not live without?**

Chilli.

### **Favourite sporting team?**

Freo.

### **Sporting team you despise?**

There will be a lot of disappointed people if I don't say West Coast.

### **Irritations?**

People who say "guesstimate" and "one foul swoop". And when the media declares a one-day cricket match won by a certain number of wickets. How can you win by wickets in a one-dayer?

### **What book are you reading now?**

Augusta National and the Masters, a photographer's scrapbook. I get it out every year about this time.

### **Favourite golfer?**

Tiger is a freak of nature. It's a privilege to be living in the same era and to be able to watch his achievements unfold.

### **Golf handicap?**

Six.

### **What do you do to get away from it all?**

Yell at Freo for about three hours a week.

#### **Best advice you have ever received on the job and who gave it to you?**

Peter Williams (ex Royal Melbourne) gave me some fantastic advice on how to manage bentgrass greens and it completely changed the way I did things after that.

#### **If you could change one thing about your job what would it be?**

Being able to go home on a Friday afternoon and not think about anything work related (or go into work) until I get in Monday morning.

#### **Best part about being a superintendent?**

By far the best thing has been the opportunity to finish work most of the time in the afternoon and get time to spend with my family. I try and never take that for granted.

#### **What's the best part of being involved in the turf industry?**

You certainly get to meet a lot of great people and form some good friendships and you just never stop learning.

#### **Favourite spot on your course?**

Anywhere, as long as it is in good condition.

#### **Favourite piece of machinery?**

At the moment it is the Enviromist. No golf course should be without one.

#### **Most embarrassing moment as a superintendent?**

I was showing someone how to service a sprinkler and didn't realise I had taken the nozzle off and the retainer out. For some reason the drive stayed in the can for a brief period, then while I had my head looking down into the can it decided to let go. The first thing I knew I was lying flat on my back with the words "Eagle 700" embossed on my forehead.

#### **Funniest moment seen on course?**

There's something about watching another staff member trying to fix an irrigation problem while there's a stack of pressure on it. They always end up saturated and the wetter they get the more determined they become.

#### **Worst excuse from a staff member?**

I've got a tummy ache (Monday morning obviously).

#### **Career highlight?**

Winning the 1997 AGCSA Fellowship Award; visiting a variety of great courses around the world in 2001, such as Shinnecock Hills, Pine Valley, Cypress Point, St Andrews, Merion and others; and playing 18 holes with Alice Cooper last year.

#### **The overseas course you'd most like to visit?**

Augusta National.

## PRESIDENT'S SON MAKES HIS MARK FOR MALTA

**T**wenty-two-year-old Ryan Gambin, son of Australian Golf Course Superintendents' Association president and Gold Coast Burleigh Golf Club superintendent Jeff Gambin, created history in late March after qualifying for the 2008 Beijing Olympic Games – for Malta!

Gambin, who holds dual Australian and Maltese citizenship, became the talk of the Australian swimming community after qualifying in the 100m butterfly at the European Championships held in The Netherlands, becoming the first swimmer in Malta's history to qualify for the Olympics.

In what was his first official swim for Malta after gaining citizenship at the start of 2008, Gambin notched a personal best time of 54.33s in his pet event to go under the Olympic qualifying mark of 54.7s. In doing so Gambin is officially the first athlete from Malta to qualify for this year's Games.

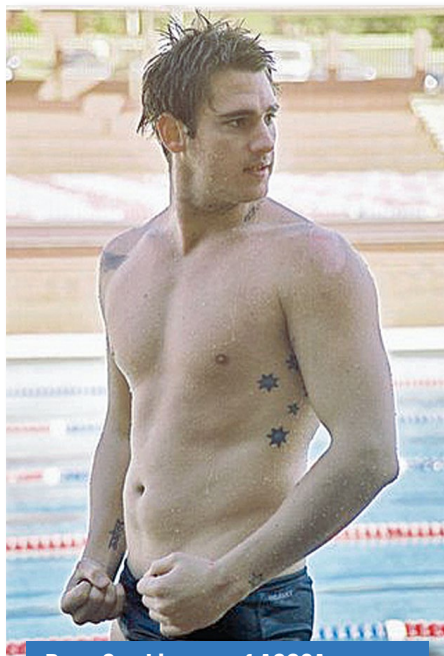
"I am thrilled to have made history and become the first swimmer ever to have qualified for the Olympics for Malta," says Gambin. "I love my new adopted home of Malta and want to do everything in my power to make the people proud."

"Achieving the time is special as for the last six months I have been doing this on my own. I left my family, my friends, my lifestyle in Australia and began looking after every aspect of my swimming by myself. I sat down and wrote out a training programme that suited my events and forced myself to stick with it."

"It is unheard of for a swimmer not to have a team behind them at my level and I have to admit, when I saw all the teams at the European Championships, like the Italians, Polish and Spanish, even I secretly questioned myself whether I could really perform at the same standard. But the results speak for themselves, so something must be working."

Gambin's journey on the road to representing Malta began last year via the most unusual of circumstances. Living then on the Gold Coast with dad Jeff and mum Karen, Gambin was asked to model for a swimwear catalogue. Karen sent some of those photos to friends and family, some of which ended up with Jeff's extended family back in Malta. Jeff is of Maltese descent and his parents, Joe and Doris, immigrated to Australia from Malta shortly after World War II.

Upon discovering that his distant relative was a gun swimmer, Jeff's second cousin Colin Pace contacted Gambin encouraging him to get in touch with the Maltese Swimming Association. Despite being Australian born,



**Ryan Gambin, son of AGCSA President Jeff Gambin (below), will contest the 100m butterfly at the 2008 Beijing Olympics**



his grandparents' heritage meant that he was eligible to gain citizenship and therefore represent the small Mediterranean nation.

Narrowly outside the top tier of Australian swimmers for a number of years, the opportunity to swim for Malta was too good an opportunity to pass up and after completing all the necessary documentation Gambin gained his Maltese citizenship at the start of the year.

Basing himself in Malta, Gambin quickly established himself as the country's newest star and at the national championships set four new records. After that meet, the Maltese Olympic Committee agreed to send him to the European Championships and Gambin didn't disappoint, easily making the Olympic B qualifying time to book himself a ticket to Beijing.

Jeff and Karen watched their son's qualifying swim over the Easter long weekend and in the weeks that followed were inundated with calls from those within the turf management industry congratulating them on their son's achievement.

"The Easter weekend didn't get off to the best of starts after the Rabbitohs lost in the NRL," laughs Jeff Gambin. "But watching Ryan do what he did at the European Championships more than made up for that."

"We watched his swim streamed live over the Internet and I can tell you I have never been more nervous in my life. Both Karen and I are so proud of what he has achieved because we know how much hard work he has put into this."

"It has been his dream since he first started swimming at the age of seven and to now have the opportunity to go to an Olympic Games is so special for us all."

News of Gambin's efforts quickly made the headlines around the country and Melbourne-based sports radio station 1116 SEN ran a 20-minute interview with Malta's newest swim star on its midday show The Good Oil.

The response to that interview was overwhelming with the station inundated by calls from members of the Maltese community in Melbourne offering to donate money to assist Gambin in realising his Olympic dream.

The following day Speedo Australia general manager Rob Davies was on the same show donating one of his company's much-talked about hi-tech LZR Racer swimsuits. The new swimsuits have created a stir in recent months with no less than nine new world records being set by swimmers wearing the special 'water-repellent' suits.

Not surprisingly, Gambin also featured widely in the Maltese media following his qualification and more good press could follow if Gambin has his way. Despite already qualifying for Beijing, he now has his sights set on the 200m butterfly and 50m freestyle events and is due to compete at two World Cup meets in Athens and Rome in the coming months. Gambin is also hopeful of being able to train with the Italian and Spanish national swim teams in the lead up to the Games.

The AGCSA has also got behind Gambin and has pledged to help Ryan in his preparations for the Games, starting up a fund which the turf management industry can donate into. For more information about the fund, contact Scott Petersen at the AGCSA on (03) 9548 8600 or email [scott@agcsa.com.au](mailto:scott@agcsa.com.au)



## TGAA FORMS NATIONAL EXECUTIVE

**T**he Turfgrass Association of Australia (TGAA) has formed a national executive consisting of representatives from each TGAA region, with administration to be managed from both NSW and Victoria.

The national executive, which had its first meeting in Brisbane in late February, will work to continue the growth and development of the association throughout Australia and represent its members through continued improvement, education and development of the industry.

At that meeting it was also announced that a Queensland branch of the TGAA would be developed to provide all turf managers and trade reps in the state with networking and educational opportunities.

In other TGAA news, the NSW branch has decided on a new look and has changed its name to the Sports Turf Association, NSW, to boost its profile and marketing potential.

"We believe that the new name is a strong reflection of who we are and what we do and provides great potential to continue to grow and strengthen our association," says president Graeme Logan.

"The purpose and mission of the association remains the same, as does our commitment to our members and we are still proudly associated with the other TGAA regions throughout Australia."

The STA NSW will officially launch its new name and logo at its Sports Turf Seminar on 15 May at the Sydney Showgrounds.

## LEAVE SCRUFFY AT HOME

LETTER TO THE EDITOR

**I**would like to pass comment on your feature article in the most recent magazine titled "Tails from the Turf" (Australian Turfgrass Management Volume 10.2 – March April).

Let me preface these comments by saying that in no way could I be considered a dog hater, having had a number of dogs during my life. However, the notion that a dog should be encouraged to spend work time out on the golf course is bordering on unprofessional. I realise these statements will not endear me to certain superintendents, but please consider the risks you may be putting yourself, your staff, your club and even your beloved dog.

One superintendent regales the story of his dog being run over by a golf cart. Luckily, in this case, the dog survived. Imagine if, for instance, the golf cart was parked close to a steep bunker or a water hazard. The driver of the cart panics upon realising he has probably injured the dog, loses control and drives into the hazard. You can surmise the possibilities to the driver.

Or another dog spots a duck nearby, takes off chasing it, and a group of junior golfers is between the dog and duck. Some years earlier, one of the juniors had been the victim of a dog attack. I know where most people's consideration should be.

These scenario's could go on forever... involving a dog's urine and faeces, time and attention given to ensuring a dog's good behaviour and many, many possible



disasters waiting to happen. Not so many years ago, front end loader operational safety was secondary and four-wheel motor bikes were numerous, but accidents have woken us up to these dangers. Please be proactive in this instance too!

There would not be a single OH&S officer that could endorse a dog's attendance at our workplaces. I also wonder how many times a prospective superintendent has turned up at a job interview with their dog in tow?

I realise the article was meant to have a light hearted tone, but I implore any 'professional' to think carefully before putting 'Scruffy' in the ute. Take the dog for a walk in the park, where leads are required for a very good reason.

Colin Foster

Patterson River Country Club, VIC



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## Toro expands aeration line

Toro has introduced two new additions to its aeration line – the Toro ProCore 864 and ProCore 1298. The new models expand on the highly popular ProCore 648 and provide a solution for large scale aeration applications.

The 864 has eight coring heads and is 163cms wide, while the 1298 has 12 coring heads and is 249cms wide. Both are tractor-mounted, PTO-driven units designed for large-area applications. Core aeration reduces compaction, improves gas exchange and creates drainage channels for better water movement and stronger plant root systems.

"Aeration is one of the most critical jobs for continued turf health," says Kris Lindstrom, marketing manager for Toro cultivation products. "The Toro aeration equipment incorporates years of research, including valuable feedback from many turf management professionals. The Toro aerators are durable and productive, providing user-



**Toro's new ProCore 864 aerator**

friendly solutions."

The ProCore 864 and Toro ProCore 1298 boast precision-balanced coring heads which eliminate hopping, rocking and unnecessary vibration and are designed to be compatible with Toro's Titan tines. The new additions also slot in with the Toro's other aeration products, including the ProCore Processor.

**For more information about the complete line of Toro aeration products, contact your local Toro distributor.**

## MENTAY ROLLS INTO DUBAI

The ICC Cricket Academy based Dubai has purchased a stack of Mentay equipment in its aim to produce a state-of-the-art training facility in the Middle East nation.

Academy head curator Tony Hemming, who before heading to Dubai was in charge at Aurora Stadium (Launceston) and Optus Oval (Melbourne), will take delivery of three container loads of Mentay products, including two Mentay 2000 mid-range rollers, one with a concrete barrel and one water filled.

Also making the journey are three concrete Mentay Hydra Glide walk-behind rollers along with one water-filled walk-behind. This equipment is complemented by two oval rollers and a Mentay turf crusher.

Hemming is also bringing in a number of small hand rollers of various sizes for between innings as well as two Aqua Wizz pedestrian absorption rollers and Kev's Keepers to hold down wicket covers.

**For more information on the Mentay range of products, freecall 1800 037 075 or visit [www.mentay.com.au](http://www.mentay.com.au)**

## HUNTER REDESIGNS PRO ADJUSTABLE NOZZLES

Listening to and acting upon customers' requests, Hunter Industries has redesigned and launched its all-new line of Pro Adjustable Nozzles.

"The new Pro Adjustable Nozzles have been redesigned and precision-engineered as a direct response to contractors' feedback," says Hunter senior product manager Gene Smith. "From uniformity to adjustability and crisp edges, among others, we've addressed every area regarding the prior adjustable nozzles."

The result is a new line of Pro Adjustable Nozzles that offers improved performance, with a new thicker flange that makes adjustments significantly easier. The new nozzles also better emit water to offer improved appearance and distribution as well as bigger droplets.

What used to be less-than-satisfactory edges are now sharp and well-defined. The enhanced design also throws water longer to eliminate short trailing edges, common before, and maintains a matched precipitation rate. Further, the five 8', 10', 12', 15' and 17' nozzles are colour-coded by radius for easy identification.

In other company news, Steve Abernethy has been promoted as Hunter's new executive vice-president of sales, while Gregory Hunter has been promoted to a similar position in marketing. Abernethy will have complete responsibility for both US domestic and international sales operations.

**For more information about Hunter products, contact your local Hunter distributor or visit [www.hunterindustries.com](http://www.hunterindustries.com)**

## RAIN BIRD BOOT CAMP FOR IRRIGATION PROFESSIONALS

To help irrigation professionals keep abreast of the latest developments and product knowledge, Rain Bird Australia will hold its Professional Irrigation Training Camp on the Gold Coast from 23-27 June.

To be held at the Holiday Inn, Surfers Paradise, the camp will include a series of training sessions and classes specifically designed to supplement the knowledge of those already experienced in professional irrigation and to introduce newcomers to the industry.

The sessions cover areas from basic design principles, wire tracing and general troubleshooting to certified training, knowledge of decoders and an operator's course on all Rain Bird's central control systems. Two new additions to the course this year will be on Maxicom Level 2 and irrigation efficiency.

"The science and methodology involved in the irrigation of reserves, ovals, golf courses, nurseries, farms and other large irrigated areas has progressed at a rapid pace during the last few years with the introduction of better techniques and sophisticated computerised irrigation technology," says Rain Bird national sales manager Wayne Brown.

"The training camp is designed to teach everyone involved in irrigation management all there is to know about state-of-the-art irrigation technology in an educational environment with practicable application.

"In Australia, water conservation is at the forefront and you cannot afford not to be getting the most out of your system. The courses have been developed for golf course supervisors, irrigation contractors and dealers, council employees, horticulturists, farmers and anyone who is responsible for maintaining and managing large tracts of irrigated areas."

**For more information about the Rain Bird Academy Professional Irrigation Training Camp, call 1300 362 656. A registration form can also be downloaded from [www.rainbird.com.au](http://www.rainbird.com.au)**



**Rain Bird will conduct its Professional Irrigation Training Camp in June**



## NEW HOPE FOR BAYER

Bayer Environmental Science (BES) has appointed Nadine Hope as its new Victorian sales manager. Hope will be responsible for green sales in Victoria and takes up the position having been responsible for administering the BES 1800 technical line. Hope can be contacted on 0417 300 405 or email nadine.hope@bayercropscience.com

## ECOLOGIC EXTENDS RGF'S ENVIRONMENTAL PROGRAMME

Ecologic has announced the release in Australia and New Zealand of RGF Environmental Group's Washmaster range of wash water reclaim systems as part of its growing Environmental Golf Programme.

Considering current water restrictions and the gradual tightening of EPA discharge regulations, closed loop wash water reclaim systems are quickly becoming best practice at many golf course and turf management maintenance facilities.

"For a long time it's been hard to track down definitive environmental regulations on golf course equipment maintenance. Now with the emergence of qualified environmental management guides it's becoming a case of combining new technology with common sense to achieve best practice," says Ecologic director Tony Julian.

"RGF has provided the US golf industry with leading environmental programmes for the past 20 years. Ecologic is extending RGF's golf programme here in Australia to assist clubs large and small in achieving compliance and sustainable operations."

In an effort to promote and support the golf industry's push for environmental compliance, Ecologic will be rolling out 'ecoGolf' over the coming months to assist courses and superintendents in the environmental management of their maintenance operations.

**For more information on the Washmaster range and Ecologic's Environmental Golf Programme, email [info@ecologicintl.com](mailto:info@ecologicintl.com), au or call Tony Julian on (07) 5535 1615.**

## TICK OF APPROVAL FOR RAIN BIRD NOZZLES

Rain Bird's rotary nozzles have been awarded the Smart Approved WaterMark, a sign of distinction devised to assist in the conservation of water.

The Rain Bird rotary nozzles have multiple rotating streams that deliver close-in watering and even coverage throughout the radius range, while the low precipitation rate of 15.2mm/hr significantly reduces wasteful run-

off. Designed to fit on Rain Bird spray heads, rotary nozzles provide design flexibility and efficient water distribution from 4-7.3 metres.

With about 60 per cent less flow than conventional spray nozzles and an expanded radius of throw, rotary nozzles allow more heads per zone, resulting in lower costs as fewer zones are required. Rotary nozzles are ideal to solve problems caused by diminished pressure or stretched spray.

**To find out more about Rain Bird rotary nozzles, freecall 1800 424 044.**

## PHILMAC APPOINTS NEW MARKETING MANAGER

Australian pipe fittings manufacturer and distributor of water management products, Philmac, has appointed Russell Schrale as national marketing manager.



**Russell Schrale**

Schrale will be responsible for Philmac's marketing team and will lead the company's marketing activities across Australia. He will also manage marketing for Philmac's sister company Aquadux, which distributes products for the plumbing industry.

## NUFARM'S WISE WEBSITE

Nufarm is set to release a new decision support tool called Spraywise Decisions which will aid pesticide applicators in planning their spray programmes based around forecasted weather conditions. The new website will help applicators plan to spray in the best conditions to maximise performance of chemicals.

Superintendents, turf farm managers, spray applicators and distribution customers will be able to access the Spraywise Decisions website which will provide up to a 14-day forecast for weather. The website will also have a spray planner that provides a snapshot of the next five days. The planner incorporates all the key climate factors that affect spray application and performance and presents them in an easy to interpret chart.

"One of the key features of the website will be its site specific accuracy," says Nufarm's Harry Pickering. "The website uses information from the BOMs weather stations and processes this data with local topographic data to produce a local forecast for your selected point of reference. This effectively provides the user with a virtual weather station for every one square kilometre grid across Australia."

**For more information or to register your interest in Spraywise Decisions, go to [www.spraywisedecisions.com.au](http://www.spraywisedecisions.com.au)**

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Lawn Care – A Handbook for Professionals.....	\$222.86	\$193.80
Management of Turfgrass Diseases -3rd Edition .....	\$244.37	\$212.50
Managing Bermudagrass Turf – Selection & Construction .....	\$229.31	\$199.40
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Noxious Weeds of Australia – Revised Edition .....	\$280.36	\$243.80
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Sports Turf & Amenity Grasses – A Manual for Use & Identification .....	\$122.24	\$106.30
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Turf Irrigation Manual .....	\$179.74	\$156.30
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& Grow-In .....	\$213.54	\$185.70
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Turfgrass: Agronomy Monograph No 32.....	\$192.50	\$221.38
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Turfgrass Management – 7th Edition .....	\$284.63	\$247.50
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Weed Science: Principles & Practices .....	\$284.63	\$247.50
Weed Ecology: Implications for Management 2nd Edition .....	\$401.11	\$348.80
Weed Control Handbook: Principles 8th Edition .....	\$363.74	\$316.30

<b>WATER &amp; IRRIGATION</b> .....	<b>Non-Member</b> .....	<b>Member</b>
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Design & Construction of Small Earth Dams .....	\$230.00	\$200.00
Drainage for Sportsturf & Horticulture (PB) .....	\$ 58.53	\$ 50.90
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Evaluating Turfgrass Sprinkler Irrigation Systems (leaflet).....	\$ 11.50	\$ 10.00
Fertigation.....	\$253.00	\$220.00
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The Surface Irrigation Manual .....	\$316.25	\$275.00
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Wastewater Re-use for Golf Course Irrigation .....	\$275.00	\$316.25
Water in Australia: Resources & Management .....	\$118.75	\$136.55

## BEST SELLERS FOR 2007/2008

Turf Managers Handbook for Golf Course Construction and Grow-In – B. Charles
Destructive Turfgrass Insects, Biology, Diagnosis and Control – Daniel A. Potter
Discovering Donald Ross-The Architect & His Golf Courses – Bradley S. Klein
Growing Media for Ornamental Plants and Turf – 3rd Edition – K. Handreck, N. Black
Golf Course Management & Construction – Environmental Issues – James Balogh and W. Walker
Golf Course Irrigation System – Design and Drainage – Edward Pira
Keepers of the Green – A History of Golf Course Management – Bob Labbanace
Turf Managers Handbook for Golf Course Construction, Renovation and Grow-In – B. Charles
Turf Management for Golf Courses – James B. Beard
Turfgrass Soil Fertility & Chemical Problems – R. N. Carrow, Waddington & Rieke

Please note: All prices include GST - Prices are subject to change without notice

The AGCSA has an extensive range of books that can ordered through the AGCSA website, and also through the accompanying order form.

Postage: \$9.90 for first book and \$1.10 for every book after.



## Good Gardens With Less Water

By Kevin Handreck

CSIRO. 2008

Water restrictions have become a way of life in Australia in recent times and both the professional and amateur horticulturalist have felt their impact in varying degrees.

Professional turf managers have had to call upon every ounce of their skills to keep their facilities alive during these harsh times, while home owners around the country have had to adjust their watering practices, whether it's siphoning greywater from the Fisher and Paykel into buckets or getting up with the sparrows to handwater on selected days of the week.

'Good Gardens with Less Water' is written by well-known former CSIRO soil scientist Kevin Handreck, who was responsible for the highly popular turf industry reference text 'Growing Media for Ornamental Plants and Turf.'

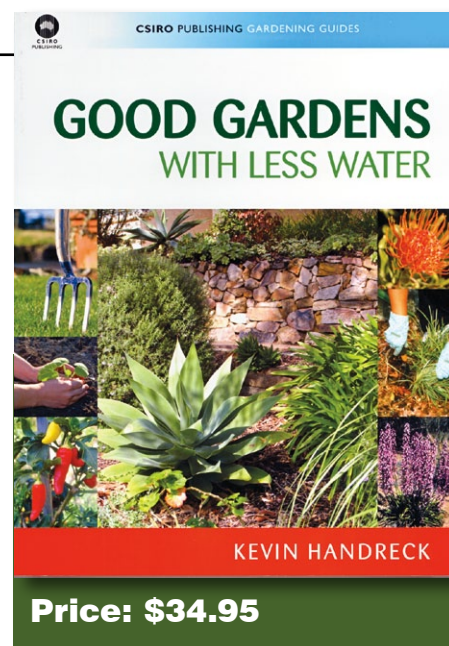
Written as a practical guide to gardening with limited water, this companion to Handreck's earlier book 'Gardening Down-Under' is the first in a series of gardening guides to be published by the CSIRO. Other books to follow in the series include 'Creating Your

Eco-Friendly Garden' (by Mary Horsfall) and 'Sustainable Gardening' (by Roger Spence and Rob Cross)

The key premise of Handreck's new book, which hit the shelves in mid-April, is that it is possible to have a great garden anywhere in Australia, even under the toughest water restrictions. All it takes is a bit of planning, research, dedication and the perfect marriage of a few key 'characters' as Handreck calls them – water, the plants themselves, and the growing medium.

Running to 166 pages, this fully-illustrated book contains a wealth of information on topics such as: how to improve soil structure to maximise the retention of water for use by plants; selecting drought-tolerant native and exotic plants; working out how much water to apply to different types of plants; choosing the best lawn grass for your climate; rainwater harvesting and use; and how to avoid problems when greywater is used in the garden.

With specific chapters devoted to watering systems and equipment, mulches, planting techniques and potted plants, Handreck's latest offering provides practical solutions for



anyone who wishes to garden sustainably. The chapter on lawns, in particular, is the first serious published discussion about using Australian native grasses in place of more traditional imported varieties.

Although 'Good Gardens with Less Water' is aimed primarily at enthusiastic home gardeners and new home owners, it will also have value for horticulture students, irrigation contractors and other horticulture professionals responsible for the maintenance of garden areas who are looking at reducing water inputs while at the same time improving quality. 🌱

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Email: [info@agcsa.com.au](mailto:info@agcsa.com.au)

Who would have believed how mild the weather has been at the start of autumn. After all the rain at the start of the year, most would have been expecting a hot and humid time but this has not eventuated. Let's hope the weather forecasters are right with the prediction of above average rainfall over the next couple of months as Brisbane's catchments are still under the 40 per cent mark.

Recently the Queensland golf industry held its annual awards night at the Raddison on the Gold Coast. The GCSAQ handed out four awards on the night with Pacific Golf Club superintendent Graham Sims presented with the Superintendent Achievement Award for his 30-year involvement in the industry.

Sims began his turf management career at Dalby Golf Club in 1977 before moving across to Pacific Golf Club in 1982. The following year he was elevated to superintendent, a position he still holds today.

The other GCSAQ awards went to Chris Robinson (St Lucia Golf Links) - Turf Apprentice of the Year; Brett Michlewright - Recognition Award; and Wayne Marshall (Bargara Golf Club) - Environmental Award. Congratulations to all the winners and all those who were nominated for the awards.

Upcoming field days to mark in the diary



Graham Sims

include the Globe Day at the Titans' new stadium at Robina on 29 May and the Country Bus Tour to Gatton and Toowoomba on the weekend of 21-23 June.

The newly formed Queensland Turf Equipment Technicians Association recently held its second field day in the state. Held at Toro's Brisbane headquarters the day was very well patronised with around 40 delegates in attendance. At the meeting a committee was formed which comprises of:

**President:** Phil Newton (Horton Park GC)

**Treasurer:** Steve Kippin (Brookwater GC)

**Secretary:** Dylon Higgins (Hyatt Cooloom)

**ROD COOK**  
PRESIDENT, GCSAQ



# NSWGCSA

The NSWGCSA Board had its first meeting of the year at Shortland Waters Golf Club in February. At that meeting I informed the Board that after six years on the committee this would be my last year with the association.

It has been a very busy six years both personally and professionally for me. During this time I have changed employers, sold and bought a house, got married, had three kids and took on the president's position! We are now at the stage where my oldest boy has just started school and sport, and as all parents know the next level of parenting begins.

I have loved every minute serving on the committee and there are many things I have enjoyed about being involved with the association. The highlights would be getting to know the many different people within the industry and working with the many superintendents who have given their valuable time to continually improve our industry.

I believe our industry is only in the position it is in because superintendents give up their time to give something back. The passion which some superintendents possess is quite unbelievable and I'm sure would not be found in many industries.

The NSWGCSA Board is currently reviewing portfolios for the future and I invite anyone who would like to be involved to contact the association. I strongly recommend that if you are interested to act now.

The AGCSA continues to improve and provides a great guide for all state associations. I believe that with John Neylan and Scott

Petersen at the helm, the industry is in great hands.

## UPCOMING EVENTS

As grass growth slows down, work for the committee starts to pick up with the winter and spring months busy organising many association events. In April we hosted the Rube Walkerden day at Killara Golf Club (host superintendent Bill Hopkins, who by the way is now in his 33rd year), while the second annual assistant superintendents education day will be held in early May. Then we have the annual Ambrose event in June, the Australian Turfgrass Conference in July and the NSWGCSA AGM in August.

Last year, the Board decided to run an assistant superintendent day which proved to be a great success. In light of the support the initiative received, the day will run again this year at Castle Hill Country Club on 5 May.

Daryl Sellar heads the list of presenters and will look at HR and best practice challenges heading into the future. Host superintendent Martyn Black will look at the topic of managing management, while Dennis Jeffers (OzEco Management) and Brett Goldsworthy (Shift2Neutral) will also make presentations.

St Michael's Golf Club assistant superintendent Wes Saunders has organised the event, and we will be calling upon help from assistants to help ensure this year's event



Daryl Sellar

is even more successful. Cost for the day is \$35 for NSWGCSA members and \$45 for non-members.

The association's annual Ambrose event returns to the Hunter Valley and this year will be played at The Vintage Golf Club, venue for the NSW Open. The day is always well supported and this year will be no exception.

I would like to recognise and congratulate Michael Freeman and the Victorian Golf Course Superintendents Association for the development of their Occupational Health and Safety DVD. The NSWGCSA has viewed the disk and was very impressed.

The NSWGCSA is currently looking into how we can distribute the DVD to all members of our association as we believe it will help in new staff inductions and assist with current OH&S programmes in place. Well done to all involved.

Finally, I would like to take this opportunity to thank everybody who has helped me or just had time for a chat during my two terms on the Board. I would encourage all superintendents to get involved and help make the industry even stronger than it already is.

**ANDY HUGILL**  
PRESIDENT, NSWGCSA



New Zealand superintendents are starting to get an idea of what it must be like over in Australia after most of the country was severely hit by drought conditions over summer. After the longest summer most can seem to remember, it begs the question whether we will have to start contending with water restrictions that you across the Ditch seem to deal with almost on a regular basis.

Recently the NZGCSA held a special general meeting to adopt some constitutional changes. This coincided with a meeting of NZGCSA Board and a full meeting of representatives from the nine regions that make up our national body. From a Board perspective it was very encouraging to see the commitment and passion that the regional representatives brought to the meeting. They represent their regions and themselves very well and some great discussion was engaged in over the day.

While only new in the role of NZGCSA president yet having sat on the Board now in various capacities over the last six years, to see a new generation of interested parties

combined with a few of the older heads leads me to believe our association is certainly heading in the right direction.

Recently through the help of Steve Marsden, a field day incorporating most of the North Island regions was held at Kinloch where Dean Scullion from e-par was able to explain this system to an audience of nearly 100. Following on from this day and subsequent correspondence with Dean and Terry Muir, the NZGCSA is now in the process of trying to help bring this system into New Zealand.

As 2008 is the 'in-between' year here in New Zealand for our major turf conference, two smaller fine turf seminars will be conducted this winter. The first seminar will be held in Nelson from 23-25 June (hosted by the Canterbury association) and will incorporate the NZGCSA AGM. We thank them for making time in their programme to accommodate us.

The second seminar, which carries the title 'Back to Basics', will be in hosted by the Taranaki association from 30 June-1 July in New Plymouth. These regional seminars have certainly become very popular and no doubt

both of these events will be well patronised again and are a great way to keep up with current trends and catch up with like-minded people.

Talk around the traps indicates a fair few people are planning on making the trip to 24th Australian Turfgrass Conference in Melbourne. I am personally looking forward to catching up with you all again in July.

At the time of writing this report, a replacement administration officer of the NZGCSA had not been appointed but things have been progressing along with the help of our previous employee. We hope to be able to announce the new person shortly. In the meantime, contact with either myself or any representative of the NZGCSA can be made through our website [www.nzgcsa.org.nz](http://www.nzgcsa.org.nz) or email [nzgcsa@xtra.co.nz](mailto:nzgcsa@xtra.co.nz).

I hope the weather and footy tips are treating you well.

**PETER BOYD**  
**PRESIDENT, NZGCSA**



## AN INVITATION SUPERINTENDENTS AND YOUR STAFF

AGCSA golf course membership is open not only to superintendents but to all those employed in golf course maintenance roles. Groundstaff, specialists and superintendents alike need to receive meaningful information and support that will equip them with the skills to one day lead and advance the industry into the future. Golf course management staff will benefit from the following:



### BENEFITS

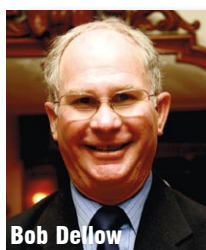
- Discounted conference registration
- One free AGCSA workshop per year
- Access to the AGCSA Accreditation Programme
- Subscription to the Australian Turfgrass Management magazine
- AGCSA newsletters
- The Cut email newsletter
- Free legal advice
- Discounted AGCSATech services and advice
- Access to the members-only section of the website.

Discount packages are being developed for the 2008-09 membership year – look out for the next members newsletter or contact AGCSA for more information.

To join contact Pip Dudley on (03) 9548 8600 or [info@agcsa.com.au](mailto:info@agcsa.com.au)



It was great to see so many SAGCSA members at our February meeting at The Grange Golf Club in support of new superintendent Richard James. Richard and his team had the two golf courses in great shape, impressing all with the quality of works taking place. Richard gave an insightful course tour and I am sure everyone appreciated the openness of his comments.



Bob Dellow

The Grange's aquifer storage and recharge project was a particular point of interest for most on the day. Project supervisor Oliver Bull (Hakea Landscape and Revegetation Services), who managed the vegetation of the wetlands that form much of the ASR scheme, gave a summary on plant selection and the challenges of planting out the site. This took us through to lunch and a series of presentations from several of our sponsors. Thanks go to The Grange for allowing us to host the day and to our members for the exceptional turnout.

In particular, it was great to see Bob Dellow who recently retired after a long and successful career (nearly three decades!) as superintendent at Willunga Golf Club. Bob is well known to our local contingent serving many years as an SAGCSA committee representative and on behalf of all of our members I sincerely thank him for his contribution to the industry. We wish Bob a long and enjoyable retirement.

I would also like to welcome our two newest superintendents – Mike Bosley, who has recently accepted the post at Thaxted Park Golf Club, and Paul Cameron who has taken over from his famed predecessor at Willunga.

I hope everyone has a successful autumn period and I am sure everyone was glad to see the back of the March heatwave which smashed all capital city records with the longest period of consecutive days over 35 degrees.

For the record, Adelaide had 15 consecutive days over 35 degrees, eight days in total over 39 degrees and three days that saw the mercury soar above 40 degrees. All this at a time when superintendents were nursing dwindling irrigation supplies and turf that had been through six months of low rainfall. Let's hope we never see that record beaten.

**ANDREW BLACKER**  
PRESIDENT, SAGCSA

The TGAA NSW has recently received a bit of a makeover and will now be known as the Sports Turf Association, NSW Incorporated. The change came about after a review of our identity and marketing ability and the committee believed that the new name was the way to go. Our aims and objectives haven't changed and we are still proud to be associated with the other TGAA regions throughout Australia.

The first official event under the new Sports Turf Association banner will be the Sports Turf Seminar and Tradeshow to be held on Thursday 15 May at the Sydney Showgrounds. Presentations include Dr Jim Hull on the role of carbon in soils, Andre Wyzenbeek on monitoring technology available to turf managers and Terry Muir who will look at carbon emissions and what they mean to the turf manager.

We will also have Rebecca Barry from the Sydney Showgrounds providing valuable

## TGCSA



Since the last TGCSA report, we held a very informative day at Quamby Country Club near Westbury. The day was sponsored by KBE Machinery with Geoff Koop and Neville Bakes giving us a presentation on a range of their equipment.

Paul Yeates from Serve Ag talked about turf nutrition in relation to disease management, before Patrick Madden from Syngenta followed up on spray efficiency and nozzle technology. Patrick fielded a lot of questions on this interesting topic and he will feature again in one of our upcoming education days. Roger Tyshing also spoke about the drum-MUSTER programme in Tasmania.

The day finished with nine holes of golf, drinks and presentations which were sponsored by Simplot. A big thank you to superintendent Nelson de Silva to make the course and clubhouse available. Nelson had been working on the homestead and reckoned he hadn't been spending much time on the course. Well Nelson, you had it in great shape for us, so many thanks.

The next TGCSA meeting is in Hobart at North Hobart Oval on 7 May. The day will see a tour of the oval and an update on future ground developments, while Patrick Madden will be back to continue the interesting spray

information on staff management, including dealing with managers and getting the best out of your staff. As always there will be an extensive tradeshow and presentations from sponsors.

We recently held our annual golf day at Ashlar Golf Course and everyone attending had a great time. The course was in brilliant condition and full credit to superintendent David Stone and the staff at Ashlar for all their hard work. Many thanks to all the great sponsors who supported the day and thanks to the members who came along to play. Congratulations to the boys from North Sydney Oval who took out the trophy.

The Sports Turf Association, NSW Inc. can be contacted at [info@sportsturf.asn.au](mailto:info@sportsturf.asn.au) or phone the office on (02) 8883 4688. You can also check out the new website at [www.sportsturf.asn.au](http://www.sportsturf.asn.au).

**GRAEME LOGAN**  
PRESIDENT, STA NSW

efficiency topic. As things begin to slow down a little we hope to see a good turnout for this meeting.

On the movement front, it has been fairly quiet, although immediate past president Peter Medwin has landed back in Victoria. Peter has moved on from Riverside and headed back to the mainland where he is now at Maryborough. There must be something attractive over there Pete! Also, good luck to Cameron Hodgkins who has moved back to the MCG after a successful stint at Bellerive Oval.

Don't forget the 24th Australian Turfgrass Conference in Melbourne from 21-25 July. Being so close to home it's a great opportunity to hear some great speakers, catch up with friends and see the latest in turf equipment.

**STEPHEN LEWIS**  
PRESIDENT, TGCSA



Cameron Hodgkins



**W**hat a summer for Melbourne! Hot and dry right through until March with rainfall totals of 19mm for (January) and 27mm for February. March was looking just as lean, then came a major dumping in the last week of the month, with some sandbelt courses revelling in falls of up to 80mm. Even with that respite we still need some major falls to ensure our surfaces head into winter with the best possible coverage.

With long dry summers and low rainfall now a common theme each year, Victorian golf course superintendents are looking at different alternatives to survive in the drought conditions that have been impacting on the state for the past five years.

Some very clever superintendents have been installing stormwater harvesters, desalination plants and enlarging dams to ensure that water quality and storage can help them through these dry periods (see Water Management section pg 56).

I'm sure everyone has a situation on their course and would only be happy to share the



**Royal Melbourne will host the 2008 VGCSA AGM in late May. Pictured is the 13th East**

information with their fellow colleagues. So when the next VGCSA day is on, make sure you attend and talk to different superintendents who are doing it just as tough.

For those who made the effort to travel to Port Fairy for our country meeting in early April, a great day was had by all and many thanks go to Globe for sponsoring the event. It was fantastic to see some of the country superintendents join the day with a relaxed atmosphere.

The golf course was in great shape and you can see why it is ranked so high in Australia. It's a credit to superintendent John McIlroy to turn out such a good course with a limited budget and resources.

The VGCSA has finalised its OH&S DVD with a lot of interest shown within the industry. Thanks to Toro Australia for their generous support so that all A-Class members of the association receive a free copy of the DVD which will be mailed out in May 2008.

The next gathering for the association will be the Annual General Meeting at Royal Melbourne Golf Club on Monday 26 May (host superintendent Jim Porter), sponsored by Toro. To be able to play a round of golf at Royal Melbourne is a privilege, so get in early to avoid disappointment.

**MICHAEL FREEMAN  
PRESIDENT, VGCSA**



## LOOKING FOR STAFF OR A BETTER JOB?

**The most effective means to securing turf maintenance staff in Australia is to advertise through the AGCSA "Jobwatch" section on the website.**

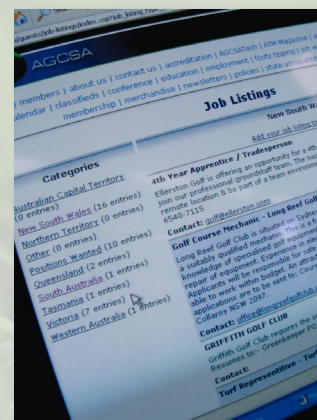
The AGCSA would be pleased to host an advertisement for your vacant position.. The cost for your job advertisement is \$220 inc GST for current AGCSA members, \$250 inc GST for non members. Positions wanted are placed free of charge. The advertisement will be displayed for as long as it takes to fulfill your requirements.

### Testimonial

*"On behalf of the Board of Directors of Parkes Golf Club I must congratulate the AGCSA for the support you gave us in obtaining a new head greenkeeper. We received some 18 applications for the position and it was arduous yet very satisfying in doing so many interviews as we could have offered the position to any one of six applicants. Once again thanks for your cooperation. It has been a pleasure dealing with you." - Paul Thomas, President, Parkes Golf Club.*

### Jobs posted recently...

Assistant Superintendent: Keysborough Golf Club (VIC)  
The Lakes Golf Club- Irrigationist (NSW)  
Assistant Superintendent: Thaxted Park Golf Club (SA)  
Superintendent: Geraldton Golf Club WA



Lodge your position yourself through the Jobwatch section or contact the AGCSA HR and Best practice manager Daryl Sellar [daryl@agcsa.com.au](mailto:daryl@agcsa.com.au).

## TGAA ACT

Along with the cooler weather, the ACT and surrounding region has also received some significant rainfall which has topped up many dams and helped to alleviate many problems associated with the drought. Although these conditions have helped to reduce total water usage, local turf managers are still facing the real threat of increased restrictions and higher prices for water.

In light of the current climate, the TGAA ACT and its sponsors will hold a one-day seminar on problems associated with water usage and the drought on Wednesday 2 July. It will cover such things as transition planting of couch, both seed and vegetative, management tools and techniques, new products and practices and maximum utilisation of a minimal resource, namely water.

The seminar has been tailored to meet the requirements of a wide range of turf situations many of which are integral to sports grounds

managers. With water being such a finite resource these days, no turf manager can afford to miss out. For details please contact Gary Dawson on (02) 6207 4605.

On 1 May the TGAA ACT held its Grant King Memorial Golf Day at Gold Creek Country Club which proved to be an enjoyable day for all. This event has no doubt become a regular calendar event for the TGAA ACT in commemoration of the dedication and influence Grant had on the turf industry.

The TGAA ACT would like to take this opportunity to thank all the participants including sponsors, organisers and Gold Creek superintendent Scott Harris and his staff for presenting a beautifully prepared course. It has been decided that the event will be held at Gold Creek annually due to the connection Grant had with the club.

An excellent way to gain access to the latest up-to-date information on such things as turf equipment, products and techniques is the

Internet. It is apparent that many greenkeepers are not utilising this service to its full potential and that increases in services are being given online.

If you are interested but having difficulty in locating particular information, the TGAA ACT has put together a database of turf related websites. To receive a copy of this please contact the association. You can also check our web site at [www.tgaa.asn.au](http://www.tgaa.asn.au).

Also, all TGAA members know that part of the benefits of being a member is that you receive a quarterly newsletter. We at the TGAA ACT wish to invite any submissions you may wish to include into our next edition. Please contact Bruce Davies on (02) 6207 4623 for prospective articles. Till next time, agrostologists.

**JUSTIN A. K. HASLAM,  
COMMITTEE, TGAA ACT**

## GCSAWA

Most of us here in the west were glad to see the back of a hot dry summer which saw temperatures averaging over 30 degrees with 42mm rain in total for the summer months. We then had another 60-80mm one day in early April, so already for the year we have had an eighth of our rainfall in what is normally a low rainfall time of the year.

Lightening storms hit a few courses in the western suburbs. Here at Wembley Golf Complex lightening exploded four decoders and damaged another nine along with 500 metres of two-wire after a direct hit. Cottesloe also had to replace a couple of decoders. We would like the rain without the lightening please!

The GCSAWA committee, along with some trade members, has decided to cancel the bi-annual conference at Rottenest Island in May by majority vote. With only 30 people confirming their attendance, we needed 39 paying attendees to break even. It's disappointing that many decided and voted to have the conference at Rottneest at our AGM last August, yet many superintendents didn't follow up with the commitment of attending.

A special thank you must go out our treasurer Craig New for organising the conference and spending just as much time organising the cancellation. It was decided

that an education day will be held in June at a venue to be decided as there are various important speakers we need to present to our members.

The Golf Masters Cup has started with Wembley, Cottesloe and Gosnells all hosting the first three events with some golfing bandits showing their true nature. Numbers have been below expectations and to ensure this format continues I encourage more superintendents to come along and have a look at other clubs and check out what a fantastic job they are doing on their home turf. If you can't make it, send your 2IC as they will greatly benefit from the experience.

Apathy is alive and well in our industry which is our association's biggest hurdle. Trying to overcome this will test the association's resolve and commitment in the next few years, otherwise there will be fewer events available due to poor attendances. The committee will look at organising some educational or open forum days in the latter half of the year to provide a networking solution for the non-golfers in our association.

Many clubs throughout Western Australia have recently received a glossy brochure from a contracting company promising cheaper maintenance costs through software packages and supplies. This may be the first step in

trying to take over the maintenance of your golf club which has been the case on the east coast with disastrous consequences to the club in every instance. My only advice is to refer this to the GCSAWA and then the AGCSA and to seek advice on their track record at previous clubs.

Congratulations to Corey Bandy following his appointment as superintendent at Rockingham Golf Club. Corey started in the industry as an apprentice at Burswood and became reticulation supervisor there before moving to Wembley where he has been for the past four years. We wish him all the best in his new position.

The committee looks forward to catching up with all members throughout the year, especially in Melbourne for the 24th Australian Turfgrass Conference, and at various functions throughout the year. We are hoping to secure The Vines Resort for our AGM again this year so ensure you come along.

We will have a vacancy on the GCSAWA committee, so if you would like to have an input and contribute to our state association, contact myself or any committee persons and let us know you are interested.

**DARREN WILSON  
PRESIDENT, GCSAWA**



# DAKOTA

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"The growing-in phase of a new golf course is critical and requires detailed planning, particularly when it comes to irrigation.

When the new Settlers Run Golf Course at Cranbourne was in the early stages of planning we had no hesitation in recommending a Lowara pumping system because of its better control, long term reliability and ease of maintenance.

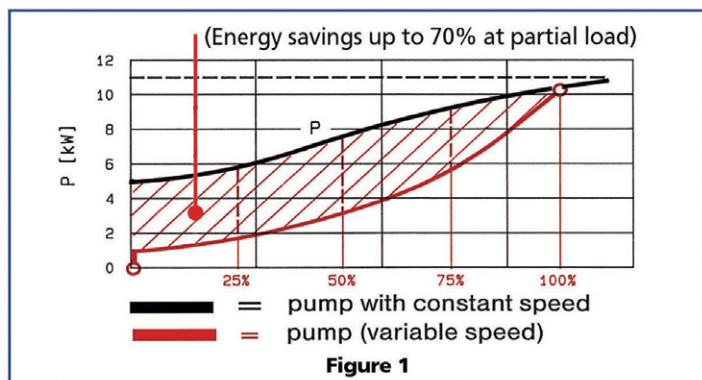
The Settlers Run pump installation incorporates 4 variable speed Hydrovars which are uniquely linked to Toro Irrigations' Sitepro software which delivers to the Superintendent precise information on the performance of the total pumping system, which is absolutely critical to the grow-in phase.

Combine that with Brown Brothers' exemplary after sales service and Settlers Run couldn't be in better hands."

**Brendan Graham, A&M Watering**

## How the Hydrovar reduces energy consumption.

Most applications involve the pump operating either along its full speed performance curve or the pumps performance is throttled or regulated by a valve. The Hydrovar eliminates these operating methods by regulating pump speed and hence output to match the system demand. This saves wasted energy traditionally lost in these conventional pump systems. Energy savings of up to 70% can be realized. (figure 1)



## What is Hydrovar?

Hydrovar has gained a reputation as THE pump mounted microprocessor pumping system controller. But it does much more than just change motor speed.

It actually manages the performance of the pump to match a wide range of system conditions and requirements.

Hydrovar is fully programmable on site as it incorporates the microprocessor and the variable drive in one compact and unique package

## How Hydrovar reduces maintenance cost.

Hydrovar software is designed specifically for centrifugal pump operation, control and protection. Hydrovar can thus be setup to protect the pump from operating under various unfavourable conditions eg. cavitation, operating against closed head, low NPSHa or operation past a pumps maximum flow rate. Hydrovar will automatically shut down and alarm if adverse conditions occur.

Hydrovar provides the Golf Course Superintendent with the flexibility of watering required with substantial savings on installation, power usage and maintenance. For details about the experience of some of Australia and New Zealand's most prestigious Golf Clubs who have installed Hydrovar pumping systems, contact the Lowara distributors nearest you.

## What is Flowlink?



To assist green-keepers and Superintendents in the golf course, turf and irrigation markets, Lowara and TORO Irrigation teamed up together to develop a link between the Toro Sitepro software and Hydrovar.

The link operates with up to 4 Hydrovar pump systems and monitor running / fault conditions and measures pressure and flow of the pump system.

All these parameters are displayed on the central irrigation control computer



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