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Kooyonga Golf Club, SA: One of South Australia's finest championship layouts, Kooyonga Golf Club will host the 2011 Toro AGCSA Golf Championships during the 27th Australian Turfgrass Conference. Pictured is the par three 7th. Photo: Brett Robinson



COVER STORY: Spotlight on South Australia

With the 27th Australian Turfgrass Conference heading back to Adelaide, ATM takes a look at some of the state capital's premier turf facilities and the recent works which they have completed or are about to undertake. ATM editor Brett Robinson catches up with Kooyonga Golf Club superintendent Steven Newell, while we also stop by Riverside Golf Club, Adelaide Shores, The Grange Golf Club, AAMI Stadium and look at the recent announcement to redevelop Adelaide Oval.

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Cleaning up Christchurch

While recovering from the September 2010 earthquake which shook the city, residents of Christchurch were dealt a cruel blow when a magnitude 6.3 earthquake struck on 22 February 2011. As well as significant loss of life, the city's many sporting and recreational facilities were severely damaged. Christchurch-based New Zealand Sports Turf Institute agronomist Jaymie Batchelor looks at how the region's sports turf managers and course superintendents have fared in getting their facilities back into play.

Sanctuary's picture perfect Palms

In its bid to have two golf courses ranked among the top 50 in Australia, Sanctuary Cove Golf & Country Club on the Gold Coast has undertaken an extensive redevelopment of the Palms course since 2009. Officially unveiled in early April, course superintendent Robin Doodson looks back on the project.



Sustainable supers

Sustainability is an increasingly important principle of doing business in the golf and turf world. Recognising this, 20 turf management facilities in south east Queensland were part of a Turf Sustainability Cluster programme in conjunction with e-par and the Queensland Government.

Kiwi experience

Inaugural AGCSA Award for Academic Achievement recipient Steve Johannessen looks back on his study tour to New Zealand in late 2010. ATM also profiles this year's award finalists.

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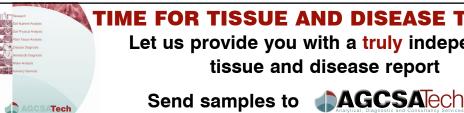
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The Adelaide Convention Centre will play host to the 27th Australian Turfgrass Conference and Trade Exhibition from 13-17 June. ATM will again act as your official guide and here we review the week ahead for delegates. Included is a rundown of education sessions, keynote speakers, trade show exhibitors as well as profiles of the finalists who will contest the AGCSA Graduate of the Year Award and the inaugural National Sports Turf Graduate of the Year.

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John Neylan visits some of the small regional golf courses affected by the December 2010-January 2011 Queensland floods and also looks at the redevelopment of Manly Golf Club.



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OPINION Unplugged

The use by maintenance staff of headphones/MP3 players and other music playing devices while working has a number of OH&S implications. The Pulse asks superintendents whether such use has caused issues at their facilities.

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University of Western Australia researchers Louise Barton and Tim Colmer highlight the results of a HAL-funded study into the incidence, severity and amelioration techniques of soil water repellency in kikuyu of two contrasting soil organic matter contents.

Improving the selection and management of turfgrass in the tropics

Bartley Bauer outlines a new three-year research project being undertaken by DEEDI in conjunction with Singapore's Centre for Urban Greenery and Ecology which will examine the adaptability of warm-season varieties to tropical environments.

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Contributors to Australian Turfgrass Management Volume 13.3 (Mav-June 2011)

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Shaken but not stirred

e all have vivid childhood memories – some good, some bad – which remain with us throughout our lives. For instance, I will never forget plucking up the courage one day at primary school to give my childhood sweetheart Caroline Peterson a surprise peck on the cheek, or the time when I nearly decapitated myself on a tree branch in the backyard while learning to ride my bike. Then of course there was David Kirk lifting the Webb Ellis trophy after the All Blacks' sole Rugby World Cup triumph in 1987 – yes, I was just a kid! (That will, of course, change this year... I hope. Where's that number for my psychologist...!)

One of the more unsettling memories, however, came on a family trip to Palmerston North. Staying with my aunt and uncle, in the early hours one morning an earthquake struck the region – not an uncommon occurrence in that part of the country – and although only relatively minor it was enough to scare the proverbial out of me. Three decades on I can still hear that ungodly rumble!

Having recently seen first-hand the devastating natural disasters to hit Queensland, to then witness the scenes in Christchurch following the 22 February earthquake proved to be just a little too close to home. It immediately brought back memories of that time in Palmerston North and although there was no way of comparing the two I could at least relate in some minute way to what was happening 'back home'.

In the days and weeks after the earthquake, it was a relief to hear that family and friends had managed to escape unscathed, although in the case of my cousin Steve and his young family they are now homeless. They have had to shift house four times in the past three months after their home was 'red stickered' or declared uninhabitable. From all reports it could be years before they can rebuild and as he so eloquently described their predicament in classic Kiwi vernacular, 'the place is munted!'

While my cousin and his fellow Cantabrians try and get their lives back on track, turf managers at the region's many sporting and recreational facilities have had the added task of repairing their earthquake-ravaged facilities. While many experienced minor damage when the first earthquake struck last September, February's 6.3 magnitude shake proved devastating, with many golf clubs, bowling clubs and sporting ovals suffering severe liquefaction and surface cracking. Even the city's premier sporting venue AMI Stadium was affected which necessitated the rescheduling of all its 2011 Rugby World Cup games, a cruel blow for the rugby mad city that Christchurch is.

In this edition, Jaymie Batchelor, an agronomist with the New Zealand Sports Turf Institute and a resident of Christchurch himself, takes a look at the wide ranging damage sustained to the region's facilities and the lengths being taken by its resolute sports turf managers to get their heavily utilised facilities back into play. Just like Australia, sport plays a huge role in the lives of so many New Zealanders, and having these facilities back up as quickly as possible is a crucial step in Christchurch returning to some sense of normality.

We also speak to ex-pat Australian Garry Worsley who for the past nine years has been the contracting superintendent at Avondale Golf Club in Christchurch. A former native of Adelaide and superintendent at Riverside Golf Club, Garry was out mowing fairways when the earthquake hit. Incidentally, Garry will be attending this year's 27th Australian Turfgrass Conference in his former home town so no doubt he'll have some stories to share over a few West Ends. Enjoy the read and I look forward to seeing you all in Adelaide.





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FOREWORD THINKING

JOHN NEYLAN, AGCSA GENERAL MANAGER

Selling the skill set of the course superintendent



he year is rapidly moving on and the Australian turf management community has already endured floods, cyclones and unpredictable weather conditions. It has been a time of humid, cloudy weather with low light conditions and often soggy turf. Not surprisingly, disease pressures have been extreme and have compounded the many challenges which already confront superintendents on a daily basis.

Having visited a number of Queensland's floodaffected golf courses in recent times, I have admired the resilience of all golf course staff involved, in particular those in regional areas where more often than not operations are managed by just one full-timer. This highlights the reality of tough greenkeeping and once again the skills of these greenkeepers have been brought to the fore as they have had to adapt to conditions not experienced for many years. Their ability to tackle a huge mess, constant setbacks, getting turf surfaces back to a playable state and then dealing with the ongoing associated problems of disease and recovering profiles, can but only be admired.

As I have mentioned many times previously, the golf course superintendent has such a wide skill set that makes them the 'go to' person when a major environmental event occurs. While it has been floods this time, the consequences and recovery has been similar to those challenges faced by golf courses affected by the 2009 Black Saturday bushfires.

Given the importance and all-encompassing nature of the course superintendent's role, it was therefore somewhat alarming to learn early in the New Year of the decision by one golf club to make the position of superintendent redundant due to financial difficulties. There were several aspects to the redundancy that make you realise there is often little justice in this business, the most galling being that the golf course had always been in great condition during the superintendent's tenure.

The really disturbing aspect, however, was the decision by the club that all administrative duties normally associated with a superintendent's role were to be taken on by non-greenkeeping staff. It made me wonder what training these others have and why was the superintendent made redundant and not another senior manager? Is any one senior position at a golf club any more or less important than another? Undoubtedly each position has its own set of expertise, but let's not forget that most golf clubs are judged by the condition of the golf course and not how cold the beer is.

In light of this case, it is worthwhile reviewing the skills that a qualified golf course superintendent brings to a golf club. They have to have a detailed knowledge of:

- Agronomy and surface preparation;
- Managing staff that have a range of expertise and personalities;
- Project management;
- Occupational health and safety (an area that is severely neglected inside many clubhouses and at a management level);
- Environmental management (who is often listed as the responsible person to comply with hazardous goods legislation);
- Budgets and inventory management;
- Report writing;
- Preparing specifications;
- Purchasing equipment; and
- Diplomacy (having to deal daily with the comments of 'experts' in a polite and considerate manner is the greatest skill of all).



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Who else at the golf club has this expertise? More crucially, can this sort of job be shared around? It may be done for a short period of time but who will be ultimately responsible for the condition of the golf course? When something goes wrong (and invariably it will), who will be responsible for resolving the problem?

All too frequently we find that golf course superintendents are under pressure. It raises the question of whether the position is too demanding and if many clubs have an unrealistic view of what can be achieved. Possibly as a profession we have taken turf management too close to the edge and there is now no room for error. Are we too reactive to criticisms about the golf course and take turf management too close to that unrealistic edge?

As a profession and as an association we are still struggling to sell our expertise and the position is still at the whim of well-meaning but inexpert committees. The question is what can we do? As individual superintendents it is important to identify your strengths and weaknesses and work on the weaknesses. Where more training is required, put a case to the club for that training. If a project is proposed and is too complex, put a case for drawing in the appropriate expertise. If there are agronomic problems, it may be beneficial to bring in an independent agronomist to provide a critical overview of where things are at.

As a general observation, superintendents are too often prepared to go the extra hard yards to maintain the same course condition on a reducing budget or in response to criticism and try to do things they know are fraught with danger. It is very important to be true to what you know is right and to convey this to the general manager and board in an effective manner.

One of the key relationships in any golf club is between the superintendent and the general manager and the AGCSA has to work harder with the Golf Managers Association and the Australian Golf Industry Council to develop these relationships and to sell the expertise of superintendents. As individuals, superintendents also need to work on the key relationships in their organisation so that everyone has a clear understanding of the challenges and constraints in maintaining the golf course.

If you need help in this process, the AGCSA has a range of agronomic, management and legal expertise and resources available for members and we encourage you to find out more about them and use them to your benefit. \cancel{u}





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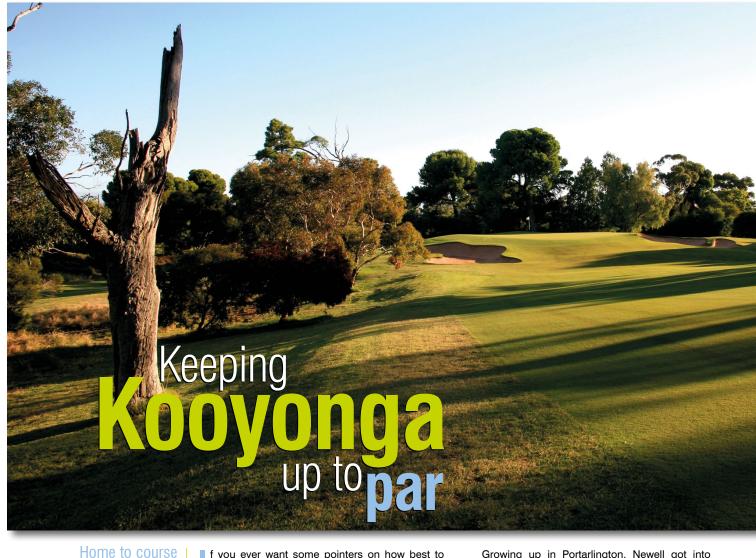
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superintendent Steven Newell for the past 13 years, Kooyonga Golf Club has recently made a number of alterations to strengthen and improve the classic Adelaide sandbelt layout. f you ever want some pointers on how best to get off a speeding ticket, then you could do a lot worse than seek the advice of Steven Newell. Within 36 hours of starting at Adelaide's Kooyonga Golf Club some 13 years ago, the newcomer to the superintendent ranks was pinged not once but twice, the first while rushing to get to the course on his very first day and the second while driving home at the end of his second day. Welcome to South Australia!

Newell succeeded in getting off both and it took a bit of gumption on his behalf to do so. In response to the first ticket he wrote a letter stating that he hadn't received a ticket in 10 years and that such a record warranted a reprieve. Successful in getting that one quashed, he then composed another letter in response to the second ticket saying that he had only received one ticket in the last 10 years. Whether an oversight or purely luck, Newell, remarkably, had that one overturned too.

While it wasn't the most auspicious start to his reign at Kooyonga, it's that sort of bold approach which has carried Newell a long way in his turf management career, one which started with humble beginnings on Victoria's Bellarine Peninsula and has since taken him to one of Australia's most respected championship courses. Growing up in Portarlington, Newell got into the game in the late 1980s after a job at Curlewis Golf Club become available through his school. For five hands-on years Newell got a solid grounding in the profession and as he reached the end of his apprenticeship put pen to paper and canvassed all the top clubs in Melbourne. Metropolitan Golf Club superintendent Peter Sawyer obviously saw something within the letter that resonated and straight away signed on Newell as a qualified groundsman, essentially handing him the break to top all breaks.

Moving to Melbourne, Newell became part of a culture which has become synonymous with greenkeeping excellence. Between the late 1980s and early 2000s, Metropolitan became a veritable finishing school for course superintendents and under the tutelage of Sawyer and then Richard Forsyth (who is now at Royal Melbourne of course), many of the club's assistants and senior greenkeeping staff would go on to be successful superintendents in their own right.

Newell would be one of those – others included Leigh Yanner (now superintendent at The National), Sam Myott (The Heritage), Nathan Bennett (The Sands, Torquay), David Mason (Riversdale) and, most recently, Adam Lamb (Barwon Heads) – and



over a period of eight years, including the last four as assistant superintendent, he would finetune his greenkeeping skills on Melbourne's sandbelt.

"Metropolitan was an excellent club to work for and the people there were very good and I think that transferred to a lot of the people that have worked there going on to bigger and better things," reflects Newell. "There was an excellent culture and strong work ethic at the club at the time. Everyone took pride in the presentation of the golf course. We knew that at the end of the day we would be judged on the presentation of the course and it was in our best interests to have it in as good a condition for as long as it could be."

While content at Metropolitan, Newell could see that the opportunity to progress within the club was relatively slim, so when the job at Adelaide's Kooyonga Golf Club was advertised he decided the time was right to take the next step. Despite having never seen the club – except for a few holes during televised coverage of the South Australian Open – or setting foot in South Australia, Newell was aware of Kooyonga's reputation and knew it was just the sort of challenge he was after.

Armed with some definite ideas on how he could improve Kooyonga's playing surfaces and with good friend and fellow Metropolitan crewmate



Nathan Bennett along for some moral support, Newell drove across from Melbourne for the job interview. A few weeks later he was making the same journey, but this time with wife Nicole and their two young children, and this time he would be staying for good.

STRAIGHT DOWN TO BUSINESS

Getting those speeding tickets overturned would prove to be one of the easier tasks during his first six months in Adelaide. Arriving at the club in May 1998, Newell had just five months to get the course up for the Ford Open Championships and in his own words the course was "in a bit of strife".

The club had just installed a new irrigation system which had gone over schedule and there were still exposed trenches on fairways and bare patches on greens. With October being touch and go for getting the then common couch fairways up to tournament standard, Newell was forced into a mountain of sodding and repair work just to get adequate surfaces ready for the Open.

Newell also had the complicating factor of contending with staff issues and as with any change of regime there were a few interesting 'my way or the highway' moments. One could never accuse Newell of being backward in coming forward, but with the state's largest tournament on the horizon Newell on occasions didn't have time to argue the toss.

Despite those initial challenges, Newell hit the ground running and after watching Stuart Bouvier win the 1998 event he would go on to prepare the course for a further six tournaments – the 1999 and 2000 Ford Opens and the 2002, 2003, 2004 and 2007 Jacobs Creek Open. Those last four events were co-sanctioned with the US Nationwide Tour Opposite: One of Adelaide's most respected and loved sandbelt layouts, Kooyonga Golf Club boasts a mix of tree-lined fairways, exposed natural dunes and savannah areas. Although relatively short by modern standards, it's small to medium sized greens more than make for a challenging test

Above: Having finetuned his skills over an eight year period at Melbourne's prestigious Metropolitan Golf Club, in 1998 Steven Newell took the next step in his career after being appointed superintendent at Kooyonga

In 2007 Kooyonga engaged the services of internationally renowned course architect Martin Hawtree to identify opportunities for the club to move forward. While his changes to the 5th were met with controversy, his new 19th hole pictured has quickly become a favourite among members





Couch encroachment into Kooyonga's bentgrass greens has been an ongoing challenge and in November 2010 the 6th green was reconstructed to not only enhance strategy but also to improve turf quality and despite its relatively short length, Kooyonga developed a reputation as being one of the toughest layouts on the Tour.

While the successful hosting of those tournaments certainly ranks among many highlights over the years, it has been the ability to deliver a better overall product for Kooyonga's members which Newell has derived most satisfaction from to date. Sitting atop that list is the ongoing battle against the old foe *Poa annua*.

One of the reasons Newell was offered the job in the first place was because of his definite ideas in assisting Kooyonga's quest for purity in its bentgrass greens. When Newell started, the club had just approved a greens resurfacing programme which would over time see all greens converted from

AT A GLANCE – KOOYONGA GOLF CLUB, SA

Founded: 1924.

Designed by: Herbert 'Cargie' Rymill. **Australian rankings:** 23 (Australian Golf Digest, 2011); 12 (Golf Australia magazine, 2010). **Length:** 6214m.



Tournament history: Five Australian Opens between 1950 and 1972; three Australian Amateur Championships; 19 South Australian Opens (including the 2002, 2003, 2004 and 2007 Jacob's Creek Open which were co-sanctioned with US Nationwide Tour). **Senior course staff:** Steven Newell (course superintendent), Jason Morgan (assistant). **Course maintenance staff:** 13.

Greens: 1019, 1020, Crenshaw bentgrass mix (two greens – 9 and 18 – Penncross). Maintained at 3.2mm.

Fairways: Santa ana couchgrass, maintained at 10mm.

Tees: Santa ana and common couch, maintained at 5mm.

Water sources: Bore water (approximately 900ppm) and Class A effluent from Glenelg waste water treatment plant. Bore water used on greens and surrounds only, effluent used only on fairways and tees.

Major projects: As well as current course modifications under the auspices of architect Martin Hawtree, Kooyonga has spent \$3.8 million on the first stage of a major clubhouse upgrade. With two further stages to go, Newell is hoping to put his hand up for an upgrade to the course maintenance facility to improve machinery storage, machinery movement and staff amenities.

Did you know... Gary Player shot 62 twice to win the 1965 Australian Open at Kooyonga Golf Club. When it hosted the Jacob's Creek Open, Kooyonga ranked as the second-toughest course on the Nationwide Tour in 2002, the toughest in 2003 and the third hardest in 2004. Holes 8, 10, 12 and 15 were ranked among the Tour's toughest holes.

Penncross to a blend of 1019, 1020 and Crenshaw bentgrass. With two greens still remaining -9 and 18 - 13 years down the path and Newell can confidently say that through this programme and some changes in management practices he is well and truly winning that battle.

"Kooyonga has always had an issue with *Poa* annua, whether in the greens or fairways," says Newell. "What we have been able to do is get the population to levels where it is manageable. As well as resurfacing we have altered our management practices. For instance, we only renovated greens once in 10 years and we cut out the use of effluent water on the greens.

"We're certainly not perfect by any stretch, but whereas *Poa annua* was once the most talked about aspect of course maintenance, nowadays we are more likely to hear about crowsfoot or Parramatta grass. From having greens riddled with *Poa* we now have some purity in the surfaces and are able to maintain that."

Other successes have included a major overplanting programme which has seen the existing common couch fairways transitioned to Santa ana. Whereas the fairways were once susceptible to traffic wear, the more robust couch now provides a superior surface and the fairways are almost 100 per cent Santa ana. A focus on promoting indigenous grasses and plants has also added to the aesthetics of the course and has helped to bolster and enhance the natural dune complexes which are a feature of the Kooyonga layout.

"I'm not the sort of superintendent who settles on things," says Newell when asked if his management approach has changed much during his tenure. "I certainly have principles that I abide by but I don't have a blueprint for what I'm going to do.

"It's a competitive market here in Adelaide and there is an expectation from the committee and the members that the course be in fantastic condition every day of the week. That goes for all the other major clubs in Adelaide and there are certain things that I as a turf manager can do to make things better. You can discuss the architecture all day but the playing surfaces are where we can impact the most.

"Being in a very dry state and with water restrictions in place in recent times, members want to come to their club and see it as an oasis. We have got bore water and Class A effluent available and have invested heavily on our irrigation network in the past and the club wants to see a result from that and generally I think they do.

"Kooyonga has the best of both worlds. It has some very good undulations through the turf areas. We have some extensive tree-lined areas but also some very good dune complexes and they are aspects that we want to retain going forward. Pine trees have been part of the course for a long time, and we don't want to lose them, but we have opened up some parts and exposed the dune areas where there had been overplanting in the past."

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"On behalf of the Committee and Members of The Metropolitan Golf Club I wish to confirm our satisfaction with the work undertaken and the result.

I have already received many complements from members, most of whom (previously) felt the high fence would be a visual intrusion on our lovely course. <u>That the net is almost</u> <u>completely transparent is quite amazing".</u>

Allan Shoreland Secretary Manager The Metropolitan Golf Club





The Kooyonga greens have gradually been resurfaced during Newell's reign and through changes in management practices *Poa annua* infestation has been dramatically reduced

Throughout the 2000s an overplanting programme has seen the Kooyonga fairways transition from common couch to a full coverage of Santa ana

NEW DIRECTION

Hemmed in by suburbia on all sides, the Kooyonga layout is extremely compact by modern standards. The natural sand profile greens are small to medium in size and as such place a premium on the approach shot. The course boasts a mix of treelined fairways, exposed natural dunes and savannah areas, while the soil profiles vary from the native browny-orange dune sand synonymous with the Adelaide sandbelt through to pockets of sandy loam and sticky black clay.

Overall the original layout crafted by Herbert 'Cargie' Rymill nearly 90 years ago has stood the test of time and while the club has generally resisted the temptation to make wholesale changes it has brought in course architects from time to time to keep the layout up to speed with modern equipment, safety issues and advancements in turf quality. Most notable among them was Peter Thomson who was brought in after Gary Player laid siege to the course, shooting two rounds of 62 en route to collecting the 1965 Australian Open.

Known for its relatively conservative approach, especially in regards to altering the course, in 2007 Kooyonga surprised many when it engaged the services of Martin Hawtree, a third generation golf course architect based in the UK.



Hawtree, who was undertaking work for Royal Melbourne Golf Club at the time, was charged with conducting a thorough review of the Kooyonga layout with a means to identifying opportunities where the club could strengthen and improve its overall product. As part of the review Hawtree examined Rymill's original layout and the various tweaks made subsequently before recommending a number of changes which he felt would benefit the club moving forward.

To say that the marriage between Hawtree and Kooyonga has had its up and downs to date wouldn't be too far off the mark and the honeymoon period came to an abrupt end after Hawtree's first bit of remodelling work to the par four 5th. In attempt to recreate some of the fairway undulations that are a much-loved feature of Kooyonga's par five 2nd, Hawtree's changes were deemed too radical by many within the club, while a chorus of architects and golf pundits also let their disapproval be known, one going so far as to label the changes "riotous".

While architecturally the changes created controversy, for Newell and his staff it was also an extremely challenging reconstruction job. Not only was it the first occasion working with a new architect who had a distinct style and personality, it was also undertaken during an extreme heatwave which saw Adelaide break all manner of records. As Newell diplomatically sums it up, it was "a project that I will never forget" and not long after he and his team were back out softening some of the changes.

"I agree with Martin in that some of the best areas at Kooyonga are where we have some undulations in the fairways, like our second, and that is what he was looking to establish on the 5th," says Newell. "Arguably it was a little overdone and we have since made some modifications which have been better accepted by the members. When we made those changes we were very mindful of what we did and made sure they were in harmony with what Martin had originally envisaged.

"I think Martin has a better understanding of what the golf club wants and I think the golf club has appreciated that it has got to manage things a little tighter. The 5th was a pilot project and the club gave Martin full rein to implement the changes. That might not be the case going forward, but all the work that has been done since has been highly rated.

"Who are we to say that what he is doing is the wrong thing? Golf course architecture is not without its controversy and there will always be those who don't like change. At the end of the day I'm here to implement the changes he has put to the board and committee and the club has the confidence in me to interpret Martin's wishes.

"In the time I have been in the industry I have seen people with very big egos fall on their sword because they have forgotten their place in the organisation sometimes. We are just here to manage the turf and while we try to impart our style on the golf course as much as we can, at the end of the day it's the committee who runs the show. If you think you're bigger than the club or committee, you are not going to last long."

RUNS ON THE BOARD

Despite the controversy surrounding the 5th, Hawtree redeemed himself with his next recommendation – the construction of an additional hole. Despite opposition from some sectors of the membership, the inclusion of a 19th hole has been extremely well received. As well as being a solid hole in its own right, more importantly it gives the club the added



flexibility of being able to take other holes out of play when works are scheduled and means that all important revenue from trade days isn't impacted.

The club's old sand mine, which more recently had become a green waste dump, was earmarked as the site for the 19th and after mining out the remaining sand and stockpiling it for use as the green profile and sandcapping material for the tees and fairway, some 10,000m³ of clay was brought across from Glenelg Golf Club to form the base (Glenelg was at the time excavating its ASR wetland system). The services of highly-respected local shaper Malcolm Williams were seconded before the green was seeded, fairway spread and tees sodded.

The end result is an impressive 145m par three which runs roughly west to east, similar in direction to the much-loved 7th, and plays slightly downhill. Out of sight from surrounding holes and slotting in nicely between the existing 10th and 11th, the 19th is flanked by mature stands of vegetation which A resurfacing programme has seen many tees recently converted to Santa ana. Pictured is the tee complex on the par three 14th



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The next major change to the Kooyonga layout will come in August when the short par four 18th will be modified gives it a maturity that belies the fact it has been open for just 12 months.

The 19th has been so well received that Newell's initial maintenance projections for the hole have been thrown out a little. Rather than coming into play during September to February when other construction projects would normally be undertaken, the club has said they want the hole in play a week in every month.

"Martin has done a terrific job with the 19th and it has been utilised a lot more than we had anticipated," says Newell. "We had it in play for four months when we were doing works to the 6th and tee resurfacing works elsewhere, so it has been in play more than it has been out of play. The members, especially the ladies, have indicated they want to play it a lot more.

"The hole is still maturing but as it gets older it will be maintained similarly to the rest of the golf course, and the fact that it will be in and out of play a lot means we can't let that maintenance slip. That was something we really didn't anticipate when we were talking about putting in an additional hole and perhaps some of my maintenance costs were

THE GRANGE EMBARKS ON EAST COURSE REVAMP

At the start of May, The Grange Golf Club embarked in earnest on the complete refurbishment of the East course. The course was originally opened in the 1960s, with a lot of the original greens still remaining save for a few minor changes over the years.

A master plan has been developed by Greg Norman Golf Course Design, who will have staff on site to oversee and carry out all works in conjunction with Grange staff and external contractors as required.

For the most part, the routing of the East course will remain fairly close to how it is currently played. The major changes that will take place are the splitting of a current par five into a par four and par three, with a current par three and four transforming into a par 5. There will also be a new par three constructed on some spare land which will enable us to transform an existing par three into a spare hole that can be used on either course (East or West), which will be most beneficial in the future. The order of play of the back nine will also be shuffled slightly.

The greens and collars will be grassed with A4 bentgrass, with Santa ana to be used for all other playing surfaces including green surrounds, fairways, tees and roughs. There will be some fescues used in out of play areas leading into native areas where we will also be continuing to promote our indigenous vegetation. We are also looking to plant a lot if indigenous trees throughout the course where appropriate and overall we will be planting far more trees than we will be removing.

With the first nine holes coming out of play at the start of May, the overall aim is to have all construction completed within 12-14 months and the course proper back in play late in 2012. - Richard James, Course Superintendent

understated because we thought it would only be used sparingly."

Whether purely by coincidence or as a result of a differing microclimate, the 19th green surrounds were recently and somewhat surprisingly attacked by stem weevil, one pest that Newell hasn't seen at Kooyonga in more than 13 years. Despite treating for the pest preventatively every year, the new hole for some reason has been targeted and as a result Newell has had to be extra vigilant with its management and treatment.

Other works recommended by Hawtree which have also been implemented include the modification of the 6th which was undertaken last November. Couch encroachment into Kooyonga's bentgrass greens has been a perennial management headache for Newell and the 6th green was at the stage where chemical treatment was no longer sustainable.

As a result the green and surround was resurfaced while the whole complex was tweaked to improve strategy. This included the placement of a greenside bunker front right, repositioning two other bunkers and removing the small bunker over the back. At the other end, the 6th tee complex was also resurfaced as part of ongoing works to convert all of Kooyonga's tees from common couch to Santa ana.

TALKING POINT

The next chapter in Hawtree's work will focus on Kooyonga's closing hole, one of two holes (the other being the 9th) which have remained relatively untouched. By Newell's own admission, Kooyonga's closing hole is lacklustre and the green is by far the club's worst surface, not the sort of lasting impression the club would like when players head into the clubhouse.

Over the years Newell has been encouraged by committees to resurface the green but has always held the opinion that it needed just more than resurfacing. While final designs were still to be approved at the time of this edition going to print, starting in August, the 18th, which is currently a drivable dog-leg par four, will likely be lengthened, fairway bunkers repositioned and the green complex substantially modified.

"It has been my desire to target the areas where we have got inconsistent design and poor turf quality and the work to the 18th will address that," says Newell, who is looking forward to this next phase of works. "Martin initially wanted to leave the 18th to last, but it has been elevated up the order.

"We need to create something on the last hole, some controversy maybe. Greg Norman has threeputted the 18th at Metropolitan on more than one occasion to lose tournaments; Stevie Wonder would have little difficulty holing out in two on the 18th at Kooyonga! We need to create a bit of atmosphere and drama about our 18th, a little bit of mystique, and hopefully Martin can do something that will get everyone talking."

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PLAY ON



Adelaide Shores will play host to the 2011 Toro AGCSA Scramble and as former course superintendent Andy Blacker writes it is not your typical golf establishment.

Above: Adelaide Shores comprises two layouts- the par 72 Patawalonga course and par 60 Executive 60 course

Below: The Patawalonga course went through a major redevelopment in the late 1990's to accommodate the extension of the main runway at neighbouring Adelaide Airport delaide Shores' two golf courses form part of a major recreation precinct operated by The West Beach Trust and marketed as Adelaide Shores. The trust is a statutory authority created under South Australia's West Beach Recreation Reserve Act 1987 to manage this large sporting, recreation and coastal holiday reserve and its associated facilities.

Adelaide Shores has 100 full-time equivalent staff and the executive management group reports to The West Beach Trust Board which comprises representatives of the three local councils that surround the precinct and independent members.

Adelaide Shores is located at West Beach on 135 hectares of land that lies between Adelaide Airport and the coast. The site has several lessees and comprises two 18-hole golf courses (Westward Ho Golf Club), two award winning accommodation sites, boat launch facility and sailing club, skate park, coastal park, baseball fields, lacrosse fields, tennis courts, function centre, dog club, horse club, mini golf and is also home to the state softball association.

Bound by state government protocols and reporting to up to two government ministers, there is definitely an element of bureaucracy to contend with. During my tenure at Adelaide Shores I was also exposed to many levels of management that would not exist at a typical golf club. With a management structure that has a chief executive officer, chief financial officer, HR manager, asset and procurement manager, accommodation manager, recreation and environment manager, risk manager



and a marketing manager who all are responsible for their own business units.

As superintendent of the two golf courses, I reported directly to the recreation and environment manager and the golf maintenance team works closely with two other horticultural teams – the reserves and irrigation team and the accommodation maintenance team. I did not report to a golf club board or any individual within a golf club, however, I did work closely with the Westward Ho Golf Club and the pro shop lessee to manage match and course issues.

CHALLENGING SITE

The Adelaide Shores golf precinct consists of the par 72 Patawalonga and the par 60 Executive 60 golf courses. The Patawalonga course averages 70,000 rounds per annum while the Executive 60 averages 40,000. There are also two fully automated driving ranges within the precinct.

The Patawalonga course, which will play host to the Toro AGCSA Scramble at this year's Australian Turfgrass Conference, went through a major redevelopment in the late 1990's to accommodate the extension of the main runway at the neighboring Adelaide Airport.

Much of what is now the back nine of the Patawalonga course is a reclaimed refuse site. There have been many issues to deal with due to the reclamation of this site including poor drainage, settling as refuse collapses and deteriorates underground, landfill gas emissions and poor quality topsoil used during the construction phase.

One of the biggest challenges I faced in my time at Adelaide Shores was managing this part of the site which is fragile and prone to salinity issues. We gradually improved the back nine by installing subsurface drainage and with several large reconstruction projects, including the complete reconstruction of the 13th fairway which saw some 3000m³ of topsoil stripped and replaced with 4500m³ of sand and several thousand metres of drainage lines.

In stark contrast to the back nine, the front nine of the Patawalonga course is located on natural sand and provides an ideal growing environment. The irrigation source is Class B reclaimed water which is supplied by SA Water's neighbouring Glenelg waste water plant. The fairways and tees at Adelaide Shores are predominately kikuyu so the combination of the good soil on the front nine holes, reclaimed water and the turf type often results in high growth periods particularly in the summer months and plenty of Primo is used during this period.

The reclaimed water is high in phosphorus so care is taken not to apply any additional phosphorus and poorly draining areas require constant inputs to manage salinity. While the irrigation water is not of the highest quality, it is a guaranteed source which is more than some clubs have had in recent years. Other major on-course achievements over the last few years have been;

- The redevelopment of the pro shop and practice facilities which has included the construction of one of the largest putting greens in the state;
- Realignment of an on course drain and subsequent re-vegetation project;
- Conversion to Toro Site Pro irrigation control system;
- Installation of drainage systems on 10th and 18th holes (Patawalonga course);
- Reconstruction of the 1st green (Patawalonga course); and
- Installation of a new irrigation fertigation system. Both courses offer a golfing experience that can challenge all levels, but being such a high use site that generates much of its income from green fee golf, the courses are designed to encourage high speed of play. Hazards are kept simple and water does not come into play on many holes. Rough is mown low and regularly and pin placements and green speed are usually set up to cater for the casual golfer.

Golf etiquette is almost non-existent with so much casual golf played and consequently a lot of time is spent repairing pitch marks and divots. The Pro Shop lessee runs a fleet of 40 golf carts which create a lot of on course wear and damage. Adelaide Shores is about to start a cart path project to help manage this issue.



There has been a high emphasis in recent years to use indigenous plants in all new on course plantings and Adelaide Shores is currently producing its own indigenous planting guide. Many of the trees that are found on the two courses are not indigenous and create major maintenance issues. The worst of these is *Allocasuarina glauca* which is a suckering tree with massive root invasion issues. This problem will need to be managed with a replacement programme long-term.

Overall the product presented at Adelaide Shores is a good one and continues to get better each year. Both courses present well and Adelaide Shores is now arguably the best public golf facility in South Australia.

Editor's Note: Andy Blacker left Adelaide Shores in late April 2011 to take up the position of course superintendent at Port Lincoln Golf Club. One of the major projects at Adelaide Shores in recent times was the redevelopment of the pro shop and practice facilities which has included the construction of one of the largest putting greens in the state









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Riverside Golf Club superintendent Stuart Gillespie outlines some of the recent changes made at the Adelaide club which have strengthened the layout of the course.

Above and below: A series of course improvement works to the 5th, 17th and 18th holes have helped to increase the challenging nature of Riverside Golf Club



ver the last five years Riverside Golf Club had been in negotiations to obtain some nearby land that could be used to construct new holes which would then allow changes to the existing course. These talks broke down early in 2010 and the club made the decision to work to its own master plan which was developed in 2000.

The club had also been in discussions with the local council and State Government on a proposed aquifer storage and recharge scheme (ASR) which would be developed on adjacent council land and the club's practice range. This project forms part of the Waterproofing the West Scheme and funding was sourced through federal, state and council resources. This ASR work was to start in November 2011, which meant the practice fairway had to be cleared prior and the soil used to benefit the course.

In consultation with course architect Neil Crafter, concept plans were developed and decisions made to reposition the green and surrounds on holes 5, 17 and 18, with changes to tees on 10 and 18 and reshaping and realignment of the 17th and 18th fairways.

Temporary greens were established using bentgrass from around the course and reconstruction works began on 16 August 2010 with the new 5th green and surrounds. Tron Civil were chosen to



handle all the major construction work and shaping. Malcolm Williams, who has been involved with the majority of changes to the course over the last 15 years, now works for Tron and he was site manager and part-time shaper. His work is exceptional and the end results speak for themselves.

Fresh soil was brought in for the base of the greens, usually about 350 tonnes of Nalpa sand which we have been using in construction work for the past five years with good results.

It was decided to turf the new greens using bentgrass from our nursery for the 5th, the old top on the 17th for the new 18th green and turf brought in from Melbourne-based Australian Seed and Turf Farm for the 17th green. The only downside was that the new greens on 5 and 17 were SR1019 bent while the 18th was Penncross. Although this is not perfect we have found that both types respond well to our management practices with little differences in the putting surface.

New irrigation lines and sprinklers were installed throughout construction and this was carried out by Adelaide Turf and Irrigation. All other areas were turfed with Santa ana supplied by Munn's Instant Turf with 22,000m² of sod being laid, with the majority of that consisting of mounded areas.

The realignment of the new 17th and 18th holes has vastly improved their character with the 17th fairway being changed to incorporate the proposed ASR wetlands and the 18th playing as a true dogleg with a more generous landing area. Significant fairway bunkering has also been incorporated into the design to improve strategy.

The construction programme consisted of developing the 5th and 18th green and surrounds first then the 18th tee and mounds. Once these areas were completed work started on the 17th green and surrounds then continued onto the 18th fairway and mounds before finishing with work on the 17th fairway and mounds.

While construction work finished in December, turfing didn't stop until January 2011 and by the end of the project some 50,000 tonnes of soil had been moved and reshaped into the new holes. The 5th and 18th greens were turfed in September and opened in December, while the 17th was turfed late in October and opened in January.

The new greens have plenty of contours and slopes to make it challenging to all golfers with some great pin positions for tournament play or ladies day. All of the new works have grown in well with some minor repair works carried out in some sections. The only finishing touches remaining are the planting of native grasses and trees.

Comments from members and visitors to the course have all been positive and the changes have certainly increased the difficulty of play. The club can be very proud of the works and how well the project ran. The ground staff did an exceptional job too and should be congratulated on another fine effort. $\cancel{4}$

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Following the rain-affected round 10 AFL clash between Richmond and Port Adelaide in 2010, a number of improvements were needed to Adelaide's AAMI Park playing surface. Maintenance regimes were reviewed and subsequently refined

Daryl Sellar looks at the recent works undertaken to the AAMI Stadium surface to meet the modern demands of AFL football.

Improved surface quality in the northern corridor six weeks after the rain affected game and implementation of revised programmes



ince 1974, AAMI Stadium (aka Football Park) has been home to football in South Australia, with very humble beginnings compared to the structure that exists today.

When Footy Park opened, there was virtually no seating for a number of years, with patrons adopting the now unusual behaviour of sitting on the concrete terraces during the breaks and then standing for the actual game. But many of us have grown up watching AAMI Stadium mature, and while some of the creature comforts have been continually upgraded, the playing surface has been virtually unchanged since its creation.

This in itself is a credit to the legendary Doug Butterfield, who crafted the playing surface with some primitive equipment by today's standards and tended to it until handing over the reins to his son Jamie. The pronounced 'dome' of the playing surface was instrumental in helping to provide surface drainage, and many suburban and rural grounds in the state have since been constructed "just like Footy Park". The sandy loam profile provided an ideal growing medium and Adelaide football fans have marvelled at the quality of turf for nearly 40 years.

However, time and progress has caught up with the old girl, with Jamie often expressing concern in recent years over the ability of the surface to meet the modern demands of the AFL and the encroachment of televised games closer to summer.

For many years, the playing surface comprised an understorey of couchgrass, which was promoted during summer, and *Poa annua* which flourished and provided an ideal playing surface from the start of the football season. While this was fine in the days of one game each week, the mix was being tested more and more with the introduction of the AFL in 1991 and the subsequent increase in oval usage, presentation and safety pressures.

At the same time, the development of more covered seating was taking its toll on the ability of the turf to withstand the increased demands, particularly at the northern end where a new grandstand introduced a significant shading footprint.

PROBLEMS EXPOSED

Now under the watchful eye of David Egan, a long-dreaded combination of wet weather leading up to and during the round 10 clash between Port Adelaide and Richmond last season saw the deficiencies in the playing surface revealed.

Weekly assessments of the ground in the weeks leading up to that game had documented the obvious wear patterns associated with game and training activities and the influence of shading. This data was being communicated to both AFL clubs, with requests to regulate training activities to preserve what was becoming an increasingly fragile surface. But it was not until that fateful night when the ground deteriorated before the television audience's eyes that the extent of the problems was really understood.

The reduction in 'down time' during summer for nearly 20 years, along with increased pressure for 'television turf', had resulted in less couch providing a stable base. The limited ability to carry out renovations during the season had seen the surface sealed with organic matter, resulting in shallow rooted ryegrass and *Poa annua* becoming very susceptible to increased traffic, especially when wet. Recovery from 'that' night was far quicker than expected, but the process of reviewing the surface and its management was well underway. David modified the maintenance programme to include routine, deep solid tine aeration and hollow tine aeration, along with regular oversowing of ryegrass in an effort to help dry the playing surface and increase plant numbers. Fertility levels were also increased where required.

Importantly, communication was maintained weekly with the SANFL and both AFL clubs about managing oval usage. This was critical to the successful restoration of the surface and it continued to improve for the rest of the season.

The past summer has seen an extensive renovation of the playing surface through scarifying, deep aeration and topdressing, as well as introducing more seeded couchgrass. Although ryegrass had to be introduced earlier than ideal to meet the early start to the pre-season, the quality of the surface leading into the 2011 season was very impressive.

Previously as little as 4-5mm of rain was resulting in water pooling on the surface, whereas recent rainfalls of 20mm or more have been hardly detectable. Twelve months ago, divot repair could take four staff members up to four hours; that has now reduced by more than half.



Critical to the ongoing management of the older profile at AAMI Stadium has been some new investment in renovation and maintenance equipment. Long overdue, this is helping the hard working team at AAMI Stadium to meet the demands of AFL football more reliably than ever before.

None of the principles that have been introduced at AAMI Stadium are revolutionary....in fact, quite the opposite. But it has been a healthy reminder of the importance of monitoring and documenting turf quality, communicating regularly with end users, and maintaining investment in assets to manage our playing surfaces.

It also highlights the importance of remembering the playing surface when stadium development progresses and changes the growing environment significantly. That said, Doug's old profile is still there, it just needed a little bit of a hand.

Surface damage following the rain affected match in 2010

ADELAIDE OVAL REDEVELOPMENT TO HERALD ERA OF DROP-IN PITCHES

s this edition of ATM was going to print, members of the South Australian Cricket Association (SACA) voted in favour of a proposal to amend the association's constitution to allow a joint venture with the South Australian National Football League (SANFL).

The decision paves the way for a \$530-plus million redevelopment of the Adelaide Oval (pictured) into a multi-purpose venue with AFL matches set to be hosted there from 2014. To facilitate the AFL schedule, the Adelaide Oval's famous wicket table will be replaced by drop-in pitches, the first time they will be used at the hallowed cricketing venue, while the surface will be levelled and a sand profile installed in order to meet the demands of AFL football.

The proposed design will see the ground's capacity boosted from 32,000 to 50,000 with the construction of a new southern stand (currently the Bradman Stand) and eastern stand which will complement the new Western Stand which was unveiled last season. All parties are working towards Test cricket being played at the venue in the summer of 2013/14 with the hope that Adelaide and Port Adelaide AFL games will be scheduled there from the 2014 season.

For Adelaide Oval curator Damian Hough, who took over from the retiring Les Burdett in the second half of 2010, the redevelopment will signal major changes to the way turf management operations are run both on the main oval and the many surrounding facilities which he and his team also maintain and prepare.

"The redevelopment is definitely fantastic news and is going to make a big difference for the city of Adelaide and the public," says Hough. "We will be changing to drop-in pitches and are in the process of assessing how they will work here. We plan to still have eight pitches and create an eight-pitch centre wicket area and replicate what we currently have.

"The pitches will be housed on our No. 2 ground and be placed in the ground so we can work on them during the football season



and, if need be, start preparing a pitch or two before they get put in for the cricket season. We hope to be in a position to use the pitches as practice wickets a year before they are needed on the main oval to ensure we iron out any issues that may arise and to give them as much consolidation as possible."

According to Hough the oval's outfield will be levelled and the existing loam profile will be replaced by a full sand profile in order to maintain the surface at a high standard during the football season. As is commonplace with major oval reconstruction projects, a new drainage and irrigation system will also be installed with moisture sensors to be used. The outfield will need to be oversown for football and Hough will be conducting trials over the next year.

Other management areas that will need consideration include the grassed mound at the northern end (next to the heritage scoreboard which will remain) and how the turf there will be maintained during the football season. This area will more than likely be reconstructed with a sand profile as the current mound can get soft during periods of constant rain. The No.2 ground is also earmarked for work to allow car parking on it which means improving the existing heavy loam profile.

Cleaning up Christchurch

Christchurch-based New Zealand Sports Turf Institute agronomist Jaymie Batchelor looks at how the region is recovering following the devastating February earthquake and the lengths sports turf managers and superintendents are going to get their playing surfaces back in play.

s life begins to return to a sense of normality (apart from the chemical toilets and the crazy traffic), the clean-up of Christchurch's sports and recreational facilities is underway in earnest after the devastating 22 February earthquake. Fortunately, despite several close calls, no turf managers that we know of were killed or badly injured.

It is always interesting to see how people cope in a worse-case scenario and the turf managers of the region have risen to the challenge, repairing surfaces and infrastructure to make sure the people of Christchurch have as many facilities available for winter play as possible.

While the September 2010 earthquake caused some damage to the region's sporting facilities, the February 2011 earthquake had a devastating impact. Here is a snapshot of the damage caused across the city:

- Thirty-six Christchurch City Council sportsfield complexes closed indefinitely;
- AMI Stadium and QEII Stadium (including the 'Village Green' cricket oval) closed indefinitely;
- Over 16,500m² (to date) of Christchurch City Council sportsfields affected by undulations;
- Six golf clubs majorly affected Avondale, Shirley, Taitapu, Waimari Beach, Hagley and Ascot;
- Thirty bowling club greens suffered a range of damage (liquefaction, cracking). This excludes clubs such as Kaiapoi Riverside that were badly affected in the September 2010 earthquake.

- Two out of three artificial hockey surfaces require major repairs. It should be noted that synthetic facilities have once again borne the brunt and many will need to be completely rebuilt, highlighting a previously underrated disadvantage with regard to their lack of physical flexibility;
- Two athletics tracks damaged beyond repair (the nearest athletics track is located in Timaru, two hours south of Christchurch); and
- QEII Stadium, Pioneer and Centennial swimming pool complexes all require repairs.

SPORTSFIELDS

Typically the fields in the eastern suburbs of Christchurch are the real performers through winter and after coming through the September 2010 earthquake relatively unscathed, asset managers are now faced with potential closure or partial closure over winter as a result of the February earthquake.

This will put extra pressure on fields which under normal circumstances struggle to get through winter. Christchurch has endured above-average rainfall for the past two winters, so turf managers will have their fingers crossed for a drier winter this year to help fields cope with the extra wear.

Around 15 sports parks had all activity cancelled immediately after the earthquake. Aside from ground movement and liquefaction (where the soil substantially loses strength and stiffness in response to an applied stress causing it to behave like a liquid), there are broken water and sewer mains to contend with. Work to these facilities is ongoing and a full picture of the damage has yet to be established.

Vaughan Utteridge, Sport Canterbury's newlyappointed sport recovery manager, estimates that over \$NZD2 million of income is at risk to sport at club and regional level in terms of subs, loss of income from events, trust funding and sponsorship.

The biggest and most heartbreaking loss, however, came when Rugby World Cup Ltd announced on 30 March 2011 that due to the damage to Christchurch's facilities and infrastructure, all Rugby World Cup matches scheduled for the city would be moved. Christchurch had originally been earmarked to host five Pool B and C matches, including two of Australia's matches against Italy and Russia. AMI Stadium was also to have hosted two quarterfinal matches and these have been shifted to Auckland's Eden Park.

While the true extent of damage won't be known for some time, an estimated 3000 tonnes of liquefaction has to be removed rather than graded back in, which equates to about 100 double-trailer truckloads.

Voids below ground present an invisible hazard for turf managers and in some cases the New Zealand Sports Turf Institute (NZSTI) has used an EMI scanning unit to help clients to identify problems in the soil profile. The unit provides a 3D view of the levels of the field and maps the soil profile at different depths showing up any undulations and liquefaction that may be below the surface.

While winter codes will be affected, it is unlikely that all repairs will be carried out before the growing season ends, affecting early season play next summer. Many cricket facilities have been damaged, most notably AMI Stadium and the Village Green at QEII Stadium, the city's other principal sports stadium. It appears unlikely that the Village Green, the home ground of the Canterbury Wizards cricket team, will be available for next season.

BOWLS

While only a few clubs were badly affected in the September quake, bowling clubs fared far worse in the 22 February earthquake. In the weeks following, NZSTI staff visited over 15 affected clubs, many of which have major damage to their green(s) and/or clubhouse. Even those which at first glance appear to be unaffected (no liquefaction, cracking etc) have had considerable ground movement and will require remedial levelling works.

With many clubs suffering damage to clubhouses and maintenance facilities and some greenkeepers understandably unavailable due to personal circumstances, NZSTI agronomist and Growsafe trainer Chris Gribben was on hand with PPE to check potential damage to chemical storage units, giving affected clubs peace of mind.



While some clubs are unlikely to recover, some have already started repair work. Where clubs are insured, in the main they will have to wait until the insurance companies agree to a payout before repair work (other than removal of liquefaction etc) can be undertaken.

NZSTI has been working closely with Bowls Canterbury and the Canterbury Greenkeepers Association to help affected clubs get a grasp on the extent of damage to their greens. The recovery of the affected clubs will no doubt be assisted by the well-organised and enthusiastic assistance they have received from their centre. Bowls Canterbury has been closely working with insurance companies on the clubs' behalf and engaged the services of engineers Beca Carter to help clubs with building assessments and geotechnical issues.

One of the issues highlighted at a centre delegates meeting was the likely effect of the earthquake on charitable funding. Many charitable trusts are likely to see a major reduction in available funds because the gaming machines and pubs generating their income are located within the Christchurch CBD which was significantly damaged.

The reduced income, coupled with the additional draw that is likely to take place on the trusts for social needs, means that many sports clubs in the region (and throughout the country) are likely to find it very difficult to obtain funds from charitable trusts in the immediate future. This will probably mean that clubs will have to tighten their belts even further and some projects may be delayed due to a lack of funding. Opposite page: This was the scene at Avondale Golf Club within minutes of the 22 February earthquake hitting Christchurch. The earthquake resulted in liquefaction, slumping and mounding to all fairways, five greens and several tees

Above: Damage sustained to the running track at QEII Stadium. The venue, one of the city's major athletics venues, remains closed indefinitely

NZSTI agronomist Jaymie Batchelor (right) undertakes EMI scanning of the earthquake damaged surface at AMI Stadium. The machine maps in 3D the soil profile at different depths showing up any undulations and liquefaction below the surface



Thirty greens at various bowling clubs around Christchurch were severely damaged, including Burwood Bowling Club pictured right For some clubs, the earthquake has probably, unfortunately, sealed their fate and with club numbers dwindling several clubs are reported to be taking a hard look at their future and potentially will merge with other damaged clubs to form 'super clubs' with new, purpose-built facilities. With many facilities in ruins, some of the politics and heartache often associated with such mergers may be obviated by the shared need to get bowls in the region back up on its feet.

GOLF

Of the golf courses suffering major damage only three have yet to re-open, with the others either re-opening as clubhouses are given a green sticker or on a hole-by-hole basis as repairs are carried out. The NZSTI has been very impressed by the huge efforts put in by greenkeeping staff in the region and the speed at which courses are being repaired, especially considering that many greenkeepers have had their own homes damaged.

The courses of Aussie ex-pat greenkeepers Garry Worsley (Avondale Golf Club) and Neville Miller (Ferrymeade Golf Club) were both affected. Ferrymeade, which is built on a former tip site, had its water and sewerage supply affected and received some cracking damage on turf areas. The club took around a month to get fully up and running.

Avondale Golf Club sustained much more severe damage to the course and their clubhouse. Several greens were affected by liquefaction and tees and fairways were also damaged. The irrigation system was badly affected and Garry, assistant Merv and his family scrambled to reinstate the greens and irrigation system in the hot and windy weather which followed the earthquake. The course was back ready for play in a short period of time, which is testament to the hard work put in by all (**see Garry's account of the earthquake on page 26 – Ed**). Other courses significantly damaged include Shirley, Taitapu, Waimari Beach, Hagley and Ascot.

Severe liquefaction of a fairway at Waimari Golf Course





LESSONS LEARNED

While liquefaction, surface movement and cracking have been a problem for clubs, for many of the golf courses, sportsfields and bowling clubs affected by the earthquake, securing a water supply was the biggest challenge in the days following the quake. Many clubs simply did not have water available for a number of reasons, these being:

- Damage to their wells;
- Damage to irrigation systems;
- No electricity supply to pump water; and
- Town supply unavailable (cut off, insufficient pressure or not allowed to take water)

Avondale Golf Club, for example, had an operational well but simply had no power to run the pump. Had the club had access to a generator (or better, had owned one), the well could have been up and running a lot sooner, relieving the drought stress on the greens. It is worth acknowledging at this point the Southern Turf Managers Association who supported turf managers in need and helped coordinate volunteers and machinery to help get clubs up and running.

Another lesson learned from the quake with regard to water was that when the town water supply is damaged, such as it was after the earthquake, clubs will not have access to water even if it is available. This is because the water authorities need as much water in the system as possible to boost pressure so that the system elsewhere can be tested. Hence, in such circumstances water can only be used for essential personal use.

Water tankers were also in very hot demand ferrying water to residents, so clubs were at the mercy of Mother Nature in the weeks following the quake. Several hot, windy days following the quake really put fine turf under pressure. Fortunately the city received good rainfall on 5 March which probably saved a lot of greens. The water issue did highlight a vulnerability that many clubs had not foreseen and it will no doubt allow clubs to be better prepared for disasters in future. Another interesting lesson we learned after the first quake was the effects of aftershocks (Christchurch incredibly had more than 4000 of them between the major earthquakes!) and in many instances areas which had suffered cracking seemed to either naturally close up or re-level without intervention.

INSURANCE

The first earthquake in September highlighted that many clubs and turf facilities had no or inadequate insurance, especially when it comes to their turf surfaces. It is quite surprising that despite the wakeup call of the September quake, many clubs still had little or no cover.

For example, it will surprise many that even AMI Stadium, whose naming sponsor is an insurance company, had no insurance for the playing surface. Many bowling clubs had insured their buildings, but had little or no insurance for their greens. Golf clubs seem to have been better prepared, with most having their irrigation systems insured and at least some having loss-of-income insurance.

In addition to ensuring that sufficient insurance is held, another important lesson from the earthquake is that if your facilities are insured and are damaged, that only vital repairs are made before the insurance company assesses the damage. Any non-vital repairs conducted before a formal assessment is undertaken may not be paid for by the insurance company and may void any claims.

THE FUTURE

With winter just around the corner, it's all hands to the pump to remove liquefaction, repair cracks, re-level and fill the numerous sink holes that have appeared at some sites. Some surfaces with major damage following the September earthquake had yet to be repaired, while others were repaired only to be put back to square one again after the 22 February quake.

Despite this frustration, Canterbury is blessed with many talented greenkeepers, many of whom are optimistic that the turf facilities of the region can be returned to the high standard that they are known for.

ACKNOWLEDGEMENTS

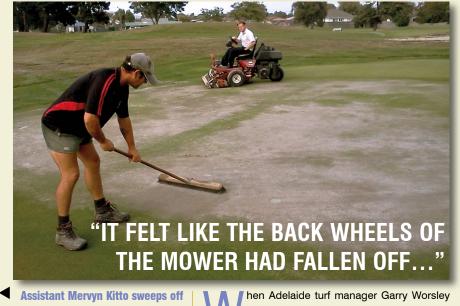
Thank you to Sport Canterbury, City Care, Bowls Canterbury and Canterbury Greenkeepers Association for their assistance.

Editor's Note: Author Jaymie Batchelor is a resident of Christchurch and his home suffered damage as a result of the February earthquake. He was also due to get married on the Saturday of the week in which the earthquake struck, but had to postpone it for obvious reasons. ATM can happily report that Jaymie tied the knot with partner Ange on 30 April, although got a dirty look when he quipped in his wedding speech that the earthquake might be a sign! \pm



The sort of cracks cricket wicket curators don't want to see. QEII's Village Green cricket oval, home to the region's top cricket side, was among those facilities badly damaged

NATURAL DISASTERS



Golf Club's greens in the aftermath of the February earthquake which hit Christchurch



The five greens which were covered in liquefaction were vertidrained to help alleviate silt build up in the profile

Extensive silt deposits were left on five Avondale greens as a result of liquefaction



hen Adelaide turf manager Garry Worsley moved to Christchurch more than a decade ago, little did he expect to find himself caught up among one of the worst natural disasters to hit New Zealand. The one time superintendent of 11 years at Adelaide's Riverside Golf Club, Worsley took a family holiday to New Zealand in 1999 and never returned, instead taking up a position as contracting course superintendent at Avondale Golf Club in Christchurch's eastern suburbs.

Avondale has been Worsley's home now for the past nine years and when the 22 February earthquake struck he and sole assistant Mervyn Kitto were out mowing the course.

"Both Merv and I happened to be cutting fairways when the quake occurred and it felt like the back wheels of the mower had fallen off," recalls Worsley, who started his greenkeeping career at Adelaide's Glenelg Golf Club. "The ground in front of me started to move in waves and 50mm galvanised pipe lifted up through the surface by about 600mm. Water and liquefaction then covered most fairways and greens virtually within minutes.

"With the first earthquake in September the only damage was to our 18th green which became a two-tier green overnight. February's earthquake was much worse and resulted in liquefaction, slumping and mounding to all 18 fairways, five greens as well as damage to several tees and the irrigation system.

"The clean-up has been progressing slowly but steadily since the earthquake and at times we were at the course seven days a week up to 12 hours a day. We managed to open 15 holes less than four weeks later which was very satisfying. The club is very happy with the progress that we have made although we are still a few weeks away from having the last remaining two holes open."

The mountain of work that Worsley and Kitto have achieved in the weeks after the earthquake is representative of the efforts of many of their fellow Christchurch turf management colleagues and what follows is a timeline of course repairs that they have undertaken at Avondale. **Week 1:** With the help of a handful of volunteers on one day, it takes five days to clear the silt from five greens by hand.

Week 2: Work continues to repair mounds, slumps and cracks in greens, then brushing them to get rid of surface silt. Other works include clearing silt from fairways and tees. Although still without water and power, irrigation repairs are completed at 15 separate locations around the course.

Mark Marriott from Geraldine-based Turfprep, volunteers his time and machinery to spend a day clearing liquefaction from fairways. A generator, borrowed from Greendale Golf Club superintendent Michael Brickwood, means power can be connected to the irrigation control system, however, due to poor flow from the course wells efforts to get water on the greens proves difficult.

Week 3: Work continues to remove liquefaction from fairways which is used to form mounds in rough areas. Greens, tees and fairways receive their first cut since the earthquake. By the end of the week, power is restored and greens receive their first proper water via handheld hoses.

Week 4: More liquefaction removed and irrigation repairs made. Cleared areas on fairways and newly formed mounds in the rough are oversown. Greens are fertilised and sprayed with wetting agent. On Saturday 19 March, 15 holes are opened for play.

Week 5: The five greens which were covered in liquefaction are vertidrained at close spacings and then hosed off to remove residual silt. Silt is removed from the bunkers on the 4th and a mound formed with the silt. This hole is eventually brought back into play on 26 March. The broken well on the 8th fairway is repaired, but overall flows from all wells hasn't improved so the decision is made to bring in East Coast Drilling to clean out the sieves.

Week 6: Damage assessment conducted on the system that feeds the course's drinking taps and toilets. All of these are fed from a well through galvanised pipe around the course. Many breaks are discovered in the line and because it is installed close to surface causes issues with vertidraining. The decision is made to abandon this system and connect to the irrigation system mainline.

Week 7: Much time is spent removing debris in valves and nozzles. Work continues on greens with seeding and light topdressing in areas. East Coast Drilling clean out the sieves in two wells and find, when the pipework is disconnected at the No.1 well, it had lifted during the earthquake putting pressure on the pump and cracking the housing. Work begins on removing liquefaction from the 3rd fairway.

Week 8: Water supply to toilets is reconnected from the mainline. Several more irrigation leaks are repaired and silt removed from bunkers on the 3rd. **Week 9:** Work begins on removing liquefaction from the 8th fairway. New pump and motor to well No.1 installed. Several more irrigation leaks repaired and debris cleaned out of sprinklers and valves, bringing the total number of irrigation repairs to 33. Jul





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COURSE CONSTRUCTION CONSTRUCTION

Since taking over the keins as Sanctuary Cove Golf & Country Club superintendent in early 2009, the substantial redevelopment of the Palms course has consumed the time of Robin Doodson. Officially unveiled in early April, Doodson looks back on the project which is hoped will deliver the club further recognition.

In its bid to have two golf courses ranked among the top 50 in Australia, Sanctuary Cove Golf & Country Club has undertaken an extensive redevelopment of the Palms course since 2009. The new-look course – pictured here is the 11th – was officially unveiled in mid-April 2011

picture perfect Palms

stablished in 1989, Sanctuary Cove Golf and Country Club is situated on the Gold Coast and regarded as Australia's first integrated golf and residential community. The club consists of the Arnold Palmer-designed members-only Pines course, the Palms course and associated facilities.

After a number of difficult years under receivership and change of ownership, the membership of the club completed an equity buyout from then owners Mulpha in 2007, heralding a new era for the club. Part of this deal included the funding of a new \$13 million clubhouse, a new recreation and function centre and, most importantly, the construction of an all new Palms golf course.

While the Pines course has consistently rated among Australia's top 50 golf courses since its opening, the Palms layout was relatively uninspiring by comparison and was well behind the standard of its sibling. The aim of the club is to be fully private with two world class golf courses, and it was pretty clear that the Palms needed substantial work to bring it up to such a level. After an extensive vetting process, the club decided to appoint golf course architect Ross Watson to design the new Palms course. His vast experience in design and, in particular, re-design were regarded as key factors in his selection, with his incredible work at Royal Sydney Golf Club being the real deal-breaker.

This project would also be Watson's first 'design and build', with his newly formed Planform construction company, led by construction foreman Tim Murphy, winning the tender to carry out the works. Jeff and Steve Lindemann were engaged by Planform to carry out all bulk earthworks and final shaping of the golf course.

Watson has designed around 70 golf courses all over the world and regards the Palms as arguably his finest work. "I have got more out of this site than any other because I have been able to control all aspects of it and put a heap of time into it," says Watson.

"I regard it as a masterpiece and I'll tell you why. I was the designer, the landscape architect and the





All tees and fairways on the new Palms course were sprigged with Wintergreen couchgrass

contractor all in one. So I had total control and a committee of one to deal with and that committee of one was on the same page as me every inch of the way. I live two minutes from the site and couldn't start to tell you how much time I have spent there compared to any other I have done."

CONSTRUCTION CHALLENGES

The course was built in three stages with the first stage being the construction of the 1st and 2nd holes. These holes are situated on a parcel of land separate to the original course which allowed them to be constructed prior to the old course closing. This parcel of land housed the old maintenance shed as well as some administration buildings which now reside deep below the 2nd fairway. Interestingly, the new 2nd hole is now named 'Old Shed for this very reason. These two holes presented a unique challenge in that they had no existing vegetation or landform and were basically a blank canvas.

The original Palms course closed on 2 April 2009 with stage two of construction due to start the next

day. This stage included the 3rd and holes 10-18 and was scheduled to take 10 months to complete. Unfortunately Mother Nature had different ideas and record rainfalls meant that no real progress was made in the first month. However, as the weather eased in May the earthworks proceeded at pace.

The construction of the golf course was a balanced cut to fill across the site with no topsoil imported. This meant that there had to be a very precise schedule of works to move material around the site. Despite the slow start to stage two, construction was completed on time and stage three proceeded in June 2010 (delegates at last year's Gold Coast conference saw this stage of construction). This stage incorporated holes 4-9 and construction was finished in November 2010 leaving six months to complete the grow-in of the golf course ready for an April 2011 opening.

The bunkers on the new Palms course have a natural rugged look. Plateau couchgrass has been used to reduce maintenance requirements while native grasses are prevalent in the surrounds



The new Palms greens are TifEagle, replacing the old 328. A key focus in the coming years will be an aggressive amendment programme to maximize root health One of the greatest challenges throughout the project was dealing with issues regarding neighbours. Normally a golf course would be built prior to the residential development around it, but in our case we had existing residents along the entire boundary who had very definite ideas of what they wanted to happen on their doorstep.

Noise and dust were obvious issues which caused much angst for residents during construction as well as the disruption of TV, telephone and security services to the whole community when a conduit was accidentally dug up during construction.

One of the most contentious issues came when the landscape areas were installed with the planting of every single tree seeming to generate an email stating that views were being spoiled. Attempts to engage residents in the process were relatively fruitless as every single resident had a different agenda and had no real idea of what they wanted to see from their back verandah.

As a result we stuck to our original plan and now that construction is complete our neighbours can see a final product which is vastly improved from what they had previously.

GRASS ROOTS

In April 2010, nearing the completion of stage two of construction, the decision was made to appoint James Gordon as foreman of the new Palms course which included the responsibility of growing in the course in time for opening. James completed his apprenticeship at nearby Lakelands Golf Club and in his time at Sanctuary Cove had proved himself to be a passionate and extremely diligent team member. One of the main challenges of any grow-in is managing resources as the workload increases each time a new hole is completed and handed over. The other main challenge is managing turf which ranges from two years old to two weeks old and having them in the same consistent condition on opening day. I believe that James achieved this without question and anyone visiting the course today would find it hard to distinguish between the first and last holes constructed.

The new greens have been planted with TifEagle (the old greens were 328), while the tees and fairways were sprigged with Wintergreen couchgrass (a change from the old Greenlees Park). As with most golf clubs, green speed has always been a bone of contention and we believe that the TifEagle will be able to provide the fast, smooth and consistent putting surfaces that our members crave. The more pronounced undulations in the new greens mean that the optimum green speed of 9-9.5 will provide a great challenge without the course becoming unplayable.

Our experience so far with the TifEagle and having spoken to a number of superintendents who have dealt with it, tells us that thatch management is going to be key in its success. We have found that very light verti-cutting and grooming, in combination with regular light dusting, are vital in providing the best surface.

We have also been warned to expect a certain amount of disease pressure in the formative years, which has been the case on a couple of greens already, but generally the TifEagle is performing magnificently and is a class above the Tifgreen 328 which we have on the Pines course. Our main aim in the coming years is to have an aggressive amendment programme to establish base nutrient and organic levels in the rootzone, with root health being our prime objective.

LOW MAINTENANCE LANDSCAPE

Aside from the actual construction of the golf course, landscaping was a crucial element in the changing face of the Palms course. The landscape theme was purely native with a large number of the existing palms on the course being maintained or relocated during the project.

Plant species selected included various varieties of melaleucas, acmenas, callistemon, grevilleas, lilly



The course was built in three

the construction of the 1st

(pictured) and 2nd holes

stages with the first stage being

pillies, carex, lomandras, pennisetum and themeda (kangaroo grass) to name but a few. The intent for these 'garden areas' is that in time they will provide a low maintenance landscape solution and they have been strategically placed to limit their impact on the playability of the golf course. As with any golf course, the landscape will continue to evolve in the coming years with additions, deletions and alterations being made in consultation with Ross Watson.

One of the most unique and talked about feature of the new course is without doubt the bunkers. Aesthetically they have a very natural look which is reminiscent of the bunker style on the links courses in Scotland and is unlike anything that can be seen elsewhere on the Gold Coast. Native grasses (wallaby grass and pennisetum) have been planted in the bunker surrounds to further enhance the natural look.

At the recommendation of Ross Watson, Plateau couchgrass was used around bunkers. Watson had used it previously at Pacific Harbour and means that bunker maintenance is greatly reduced with edging only required two to three times per year. This is in vast contrast to the Pines course which requires bunker edging to take place on a weekly basis, so we will save a lot in terms of labour costs.

With high rainfall and thunderstorms being the norm on the Gold Coast the issue of sandslip also needed to be addressed. Bunker mat was used in conjunction with a blended sand/loam bunker sand which has resulted in bunkers that experience negligible sandslip while remaining consistent and drv.

IRRIGATION

David Hanby from Hydro Pumping and Irrigation was selected as the irrigation designer having worked closely with the club on its recycled water use and pumping systems. Budgetary constraints meant that David had to design a system which would maximise coverage while allowing additional irrigation to be added in years to come as funds became available. Thankfully through the recycling of existing sprinkler heads and valves it was possible to achieve full irrigation coverage during the construction process.

A new pump station was also included in the upgrade of the irrigation system with 150mm rubber ringed mainlines and PVC laterals connecting to valve-in-head Toro sprinkler heads. Back-to-back part and full circle sprinklers have been used in the greens to allow more precise irrigation.

The new Palms irrigation system was designed using 930 new Toro 835 series and DT34 sprinklers. As well as these a further 100 or so Toro 730 series sprinklers were recycled from the old system. This included about 50 good condition 734 valve-in-head sprinklers from the old greens that were used in the driving range as well as another 50 'block pattern' 730 sprinklers that were used on some out of play



The par 3 5th during construction. The third and final stage involved holes 4-9 and was completed in November 2010

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27th Australian Turfgrass Conference Adelaide Convention Centre, Adelaide. 15th and 16th June, 2011. COURSE CONSTRUCTION



The original Palms course closed on 2 April 2009 with stage two of construction including the 3rd and holes 10-18 (pictured is 17). This stage took 10 months to complete rough areas. These were connected to recycled solenoid valves that are connected to the new pipe and cables.

TEEING OFF

The highly anticipated opening day for the Palms was to be Saturday 9 April, but as Mother Nature had often done through this project, she had other ideas and dropped over 60mm of rain. On an already saturated course, this made it impossible to open. The very difficult decision to postpone the opening for one more week was made and all fingers were crossed that the forecast week of rain would not eventuate.

Thankfully this proved to be the case and a dry week and 600 metres of additional drainage work had the course in perfect condition for the 16 April unveiling. Ross Watson was given the honour of hitting the opening tee shot (which went right down the middle of the fairway) and was followed by 170 members and guests who all thoroughly enjoyed their first experience of this truly unique golf course.

Now that the course is open, a total of 11 dedicated staff will be in charge of maintaining the Palms, plus an irrigation technician and landscape team of five which is spread across both courses. Due to the large distance between our existing maintenance compound and the Palms course, plans for a satellite maintenance facility are currently being drawn up. This will increase our efficiencies (the savings will be significant in just moving machinery alone) and we are hopeful that this will be completed within the next couple of years.

We also recently signed a new fleet agreement with Toro Australia and part of that process was looking at different machinery options to assist in improving such efficiencies. We have also taken delivery of new Flex 21 greens mowers which were a necessity due to the undulating surfaces of the new Palms greens.

LOOKING AHEAD

Sanctuary Cove Golf & Country Club now boasts two world class golf courses and it is our hope that the new Palms course will join the Pines among Australia's top 50 golf courses. As well as the two championship courses, members now also have three practice holes, a brand new state-of-the art clubhouse, a brand new recreation and function centre and practice facilities which include 3000m² of practice putting greens and a double-ended driving range.

Despite all this now being in place the club is not happy to rest on its laurels and the next project on the agenda will be the modernising of the Pines course. There have been a number of issues on the Pines in recent times, some agronomic and some design, and the club has engaged the Arnold Palmer Design Company, responsible for the original Pines layout, to devise a master plan to upgrade the course. We are hoping to make a start on these improvements in early 2012, with a projected finish date somewhere around 2015.

These works will include the replacement of all greens, tees and bunkers and the replacement of nearly 9000 pine trees. The radiata pines, which are currently a major feature of the Pines course, are coming to the end of their lives and we are looking to replace them with a mixture of pine-like trees including the Australian white cypress, casuarinas, Wollemi pines, Norfolk pines with some melaleucas interspersed for good measure.

It is set to be another challenging period for the Sanctuary Cove maintenance team, but one which we are looking forward to. \underline{w}



One of the greatest challenges throughout the project was dealing with issues regarding existing neighbouring residences

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ENVIRONMENTAL MANAGEMENT

AL MANAGEMENT

Sustainable supers

Recognising the importance of sustainability, 20 turf management facilities in south east Queensland were recently part of a Turf Sustainability Cluster programme in conjunction with e-par and the Queensland government.



n May 2009, e-par started the Turf Sustainability Cluster programme which brought together 20 south east Queensland based turf facilities – 18 golf clubs, one racing club and the state golfing body Golf Queensland.

The objectives of the cluster were to showcase practices occurring within the turf management industry that promote sustainable activities such as energy reduction, fuel and greenhouse gas emission reductions, waste management practices and water management.

The Turf Sustainability Cluster was part of the Department of Environment and Resource Management (DERM) ClimateSmart Business Cluster Program. This state government initiative enables small and medium Queensland businesses to team up with a 'Cluster Leader' to identify opportunities and increase knowledge on how to become more sustainable.

These 'leaders' motivate, improve knowledge and assist participating businesses reduce costs by improving eco-efficiency. Businesses are often motivated to make change but individually they can lack knowledge and direction, and are hesitant to make changes. Working together, however, businesses are more confident to embrace change, learn and share experiences.

In the case of the Turf Sustainability Cluster, action plans were developed documenting the goals and targets for each cluster participant and monitoring was managed, measured and documented through the web-based e-par environmental management system (EMS) platform. Support was provided by cluster manager Dean Scullion (e-par) with Terry Muir as cluster leader.

The focus of the cluster was on the turf maintenance area of each facility. A workshop was initially held at Sanctuary Cove Golf & Country Club in August 2009 to identify achievable goals for the participants as a means to ensure all could simply see the benefits of the process and embrace the goals over the term of the project.

Participants were given a presentation to show various sustainable turf maintenance practices carried out around Australia. The Australian Golf Course Superintendents Association (AGCSA) has had a national environmental initiative running since 2006 – the Australian Golf Environmental Initiative http://environment.agcsa.com.au/ – and various sustainable examples from the initiative were discussed via a Q&A forum with cluster participants. These included:

- Strategic environmental management through EMS;
- Strategies to reduce mowing;
- The development of waste management plans;
- Water conservation initiatives.

A discussion on the drumMUSTER chemical container recycling programme and its services in the south east of Queensland was held and a presentation from DERM was provided to educate the participants of the resources available to them via DERM and the ecoBiz programme (ecoBiz is DERM's eco-efficiency partnership programme with Queensland business).

All but one of the cluster participants operates an EMS and action plans were developed to focus on greenhouse gas emissions and water management. Dean Scullion, in the role of cluster support, conducted ongoing liaison and support for the participants and also monitored the progress of each member.

Data collection requirements relating to mowing regimes, water use and waste management were documented in action plans. DERM's ecoBiz small business calculator was used to calculate baseline data and the savings of greenhouse gas emissions, waste and water.

Site surveys of each turf maintenance facility were conducted via a site visit. Participants were very enthusiastic about the programme and eager to showcase their sustainability efforts. The action plans were developed from either the e-par action plan templates of their EMS or via the action plan section within the ecoBiz calculator.

Data was collected on fuel use associated with mowing regimes, the use of plant growth regulators as a means to reduce mowing intensity and water consumption and reduction actions. Records kept by participants provided the bulk of the data and this data was entered into the ecoBiz small business calculators for both baseline and reassessment.

As mentioned, there were 20 participants in the Turf Sustainability Cluster from the Gold Coast, Brisbane and Sunshine Coast regions (see page 36 for a breakdown of cluster participants). All cluster participants had and continue to have a common goal of improving the sustainability of their organisation and enhancing golf's sustainability image. All reported their desire to demonstrate a pathway to improved environmental performance through their commitment to the AGCSA environmental initiative.

SIGNIFICANT SAVINGS

Cluster participants received instruction and advice on goals and targets of the cluster and were encouraged to utilise their e-par EMS platforms to monitor and manage data and actions. Dean Scullion was responsible for site visits and data collection with the results focussing on greenhouse gas emissions, reduction of waste to landfill and water conservation. Results were:

 Greenhouse gas emissions: The cluster reported that the use of growth regulators on



turf surfaces had reduced mowing regimes of fairways using fuel powered plant by 20 per cent. Across the cluster this totalled a reduction in emissions of 46,850 kilograms (see Table 1, page 37).

- Waste: The cluster reported the removal from landfill of 2002 chemical containers. Cluster participants entered into an agreement with drumMUSTER to collect and recycle used chemical containers. These used containers were collected in purpose built collection cages and total drums collected represented 100.9m³.
- Water use reduction: Across the cluster water reductions averaged 36 per cent (see Table 2, page 38). Water conservation strategies adopted by the group included: closed looped recycled water wash bays; installing rainwater tanks; using third party recycled water to wash equipment; blowing grass off mowers instead of using water to wash them; and reducing the amount of unnecessary equipment washing. (It should be noted that while the recycling of waste water in washing operations using water treatment plant may have reduced the consumption of water,

Above: Gold Coast based members of the Turf Sustainability Cluster (from left) were Robin Doodson (Sanctuary Cove), Phil Soegaard (Lakelands), Mark Hauff (Colonial), Rodney Cook (The Grand), Glenn Beauclerc (Robina Woods), Paul McLean (RACV Royal Pines), David Lunardelli (Hope Island Resort) with Dean Scullion (e-par)

Oppostie page: Twenty turf management facilities from the Gold Coast, Brisbane and Sunshine Coast regions (pictured is Lakelands Golf Club on the Gold Coast) were part of the Turf Sustainability Cluster programme that demonstrated sustainable practices being adopted by the turf management industry



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TURF SUSTAINABILITY CLUSTER PARTICIPANTS

BRISBANE GOLE CLUB



An 18-hole private golf club with course maintenance managed by Ben Cavanagh (pictured). The club has an EMS and is part of the

Australian Golf Environmental Initiative. The club works with the Oxley Creek Environment Group to help rehabilitate local waterways.

PACIFIC HARBOUR GOLF & COUNTRY CLUB

An 18-hole resort club with course maintenance managed by Kelvin Nicholson. The club borders a national park and has been involved with local Bribie Island environmental groups.

WYNNUM GOLF CLUB

An 18-hole members golf club with course maintenance managed by superintendent Jason Adams (pictured). The

club is located close to Moreton Bay Island and has implemented water saving strategies as part of the club's e-par EMS.

BROOKWATER GOLF CLUB

An 18-hole members and public golf club with course maintenance overseen by superintendent Geoff Bennell. The club is a green island among a large residential development and the club has always followed a planned and considered monitoring process when applying its recycled water to the course.

SANCTUARY COVE GOLF & COUNTRY CLUB



A 36-hole private golf facility with course maintenance overseen by superintendent Robin Doodson (pictured). The club has been

a member of the Audubon Cooperative Sanctuary Program for many years and also works closely with Parks & Wildlife to protect the last remaining population of Eastern Grey kangaroos in the Hope Island area.

VIRGINIA GOLF CLUB

A 27-hole golf club open to members and visitors with maintenance directed by superintendent Barry Lemke. Virginia has recently upgraded its wash down area.

LINKS HOPE ISLAND



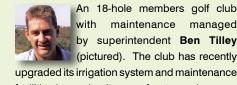
An 18-hole members golf club with course maintenance managed by superintendent David Lunardelli (pictured). The

club was constructed on old farming land and has reported increased bird life activity since opening (it has been reported that 72 different bird species have been seen at Hope Island).

ROBINA WOODS

An 18-hole club for both members and visitors with course maintenance managed by superintendent Glenn Beauclerc (pictured right). Robina Woods has previously been recognised as a sanctuary for native flora and fauna.

HEADLAND GOLE CLUB



with maintenance managed by superintendent Ben Tilley (pictured). The club has recently

upgraded its irrigation system and maintenance facilities improving its use of water and energy.

GOLF QUEENSLAND

Golf Queensland has been a strong supporter of the Australian Golf Environmental Initiative and helped promote the Turf Sustainability Cluster. Golf Queensland is in the early stages of developing policies on environmental management.

THE GRAND GOLF CLUB



An 18-hole private members golf club with course maintenance managed by Rodney Cook (pictured). The Grand has previously upgraded its equipment washing area and started implementing its e-par EMS.

WINDAROO LAKES GOLF CLUB

An 18-hole public golf club with course maintenance managed by superintendent Dave Morrison. Windaroo hopes to demonstrate a pathway to improved environmental performance and sustainability and join the Australian Golf Environmental Initiative and sees its participation in the cluster as a vehicle to communicate to management the many benefits of sustainability.

THE COLONIAL



An 18-hole golf club for both members and visitors with course maintenance managed by Mark Hauff (pictured). The Colonial has

developed a water management plan and actively reports its water savings to council.

BRISBANE RACING CLUB (DOOMBEN)

A public recreation racing facility, formerly managed by Warren Williams who is now with Racing Queensland. Doomben has worked previously with ecoBiz to make significant reductions in waste and actively promotes recycling. The club is also developing the e-par EMS platform for racing



Robina Woods superintendent Glenn Beauclerc receives his participation certificate from QLD **Environment Minister Kate Jones**

RACV ROYAL PINES RESORT



A 27-hole golf resort facility with course maintenance managed by Paul McLean (pictured). RACV Royal Pines Resort has recently

been involved with council to assist with management of aquatic weeds and is currently in the process of upgrading its washdown facilities.

ROYAL QUEENSLAND GOLF CLUB

An 18-hole private members golf club with current superintendent Marcus Price taking over from Danny Brown who was in charge during the time of this programme. Queensland has previously upgraded its irrigation system to improve its water and energy efficiency.

LAKELANDS GOLF CLUB



An 18-hole members club with course maintenance being managed by Phil Soegaard // (pictured). Lakelands has been

actively involved in the National Plant a Tree Day for 10 years. The club hosts a tree planting day in conjunction with the national event and invites community and golf club members to join in.

PACIFIC GOLE CLUB

An 18-hole members golf club with course operations managed by Graham Sims. Pacific Golf Club has installed water saving devices within the clubhouse to reduce consumption.

NUDGEE GOLF CLUB

A 36-hole members golf facility with course maintenance managed by superintendent David Brushfield. The Nudgee Golf Club borders the Bondall Wetlands and currently harvests and recycles water.

PINE RIVERS GOLF CLUB

An 18-hole golf club for both members and visitors with course maintenance managed by superintendent Colin Caulfield. Pine Rivers has implemented water saving programmes.

TABLE 1. TURF SUSTAINABILITY CLUSTER ENERGY USE DATA

| Participant Company | Baseline | Re-assessed | Energy | GGE Savings |
|----------------------------|-----------------|-----------------|-------------|-------------|
| | energy use (MJ) | energy use (MJ) | savings (%) | (kg) |
| Brookwater Golf Club | 278219.52 | 223184.64 | 19.8% | 4271 |
| Headland Golf Club | 278219.52 | 222727.68 | 19.9% | 4306 |
| Lakelands Golf Club | 39744 | 30862.08 | 22.3% | 689 |
| Links Hope Island | 278219.52 | 223184.64 | 19.8% | 4271 |
| Nudgee Golf club | 111287.04 | 89272.32 | 19.8% | 1708 |
| Pacific Golf Club | 10184.76 | 8190.90 | 19.6% | 154 |
| Pacific Harbour Golf & CC | 278219.52 | 223184.64 | 19.8% | 4271 |
| Robina Woods | 238471.68 | 191301.12 | 19.8% | 3660 |
| RACV Royal Pines Resort | 317963.52 | 255068.16 | 19.8% | 4881 |
| Royal Queensland Golf Club | 278219.52 | 223184.64 | 19.8% | 4271 |
| Sanctuary Cove Golf & CC | 278219.52 | 223184.64 | 19.8% | 4271 |
| Brisbane Golf Club | 238471.68 | 191301.12 | 19.8% | 3660 |
| The Colonial Golf Club | 238471.68 | 191301.12 | 19.8% | 3660 |
| The Grand Golf Club | 248409.60 | 199269.12 | 19.8% | 3813 |
| Windaroo Lakes Golf Club | 173886.72 | 139488 | 19.8% | 2669 |
| Total for Cluster | 3323273.76 | 2664438.30 | 19.8% | 46850 |

NB: Baseline assessment (first assessment) conducted between 1 July 2007 – 30 June 2008. Reassessments conducted between 1 July 2008 to 30 June 2009.

we expect the infrastructure would consume significant energy and that was not examined as part of this cluster).

CREATING AWARENESS

The Turf Sustainability Cluster highlighted the significant sustainability efforts made within

the Queensland golf and sports turf industries. Participation in the drumMUSTER programme has increased across the participants and is ongoing, resulting in more facilities recycling their used chemical containers and drums.

The use of plant growth regulators has also increased across the cluster as a result of raised



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ENVIRONMENTAL MANAGEMENT

L MANAGEMENT



Above: Cluster participants reported that the use of growth regulators on turf surfaces had reduced fairway mowing regimes by 20 per cent

Top right: The cluster reported the removal from landfill of 2002 chemical containers, which constituted more than 100m³ awareness. The outcomes are reduced maintenance activity and greenhouse gas emissions from decreased use of turf mowing equipment.

Sports turf maintenance is a significant consumer of water and fuel resources. The cluster group's results and achievements demonstrate many have embraced sustainable practice and responsible use of resources. One significant success of the project was the participation levels and the awareness from cluster members that good management of environmental resources makes good business sense. The use of an EMS – in this case e-par – by many cluster members, enabled the participants to plan, monitor, measure, record and report to their club's ongoing sustainable practices.

It should be noted that this cluster reported only on the turf management aspect of the golf course and did not examine clubhouse, pro shop or hospitality operations. We believe a significant outcome of the cluster was the identification of the need to further educate club management of the benefits of sustainability. Each club represented in the cluster has an environmental champion but



unfortunately their influence on the overall facility is restricted to the turf maintenance area.

To highlight the excellent work achieved by the cluster, seven superintendents based on the Gold Coast who were part of the programme were recognised at a special presentation ceremony held at Lakelands Golf Club in March 2011. Glenn Beauclerc (Robina Woods GC), Mark Hauff (The Colonial GC), Rod Cook (The Grand GC), Robin Doodson (Sanctuary Cove G&CC), Phil Soegaard (Lakelands GC), Paul McLean (RACV Royal Pines) and David Lunardelli (Hope Island Resort) were officially presented their participation certificates by Queensland Environment Minister Kate Jones.

Sustainability is an increasingly important principle of doing business in the golfing and turf management world. Sustainable practices put in place by the cluster participants have been designed to protect the resources and relationships with stakeholders and will enable golf's sustainability story to be told and understood.

It was clear from the outset that the participants were focussed on environmental sustainability not only as a necessary step to assuring resources are available to sustain future endeavours, but also as a means to demonstrate integrity, assure transparency, and consider impacts on the environment.

| Participant Company | Baseline | Re-assessed | Water savings |
|-----------------------------|----------------------|----------------------|-----------------|
| | water use (KL) | water use (KL) | |
| Brookwater Golf Club | 859 | 603 | 29% |
| Headland Golf Club | 756 | 303 | 60% |
| Lakelands Golf Club | 1956 | 586 | 70 |
| Links Hope Island | 859 | 431 | 50% |
| Nudgee Golf club | 697 | 349 | 50% |
| Pacific Harbour Golf & CC | 477711 | 58877 | 87.5% |
| Robina Woods | 644 | 65 | 90% |
| Royal Queensland Golf Club | 995 | 848 | 15% |
| Sanctuary Cove Golf & CC | 1191 | 1397 | 30% |
| Brisbane Golf Club | 860 | 603 | 30% |
| The Colonial Golf Club | 652 | 360 | 45% |
| The Grand Golf Club | 687 | 475 | 30% |
| Windaroo Lakes Golf Club | 398 | 199 | 50% |
| Pine Rivers Golf Club | 286 | 382 | 0% ^a |
| Different assessments dates | 31/10/07 to 31/10/08 | 31/10/08 to 31/10/09 | |
| Wynnum Golf Club | 498 | 200 | 59% |
| Virginia Golf Club | 1000 | 200 | 80% |
| Total for Cluster | 490049 | 65878 | Average 36% |

TABLE 2. TURF SUSTAINABILITY CLUSTER WATER USE DATA

NB: Baseline assessment (first assessment) conducted between 1 July 2007 – 30 June 2008. Reassessments conducted between 1 July 2008 to 30 June 2009. ^a Increase of 34% although business doubled

Official Guide 27th Australian Turfgrass Conference and Trade Exhibition Adelaide 13-17 June 2011

6



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CONFERENCE

PLAN, BUILD, PLAY IN ADELAIDE

t is a real pleasure to welcome you all and thank you for giving up your valuable time to spend a week in Adelaide at the 27th Australian Turfgrass Conference and Trade Exhibition. I extend a special welcome to all of you who have come to enjoy the event for the first time; I am sure once you have experienced the week you will definitely become one of our regular attendees.

Simone Staples and Melissa Wallace, with the support of the great team at the AGCSA, have put together another exceptional week of education, networking and social events which should please all delegates whatever your turf background. There is certainly something for everyone in an interesting and diverse programme.

It gives me great pleasure to welcome Brian Whitlark from the USGA and Dr Micah Woods from the Asian Turfgrass Center who will head the lineup of speakers in Adelaide. These fine international guests are joined by some of the best local experts who will cover many topics under the conference theme banner **Plan, Build, Play.** Of course the week will not be all work and there will be the usual social gatherings where delegates can unwind while meeting up with old friends and associates from conferences past. Here you will have the chance to network with your colleagues in some great venues in a relaxed atmosphere.

I would like to extend a warm thank you to our wonderful trade members who have shown fantastic support for the trade exhibition again this year. Booths were sold out very early on and without this tremendous support we would find it very difficult to run such a successful event.

I look forward to meeting as many of you as possible in Adelaide and trust you all have a week of high quality education and great networking opportunities. Most importantly, however, I hope you have an all-round enjoyable experience.

ALLAN DEVLIN PRESIDENT, AGCSA SUPERINTENDENT, SECRET HARBOUR

27th Australian Turfgrass Conference and Trade Exhibition Adelaide Convention Centre, 13-17 June 2011

The Adelaide Convention Centre will entertain delegates for this year's much awaited Australian Turfgrass Conference and ATM will be with you all week to act as your official guide. Read on to find out what awaits you in Adelaide... n partnership with principal sponsors Toro Australia, Syngenta and Rain Bird, the AGCSA welcomes all delegates to Adelaide for the 27th Australian Turfgrass Conference and Trade Exhibition. This year's gathering is the fourth 'regional' format conference since the first at Echuca-Moama in 2005 and we are sure all delegates attending in 2011 will find it a most informative and entertaining week.

The theme 'Plan, Build, Play' comes directly from delegate feedback received over the last two years. Delegates have asked us to concentrate on core turf management issues as well as including superintendents and turf managers from low and medium budget facilities and topics which address personal development issues.

In an attempt to add value to the conference we will be trialling two optional workshops which will run on Friday 17 June. As well as the traditional post conference turf tour, delegates will also have the option of attending these two one-and-a-half hour sessions which will focus on personal wealth and financial management and occupational health and safety.

Each workshop will run twice – between 9am-10.30am and then again from 11am-12.30pm – meaning delegates can attend both. Each workshop is included as part of the full delegate registration cost and we encourage you to take advantage of them – their ongoing success and inclusion in the conference depends on your attendance! The aim of the personal wealth and financial management workshop is to provide delegates with information on insurance needs, boosting superannuation and investment opportunities, selfmanaged superannuation funds, managing personal finances, financial goal setting and transition to retirement strategies.

It's a well known fact that superintendents and turf managers work long hard hours, so it makes sense that the money you earn should work just as hard and it is hoped that through a deeper understanding of these financial matters, delegates will be able to tailor a wealth creation strategy. The AGCSA is pleased to confirm that Gerry Power will be conducting this workshop. Gerry is the founding owner of Sydney-based Lakeside Financial Planners which also operates Golf Super, a superannuation fund for golf employees.

The OH&S workshop will look at the complex OH&S legislative framework that exists in Australia in regards to environmental management, providing a safe and healthy workplace for employees and chemical handling, use and storage.

While the Friday workshops will be an exciting new feature, many of the tried and true favourites of conferences past will again be part of the 2011 programme. The week literally tees off with the AGCSA's two premier golfing events – the Toro AGCSA Golf Championships and the Toro AGCSA Scramble.

A strong field has registered for the championships, to be played on the beautiful Kooyonga Golf Club layout, and with Toro's superb prize of a trip to the Golf Industry Show and a chance to play in the GCSAA National Championships up for grabs, the competitive juices will be flowing. Meanwhile, the Toro AGCSA Scramble will afford players a chance to play one of the state's best public access facilities, Adelaide Shores, in a relaxed Ambrose format.

Again the trade has embraced the Australian Turfgrass Conference and this year's event sold out in record time. The smaller stand size and more intimate format of the regional conferences have become a hit for both delegates and exhibitors alike and more than 40 companies will be a part of this year's show.

The social networking aspect of the conference is a perennial highlight and this year conference



organiser Simone Staples has put together some wonderful functions, including the Bayer Welcome Reception and Syngenta President's Dinner, which will take advantage of the sights, sounds and tastes of South Australia.

On behalf of the Board and staff at the AGCSA, we trust you will all enjoy your week in Adelaide and hope that you take away plenty of positive memories from your conference experience.



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EVENT INFORMATION AND CONFERENCE REGISTRATION

he conference registration desk will be located in the main foyer of the Adelaide Convention Centre (ACC). Delegates are requested to visit the registration desk upon arrival to receive accreditation and their delegate satchel. The registration desk will operate at the following times:

| Sunday | 2.30pm-4.30pm | | |
|-----------|---------------|--|--|
| Monday | 9am-4pm | | |
| Tuesday | 7am-4pm | | |
| Wednesday | 7.30am-1.30pm | | |
| Thursday | 7.30am-3pm | | |

2011 TORO AGCSA GOLF CHAMPIONSHIPS

Where: Kooyonga Golf Club When: Monday 13 June

Details: Buses will depart for Kooyonga from ACC at 7am for an 8.30am shotgun start. Light breakfast will be served upon arrival. Luncheon and presentation ceremony to follow in the clubhouse, with buses returning to ACC mid-afternoon.

2011 TORO AGCSA SCRAMBLE

Where: Adelaide Shores When: Monday 13 June

Details: Buses will depart for Adelaide Shores from ACC at 6.45am for an 8am shotgun start. Light breakfast will be served upon arrival. Luncheon and presentation ceremony to follow in the clubhouse, with buses returning to ACC mid-afternoon.



BAYER ENVIRONMENTAL SCIENCE WELCOME RECEPTION

Where: Adelaide Town Hall

When: Monday 13 June (7.30pm-10pm)

Details: This year's Bayer Environmental Science Welcome Reception will be held at the historic Adelaide Town Hall (128 King William St). Given the function will be staged in this Victorian building which dates back to 1866, theme for the evening will be 'black and white'. The Adelaide Town Hall is a mere five minute walk from the ACC. AGCSA representatives will meet delegates at the ACC at 7.10pm to accompany them on their walk to the venue.

27TH AUSTRALIAN TURFGRASS CONFERENCE TRADE EXHIBITION

Where: Adelaide Convention Centre

When: Wednesday 15 June (9am-5pm) and Thursday 16 June (9am-2.30pm)

Details: Sold out in record time, this year's trade exhibition will feature over 40 leading turf management companies exhibiting their products and services. Entry to the trade exhibition is free. If you are attending the trade exhibition only you will be required to fill in a registration form before entering. See later in this guide for a full listing of companies exhibiting. Trade Exhibition Happy Hour will be held from 3.30pm-5pm on Wednesday 15 June.

2011 AGCSA AGM

Where: Adelaide Convention Centre When: Wednesday 15 June (5pm) Details: Open for all current financial AGCSA members. Two board director positions will be up for election.

SYNGENTA PRESIDENT'S DINNER AND 2011 AGCSA AWARDS PRESENTATION CEREMONY

Where: Sebel Playford Art Nouveau Ballroom (120 North Terrace)

When: Thursday 16 June (7pm pre-dinner drinks for a 7.30pm start)

Details: To cap off a week of camaraderie and education we have planned a fantastic night at the Sebel Playford's Art Nouveau Ballroom. An indulgent degustation menu has been put together to ensure all delegates sample the best produce that South Australia is known. The dinner will include the 2011 AGCSA Awards presentation ceremony. The dinner is an optional extra for all delegates. Tickets can be purchased from the registration desk up until Tuesday. **Dress code:** Semi-formal, dress pants and collard shirt (jacket and tie optional).

POST CONFERENCE TURF TOUR

When: Friday 17 June (8.30am-12.30pm) Details: This year's half-day post conference tour visits two sites – Adelaide Shores and Glenelg Golf Club – with optional Adelaide Airport drop off at

Disclaimer: The above event information was correct at the time of going to print. Any changes will be announced during the conference sessions.



CONFERENCI

Theme for the 2011 Australian Turfgrass Conference is 'Plan. Build, Play' and the education sessions in Adelaide will deal with various techniques and considerations when preparing for greens/ sportsfield construction, re-construction. renovation and their ongoing management and performance. ATM looks at the week's education component and this year's keynote presenters.

AUSTRALIAN TURFGBASS

27th Australian Turfgrass Conference Keynote Speakers and Education Sessions

he seminars in both the golf and sportsfield streams at the 27th Australian Turfgrass Conference are designed to give information on major topics before a panel discussion or workshop starts dealing with the specifics of making the science work.

We begin the education sessions in the planning stages. For the golf stream this includes design, profile type and material selection. For the sportsfield stream, managers need to assess costs and budgets and then present a final proposal before a major reconstruction or renovation can begin. These sessions are designed to give a holistic approach.

Topics that deal with the science side of turf management such as fertility, plant tissue, thatch, microclimates and disease will then be discussed by a variety of experts. These will be supported by presentations on soils, grass types and irrigation, giving conference delegates a wealth of information in regards to maintenance regimes. To make sure that all sessions are relevant, delegates will be offered the choice of either a warm- or cool-season grass workshop.

Specialty golf forums will deal with topics such as green construction, grass variety selection and performance, renovation techniques and measuring performance. The forums and panels include a cross section of superintendents from high traffic public courses, low budget country and regional courses, medium use mid-budget courses and championship layouts. These presenters have been chosen so that delegates are given access to information taking into account a broad range of geographical, climatic and resource factors.

Specialty sportsfield forums will deal with some of the more pressing issues that are faced by today's curators and sportsfield managers. Among them are getting the planning and pitch right when trying to fund major capital works, the juggling of all the various aspects involved when transitioning between sporting seasons or events on multi-use grounds and producing ground assessment reports that measure performance. These subjects are common at all levels of sportsfield management whether the venue is a small country council ground, private school or elite multi-use stadium.

The sportsfield stream will also include a specialty session on cricket wickets and also a look at some of the interesting developments taking place on the industry, including a first-hand account of the devastating impact of the recent Queensland floods.

KEYNOTE PRESENTERS

Although the Adelaide conference is considered a 'regional' conference, the AGCSA has attracted some big name international speakers with Brian Whitlark (USGA Green Section) and Dr. Micah Woods (Asian Turfgrass Center) headlining the week. The AGCSA is delighted to have these two well-respected gentlemen who will team up with a superb cast of Australian experts, superintendents and sports turf managers to inform, education and entertain delegates.



DR MICAH WOODS Asian Turfgrass Centre

Dr. Micah Woods (pictured) is the president and research director of the Asian Turfgrass Center which is based in Thailand. With over fifteen years' experience as a turfgrass manager, scientist and educator, Micah brings a practical scientific perspective to the management of fine turfgrass. His research results have been published in journals such as Crop Science, Soil Science, Applied Turfgrass Science and Weed Technology, and he contributes articles to other magazines and blogs on a regular basis.

Educated at Oregon State University and gaining his PhD in horticulture at Cornell University in 2006, Micah has been the recipient of numerous academic honours and awards. Micah is an adjunct professor in the Department of Plant Sciences at the University of Tennessee and has provided turf advisory services to golf courses in the United States, Japan, China, Hong Kong, Cambodia, Vietnam, Sri Lanka, Thailand, Singapore, Indonesia, and the Philippines.

DR MICAH WOODS SESSIONS

Golf Stream Tuesday: 2pm-2.30pm – Introduction to greens grass selection with Andrew Peart. Golf Stream Wednesday: 8am-8.30am – Greens maintenance – fertility; 11am-1pm – Climatic conditions affecting healthy growth with David Warwick and Terry Woodcock.

Sportsfield Stream Wednesday: 10.30am-11am

Sportsfield maintenance – fertility; 2pm-3.30pm
 Climatic conditions affecting healthy growth with David Warwick and Terry Woodcock.

He has also participated in course preparations for five US Masters at August National Golf Club (where he was a student intern in the mid-1990s), the 1997 Open Championship at Royal Troon and 2007 Open Championship at Carnoustie, and the 2008 and 2009 AT&T Pebble Beach Pro-Ams.

Micah, one of the most well-travelled turfgrass experts going around, will present on fertility issues, the effects of microclimates and will be part of a forum on warm-season grasses.



BRIAN WHITLARK USGA Green Section

Brian Whitlark (pictured) joined the USGA Green Section staff as an agronomist in 2008 and works alongside southwest regional

director Pat Gross in providing turf advisory service visits in Arizona, Nevada and California.

Brian is the USGA's resident expert in water and soil quality issues, expertise that is invaluable when it comes to construction of golf and sportsfield playing surfaces. Brian covers what is perhaps the most demanding golf area in the US – the southwest region. This region is constantly witnessing course construction so Brian has a great deal of exposure to construction activities and is in touch with what superintendents are doing on a daily basis.

Prior to joining the Green Section, Brian worked for four years for the Target Specialty Products Company, based in Phoenix, Arizona. His role in the company involved providing site-specific soil agronomic evaluation and recommendations for golf course superintendents, course officials, sports turf facilities, and other landscapes, covering a territory that included Arizona, California, Nevada and Portland, Oregon. Brian, who received his Bachelors and Masters degrees from the University of Arizona, has written extensively for practitioners in the area of soil, water and interpretation of soil test results.

Brian will be involved in a number of sessions discussing various aspects of greens construction and the importance of having the correct profile.

BRIAN WHITLARK SESSIONS

Golf Stream Tuesday: 8.10am-8.40am – Greens overview; 9.25am-9.40am – USGA profiles; 11am-12.30pm – Green construction workshop with Leigh Yanner and John Odell.

Sportsfield Stream Wednesday: 8am-9.30am

- Profile construction, quality control and grass selections with Andrew Peart.

Golf Stream Thursday: 8.30am-9.30am – Economics of greens construction (costs, resources and communication) with Daryl Sellar.

ALSO PRESENTING IN ADELAIDE...



LOCAL EXPERTS

Gary Beehag (M. Collins & Sons), Les Burdett (ex-Adelaide Oval), Don Cameron (Hydro Plan), lome Christa (Adelaide Shores Recreation Precinct), Jeremy Clapp (FMG Consulting Engineers), Jamie Cox (South Australian Cricket Association), Neil Crafter (Golf Strategies), Phil Ford (University of Ballarat), John Geary (AGCSA), Ernie Gmehling (Ground Science), John Neylan (AGCSA), Andrew Peart (AGCSA), Jon Penberthy (DEEDI), Daryl Sellar (AGCSA) and Terry Woodcock (Sportsturf Consultants).

AUSTRALIAN COURSE SUPERINTENDENTS



Mark Couchman (Cromer Golf Club, NSW), Mal Grundy (Murray Bridge Golf Club, SA), Peter Lonergan (Coolangatta & Tweed Heads Golf Club, QLD), John Odell (Royal Sydney Golf Club,





NSW), **Pat Pauli** (Horton Park Golf Club, QLD), **Shaun Probert** (Ryde-Parramatta Golf Club, NSW), **Trevor Strachan** (Lake Karrinyup Country Club, WA), **Tim Warren** (Horsham Golf Club, VIC), **David Warwick** (Avondale Golf Club, NSW) and **Leigh Yanner** (The National Golf Club, VIC).

AUSTRALIAN SPORTS TURF MANAGERS

Shane Biddle (University of Queensland), Robin Bradbrook (City of Tea Tree Gully, SA), Mark Clarke (City of Holdfast Bay, SA), Scott Egan (Brisbane Boys College, QLD), David Goldie (City of Greater Geelong, VIC), Damian Hough (Adelaide Oval, SA) and Cameron Sutherland (WACA, WA).



Disclaimer: All speakers and sessions were correct at the time of this edition going to print. Any changes made subsequent will be announced during the conference.

AUSTRALIAN

2011 AGCSA Awards - Recognising our industry leaders

he 27th Australian Turfgrass Conference will again provide an opportunity for the industry to recognise its outstanding achievers through the bestowing of the 2011 AGCSA Awards.

Last year a new award was added to the programme – the AGCSA Award for Academic Achievement, presented in partnership with PGG Wrightson Seeds – with Steve Johannessen becoming its first recipient. This award, which recognises those who undertake further turf management studies by completing the Diploma course, joins the AGCSA's four other awards which will again be handed out in Adelaide.

- AGCSA Distinguished Service Award
 Presented in partnership with Scotts Australia
- AGCSA Excellence in Golf Course Management Award Presented in partnership with John Deere
- AGCSA Claude Crockford Environmental Award Presented in partnership with Syngenta
- AGCSA Graduate of the Year Award
 Presented in partnership with Toro Australia

The Adelaide conference will also see the bestowing of another new award – the **STA/TGAA National Sports Turf Graduate Award.** Sponsored by Toro Australia, this award will be handed out alongside the AGCSA's Graduate of the Year Award and in each conference edition of Australian Turfgrass Management we will profile the finalists.

Here, then, are the finalists for both the graduate awards (please note that the finalists for the AGCSA Award for Academic Achievement are profiled on page 70 of this edition as part of Steve Johannessen's New Zealand study tour feature) and the AGCSA and STA/TGAA congratulate all for their efforts in making the national finals.

2011 AGCSA GRADUATE OF THE YEAR AWARD

Presented in partnership with Toro Australia



Ben Callaghan Royal Canberra Golf Club

Playing a lot of golf as a junior in

his home town of Young, NSW, Ben

always took an interest in what the greenkeepers were doing on the course. It was therefore a natural progression that he took on a turf management apprenticeship at Young Golf Club under superintendent Dennis Grounds before making the move recently to Royal Canberra Golf Club where he completed the remainder of his apprenticeship. Ben is now looking forward to enhancing his skills and knowledge through the opportunities that arise from a career in turf management.









PGG Wrightson Turf

AUSTRALIAN TURFGRASS



NEW SOUTH WALES Roger Chaffey Manly Golf Club

Roger has been an apprentice greenkeeper at Sydney's Manly Golf

Club since 2008 during which time he completed his Certificate III in Horticulture (Turf Management) at Kurri Kurri TAFE with distinction. Roger, who comes from an agricultural background, has quickly become a key member of the crew at Manly and has been involved in the extensive redevelopment of the course which will be complete by the end of 2011. Roger beat home fellow finalists Liam Harper (Cammeray GC), Matthew Kellond (Moss Vale GC), Lincoln Stace (Lithgow GC) and David Snell (Armidale GC) to win the NSWGCSA's Vince Church Award in April.

QUEENSLAND



Dane Robertson Indooroopilly Golf Club

Dane edged past a very strong field of state finalists to collect the GCSAQ Graduate of the Year Award.

Dane, who works under superintendent Charlie Giffard at Indooroopilly Golf Club, beat home fellow finalists Anthony Harris (Arundel Hills GC), Mark Spalding (Gainsborough Greens GC) and Andy Boswell (Mount Coolum GC). Dane has acquitted himself admirably throughout his apprenticeship at Indooroopilly and shows a real shine for the work. He is always attentive and keen to pick up useful hints and techniques that might further advance his cause to become a course superintendent. Winning the AGCSA Graduate of the Year Award would be a big step in the right direction in achieving that elusive goal.

SOUTH AUSTRALIA

Tyson Dickinson The Grange Golf Tyson moved to at the beginning

The Grange Golf Club Tyson moved to Adelaide from Nhill at the beginning of 2008 to take up

his traineeship in turf management at The Grange Golf Club. During this time, Tyson has experienced most aspects of turf management, including preparing both the East and West courses for the 2008 World Amateur Teams Championships. He has also been involved in reconstruction work of various playing surfaces including greens, tees and bunkers. Tyson has always demonstrated a willingness to learn new skills and better himself, and is looking to continue his education by undertaking the Certificate IV course.

VICTORIA



Dan Oswin

Novotel Forest Resort

The VGCSA's 2011 representative hails from the Novotel Forest Resort Golf Course in Creswick. Oswin, who

completed his apprenticeship through Geelongbased Gordon TAFE, has already experienced more than most having been involved in the construction of the Tony Cashmore-designed course between 2006 and 2008 and now as part of the course maintenance team. As well as being OH&S and First Aid rep, Dan has also taken on the irrigation technician's role during his time at Forest Resort and early on in his apprenticeship was named Gordon TAFE's Best First Year Apprentice.



WESTERN AUSTRALIA Tom Purser

Meadow Springs G&CC

Twenty-one-year-old Tom came into turf management after finishing his Tertiary Entrance Examinations and

despite gaining a place at university decided to defer his studies for a year to work. Applying for a position at Meadow Springs Golf and Country Club in Perth as an apprentice, to Tom's surprise and delight he found he had an aptitude and passion for turf management and four years on has become an integral member of the Meadow Springs team. Tom's ambition is to become a course superintendent and to continue to improve his knowledge and skills in turf management.

2011 NATIONAL SPORTS TURF **GRADUATE AWARD**

ACT

Presented in partnership with Toro Australia



Danny Hull **Queanbeyan Bowling Club**

Danny discovered the wonders of the sports turf industry when he decided on a career change in his late 30's.

He started his apprenticeship at Yamba Sports Club but then moved to Queanbeyan Bowling Club where he has been for three-and-half-years. Despite initial reservations about being the oldest in his TAFE class, Danny loved the experience and achieved the 2010 Canberra Institute of Technology Award for Excellence in Turf.

Danny is very passionate about Queanbeyan Bowling Club and has a lot of pride in presenting quality bowling greens to the members. Queanbeyan is a large club with five greens to maintain as well as the surrounding areas and under the guidance of Wade Turner, Danny has excelled at his job.



NEW SOUTH WALES

Shaun Patterson The Australian Turf Club

Shaun is a man on a mission and has a real passion for environmental management and sustainability.

His dedication to his studies and work has been rewarded with extra responsibility in his role as turf manager at The Australian Turf Club where he is part of the organisation's OH&S committee, Sydney Water recyclable water scheme and e-par leader.

Shaun has enjoyed implementing the theory he learned at Richmond TAFE into practical work situations at Rosehill Racecourse and takes on additional roles to better understand the relationship between the horses and the racecourse, including barrier supervisor on event day. Shaun is to be commended for his commitment and interest in the sustainable future of the industry.

QUEENSLAND



Brendan Ott Toowoomba Grammar School Brendan is a young guy with a big

future. He works at Toowoomba Grammar School and is very dedicated

to his workplace. He also offers his professional expertise in his spare time by helping out a local cricket club and a local American Football Club. Brendan was also fortunate enough to gain a week's work experience at The Gabba. Brendan's commitment and passion for his work was rewarded when he was promoted to head greenkeeper/ grounds supervisor in late 2010. Brendan will continue his turf education when he starts the Certificate IV course.

SOUTH AUSTRALIA



Luke Cousins D&D Curators

Luke has been employed as a turf manager with D&D Curators for threeand-half-years and displays great commitment to his employer and a real passion for

the work he does. Luke manages the greens at Woodville Lawn Bowling Club and is the curator for Woodville District Cricket Club.

Due to his commitment and professionalism, both venues have seen a substantial improvement which has resulted in great successes for both clubs. It is a credit to Luke that he can manage both venues on his own and still be able to provide top quality playing surfaces. Luke believes strongly in mentoring and encouraging future apprentices.

VICTORIA

Rebecca Dynon

Tatura & Shepparton Racing Club

Rebecca discovered her interest in sports turf while working as a track rider for 20 years. Wanting to learn

more about turf management and how it affects the performance of the horses racing, she took up an apprenticeship at Tatura & Shepparton Racing Club and attended NMIT, Fairfield. Rebecca also worked at Seymour Racing Club and was then appointed the racecourse manager of Tatura Racing Club.

Since taking over at Tatura, Rebecca's course has received some great feedback from all levels of the racecourse industry. She has been acknowledged by the industry for her hard work and dedication with Apprentice of the Year 2008/2010 and was winner of the prestigious 2010 Steriline/ ARMA Hong Kong Scholarship.



TORO







PGG Wrightson Turf

AUSTRALIAN

Timetable - Golf Stream

MONDAY

CONFERENCE

8.30am - 3:00pm Toro AGCSA Golf Championships and Presentation Lunch Kooyonga Golf Club



8.00am - 3.00pm Toro AGCSA Scramble and Presentation Lunch Adelaide Shores

7.30pm - 10.00pm Bayer Welcome Reception Adelaide Town Hall

TUESDAY

8.10am - 8.40am Brian Whitlark Greens overview

8.40am - 9.10am Neil Crafter Greens design

9.10am - 9.25am John Neylan Non-UGSA profiles

9.25am - 9.40am Brian Whitlark UGSA profiles

9.45am - 10.30am Morning Tea

10.30am - 11.00am Ernie Gmehling and John Neylan Construction sands and testing

11.00am - 12.30pm Leigh Yanner, John Odell, Brian Whitlark Construction workshop discussing

USGA and push-up greens

12.30pm - 2.00pm Lunch and Award Announcements



2.00pm - 2.30pm Andrew Peart and Dr Micah Woods Grass selection

2.30pm - 4.00pm Pat Pauli, Leigh Yanner, Trevor Strachan, Mark Couchman Panel discussion on various grass types and species

WEDNESDAY

8.00am - 10.00am Greens Maintenance

Dr Micah Woods Nutritional requirements

John Geary Plant tissues and soil

Phil Ford Thatch

Don Cameron Irrigation

10.00am - 11.00am Morning Tea and Trade Show

11.00am - 1.00pm Climatic Conditions Affecting Healthy Growth

David Warwick and Dr Micah Woods Microclimates

Terry Woodcock Pests and diseases

Panel Discussion - David Warwick, Dr Micah Woods and Terry Woodcock Microclimates and disease

1.00pm - 2.30pm Lunch and Trade Show

2.30pm - 3.30pm Choice of Workshop

Andrew Peart and John Geary Cool-season grasses

Jon Penberthy and John Neylan Warm-season grasses

3.30pm - 5.00pm Trade Show and Happy Hour

5.00pm - 6.30pm 2011 AGCSA AGM

DISCLAIMER

All times and sessions presented were correct at the time of this edition going to print. Any changes will be announced during the conference sessions or at the registration desk.

THURSDAY

8.30am - 9.30am Daryl Sellar and Brian Whitlark Economics - costs, resources and communication

9.30am - 10.30am Morning Tea and Trade Show

10.30am - 12.30pm Mal Grundy, Peter Lonergan, Tim Warren, Trevor Strachan Renovation techniques - overview, panel session then open discussion

12.30pm - 2.00pm Lunch and Trade Show

2.00pm - 4.00pm Iome Christa, Peter Lonergan and Shaun Probert

Performance - panel discussion/ forum dealing with measuring performance, maintenance regime changes and outcomes, member expectation and communication

7.00pm-12.00pm Syngenta President's Dinner and Award Presentations syngenta Sebel Playford

FRIDAY

Choice of Workshops 9.00am - 10.30am and 11.00am - 12.30pm

NB: Each workshop will run twice

Personal Wealth - Gerry Power Session on superannuation, investments and wealth planning

Occupational Health & Safety Introduction to the AGCSA OH&S starter pack

OR

8.30am - 12.30pm Turf Tour Adelaide Shores Recreation Precinct and Glenelg Golf Club. Topics: Water and environmental management

10.30am - 11.00am Morning Tea - all

46 AUSTRALIAN TORFORASS

Timetable - Sportsfield Stream

MONDAY

8.00am - 3.00pm Toro AGCSA Scramble and Presentation Lunch Adelaide Shores



7.30pm - 10.00pm Bayer Welcome Reception Adelaide Town Hall

TUESDAY

8.00am - 9.45am Planning for Major Capital Works

Jeremy Clapp Assessment

Andrew Peart Plant tissues and soil

Daryl Sellar Costings and budgets

Terry Woodcock Final proposals

9.45am - 10.30am Morning Tea

10.30am - 12.30pm The Successful Project Pitch

Mark Clarke, Damian Hough and Robin Bradbrook Representatives from council, school and industry will discuss how to present and pitch projects with a view to final approval

12.30pm - 2.00pm Lunch and Award Announcements



2.00pm - 4.00pm **Cricket Wicket Soils**

Gary Beehag Justification for a national cricket soil specification

Ernie Gmehling Cricket soils - investigating laboratory techniques and correlation to field performance

Cameron Sutherland WACA wicket - the science behind the bounce.

WEDNESDAY

8.00am - 9.30am Construction **Brian Whitlark and Andrew Peart** Getting the profile right, quality control and grass selections

9.30am - 10.30am Morning Tea and Trade Show

10.30am - 12.30pm **Turf Maintenance**

Dr Micah Woods Nutritional requirements

John Geary Plant tissues and soil

Phil Ford Thatch

Don Cameron Irrigation

12.30pm - 2.00pm Lunch and Trade Show

2.00pm - 3.30pm **Climatic Conditions Affecting Healthy** Growth

David Warwick and Dr Micah Woods **Microclimates**

Terry Woodcock Pests and diseases

Panel Discussion - David Warwick, Dr Micah Woods and Terry Woodcock Microclimates and disease

3.30pm - 5.00pm Trade Show and Happy Hour

FRIDAY

8.30am - 12.30pm

Choice of Workshops NB: Each workshop will run twice 9.00am - 10.30am and 11.00am - 12.30pm

Personal Wealth - Gerry Power Session on superannuation, investments and wealth planning

Occupational Health & Safety Introduction to the AGCSA OH&S starter pack OR

Turf Tour Adelaide Shores Recreation Precinct and Glenelg Golf Club. Topics: Water and environmental management

THURSDAY

8.30am - 10.00am Strategies to Manage Sportsfield Transition Scott Egan, David Goldie and John Neylan

The importance of advance planning during a variety of transition situations including resource management and communication

10.00am - 11.00am Morning Tea and Trade Show

11.00am - 12.45pm What's Happening Around the Grounds

Les Burdett and Daryl Sellar Gliderrol Stadium - the push to improve a suburban footy ground

Shane Biddle The Queensland Floods - before, during and now

12.45pm - 2.30pm Lunch and Trade Show

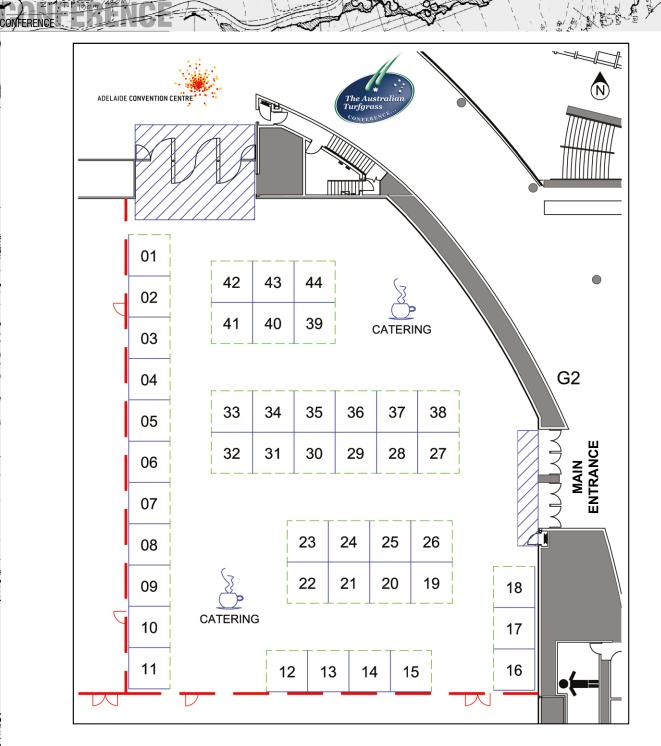
2.00pm - 4.00pm **Measuring Performance**

Jamie Cox and Phil Ford Panel discussion/forum dealing with measuring performance and assessing outcomes. Includes maintenance regimes, user expectations, communication and updating reports and masterplans

7.00pm-12.00pm Syngenta President's Dinner

syngenta

AUSTRALIAN



27TH AUSTRALIAN TURFGRASS CONFERENCE TRADE EXHIBITION

- Yamaha
- 2 Yamaha
- 3 **DrumMUSTER**
- Barmac 4
- 5 Triangle WaterQuip 6
- Hunter Industries
- 7 Australian Seed & Turf Farm 8
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SNALT BLOOM

AUSTRALIAN TURFGRASS

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- 17 **Baileys Fertilizers**
- 18 Simplot Proline
- 19 **Globe Australia**
- Hydrosmart 20
- 21 QTurf
- 22 Evergreen Turf (VIC)
- 23 Rain Bird Australia
- 24 **Nelson Irrigation**
- Scotts Professional 25
- 26 **Bayer Environmental** Science
- Toro Australia (Irrigation) 27
- 28 Toro Australia (Foley Grinders)
- 29 Legend Couch Grass

- 30 John Deere
- 31 John Deere Credit
- 32 Turf Culture
- PGG Wrightson Turf 33
- 34 Country Club
- 35 Redexim Charterhouse
- 36 Advanced Seed
- 37 Syngenta
- 38 Toro Australia (Commercial)
- 39 Dint
- 40 Jayline
- 41 Jacobsen
- 42 Pro-floor
- 43 TBC
- 44 New Holland

ADVANCED SEED Advanced Stand 36

Advanced Seed is a leading importer and provider of turfgrass seed and related products for both the commercial and retail markets throughout Australia. Our products are used by leading racecourses, golf courses, turf farms, local governments and sporting facilities throughout Australia. Our extensive range of both cool- and warm-season grasses allows us to provide the very best selection of products to turf managers.

Access to major seed producers and breeders from USA, Europe and NZ allows us to provide a product range at the cutting edge of turfgrass research. These suppliers include Seed Research of

BARMAC Stand 4



If you are looking to manage your turf in a more sustainable manner, Barmac can provide you with information regarding the latest developments in sustainable turf management programmes.

We will be discussing pesticide-free insect control with Nutri Gro Plus. We will also let you know how to clean up dams and waterways using biologicals and why it is important to use biological products to improve your soil with the Noculate range of products.

We will also feature our new range of kelp coated technology NPK fertilisers, Renov8 and Rejuvin8, along with products Oregon, responsible for high performance varieties such as SR4600, SR4420 ryegrass, SR8600 tall fescue and Tyee, 007 and Dominant X-Treme bentgrasses. They are also responsible for some of our warm-season grasses such as LaPrima, LaPrima XD, Veracruz and Yukon. Our other major supplier is DLF who have developed some leading turf type ryegrasses including All*Star 3, Regal 5, Essence, and fine fescue varieties Longfellow 2 and Cindy Lou.

Apart from highlighting our turfgrasses, we will be displaying information on Evergreen Turf Covers and Earthway spreaders. Visit us at Stand 36 where we will be happy to assist you with all of your turf enquiries. www.adseed.com.au

containing carbon, fulvic and humic acid in the new UMX range. The powerful TNT nutrition programme spreadsheet from the Andersons will also be on display. You are invited to use the programme and discover how you can apply greens grade nutrition sustainably and economically.

Please feel free to book a time with us or simply come up to the stand and see what is new in sustainable turf management. Paul Jackson, Josh Ammenhauser and Wayne Sear will be at the stand to discuss your technical requirements and assist you in building a more sustainable golf course maintenance programme. To book a time on the stand, please contact pjackson@ barmac.com.au.

AUSTRALIAN SEED & TURF FARM Stand 7

The Australian Seed & Turf Farm management collectively has over 100 years of experience in the turf industry. This has contributed to our position as one of the leading suppliers of instant turf to the commercial and domestic markets.

Our location at Carrum Downs also allows us to service clients promptly to suit their project timelines. Some major projects we have proudly have been involved with include St Kilda Football Club's new training venue at Seaford (turfed with Santa ana couch) and Royal Melbourne Golf Club where we supplied fine fescue (greens surrounds) and Santa ana (tees) for the upcoming Presidents Cup golf tournament.

New expansion plans at the farm will see an increase from 65 hectares to potentially 100ha. Larger areas of bentgrass turf and fine fescue will be grown on fumigated sandy loam and on USGA specified sand. Consignment growing is also an option for special variety requirements. Santa Ana couch, Tifdwarf, Kenda kikuyu (new, licensed male sterile variety) great for sports fields and Matilda premium soft leaf buffalo make up some of the other grasses we grow. We welcome all enquiries to www.seedandturf. com.au or George Sandic farm manager on 03 9772 7632. We guarantee service second to none.

DINT AUSTRALIA Stand 39

DINT Australia is proud and honoured to have been commissioned once again to manufacture the magnificent trophies that will be presented during this year's Australian Turfgrass Conference on the Gold Coast. The winners of the Distinguished Service Award, Claude Crockford Environmental Award, Excellence in Golf Course Management Award and Graduate of the Year Award, will

(CO DINT

all receive a magnificent 22ct gold-plated trophy, handmade by DINT, depicting the AGCSA logo. These trophies are expertly crafted by our foundry, J.A. Dinte P/L, which has been in business for 80 years.

It is this same experience, expertise and craftsmanship that goes into making the cast bronze tee plaques that so many of Australia's golf courses have displayed on their tees. In recent times there has been a resurgence in the demand for highest quality cast tee plaques. DINT is the leader in this area, providing unrivalled quality, design and finish in this 100 per cent Australian made product. On behalf of DINT, we wish all the nominees and candidates for awards, the best of luck. We trust also, that all conference attendees enjoy the week and we look forward to seeing you on Stand 39.

DRUMMUSTER/CHEMCLEAR Stand 3

Two prominent issues in the agriculture industry today are the safe disposal and recycling of both chemicals and chemical containers. The drumMUSTER and ChemClear programmes can be used to solve both problems. Established in late 1998, drumMUSTER collects and recycles pre-cleaned, eligible chemical containers and has over 750 collection sites around Australia. In its 13 year history, it has now disposed of well over 16 million containers. This fantastic service works in partnership with local shire councils to build and maintain collection areas at either council depots or local waste transfer stations.

Helping users get rid of their unwanted or out-of-date chemicals is the ChemClear programme. These chemicals are classified as either group one or group two products; the former is currently-registered product from participating manufacturers and is accepted free of charge, while group two involves materials that are unlabelled, unregistered or unknown, and includes a fee-per-litre for disposal. Waste holders should take an inventory of their unwanted chemicals and register them with the programme so that they are included in the next collection.

To find out more visit www.drummuster.com.au or www.chemclear.com. au. Call drumMUSTER on 1800 008 707 or ChemClear national hotline on 1800 008 182.

AUSTRALIAN

BAYER Stand 26

CONFERENCE



Bayer Environmental Science is a business operation of Bayer CropScience which specialises in the development and marketing of pest, weed and plant-disease control solutions for non-crop situations; this includes a balanced (and strong) turf management portfolio. Bayer's turf product offerings include fungicides (3Sixty5, Baycor, Bayfidan, Signature, Rovral GT and Dedicate), herbicides (Destiny, Ronstar and Spearhead) and insecticides (Merit, Initiator, SilvaShield, Ficam and Tempo).

Bayer's newly launched product in Australia is Tribute. Tribute is a unique sulphonylurea turf herbicide that contains the active ingredient foramsulfuron. The product selectively removes unwanted cool-season grasses from warm-season grasses. Tribute effectively controls crowsfoot and other perennial grasses such as wintergrass and ryegrass. Tribute is registered for use on tolerant warmseason grasses such as couchgrass.

Visit the Bayer stand (26) at the 27th Australian Turfgrass Conference Trade Exhibition for further details about Tribute. First orders of Tribute will receive a free high quality water/wind resistant vest, as well as the Bayer Turf ID Poster, until stocks last. Plus, registered conference delegates will be eligible to enter the Bayer 'Business Card' draw for a chance to win an Apple iPhone 4 with the new Bayer Turf ID app!

FLORATINE PRODUCTS GROUP Stand 13

Floratine Products Group is celebrating 20 years service to the turf industry. We design, manufacture and ship our products ourselves, which allows for complete quality control. The backbone of our range is our foliar applied liquid products. These are applied at extremely low water rates, ideally between 2.5-3.5 L/100m2, do not require watering in and will not burn turf – ever! This allows the turf manager more control on nutrient input, bypass of any soil tie-ups and being environmentally proactive by utilising less water than traditional application methods.

Floratine supports university research and understands that the information that these studies provide are an invaluable tool and educational resource for all turf managers. Please visit us at www.floratine. com to view many of the research results that have been completed to date.

Along with our soil applied and specialty

product range, we are confident that our sales team can recommend an individual product or 'Turf Action Plan' to improve your facility. Floratine does not aim to produce the cheapest products on the market – just the best. Come visit our Australian distributors at Stand 13 to find out more about our full product range and how it can assist your specific needs.

FOLEY UNITED Stand 28



If you are looking for superior grinding equipment, Foley United Grinders are available exclusively in Australia through Toro Australia. The world leader in reel grinding equipment since 1934, Foley offers innovation, ease of use and technical proficiency with spin and relief grinding reels, providing the highest quality grind.

Featuring an extensive range of rotary, reel, spin/relief and bedknife grinders, the Foley United range offers technical

DUPONT Stand 14

Long before 'green' became the new buzzword, DuPont was focusing research on developing high-performing products with improved safety and environmental attributes. This R&D effort has started to deliver new products. DuPont Acelepryn insecticide provides turf managers with longlasting control of the major turf-damaging insect species. As an unscheduled poison it had few application restrictions and it has extremely low toxicity to non-target animals such as birds, fish and bees.

Many Australian golf course superintendents now include DuPont Acelepryn as standard within their integrated

EVERGREEN TURF



Evergreen Turf has been providing products and services to the golf course industry for over 20 years now. With our highly qualified and experienced staff, such as David Nickson and Tim Bayard, our aim is always to provide solutions for our valued clients.

Evergreen Turf offers a wide variety of specialist services to the golf industry which include consultancy, line planting and top making. We supply premium turf varieties such as Grand Prix and Conquest couchgrass which are widely accepted as market leaders. superiority and performance combined with easy maintenance and use. Elevate your performance, increase cut quality and production with the leading name in grinding equipment. To discover more about the Foley ranges talk to your local golf specialist at the Toro Australia stand and see the difference these machines can make to your golf course. For more information please contact Toro Australia on 1800 356 672 or visit www. toro.com.au

GEOFABRICS Stand 11

GEOFABRICS

Geofabrics – Golf has made a name for manufacturing and distributing high quality golf specific products. Our BunkerMat product has become the benchmark when it comes to bunker liners. BunkerMat is recognised around the world for its high UV-stabilised fibres, tensile strength and superior sandholding capabilities. Geofabrics Megaflo flat panel drainage system is manufactured from

pest management programmes and are extremely happy with the performance and benefits. In step with our customers, we are 'walking the walk' in making meaningful differences that our generation and future generations will experience firsthand.

In recognition of this innovation and excellence, DuPont Acelepryn received the prestigious 'Best Innovation in Non-Crop' at the 2009 AGROW Awards (agrochemical industry awards). DuPont is honored by the recognition of our work to develop better products for the turf industry and invite you to the DuPont stand (14) to learn more about how to get optimal performance from DuPont Acelepryn as part of your insect control programmes.

Evergreen Turf has the capability to offer a full turnkey service to golf clubs which can include profile design, drainage, irrigation and turf installation. Evergreen Turf is also proud to be the sole Australian agent for the Kesmac Root and Pest Controller, which is an effective and innovative way to control root-residing pests. This unit combines pressurised streams to both the surface and down into the subsurface root layer.

Combined with supplying StaLok Pathways for stabilising granitic gravel paths and our range of Kesmac fairway mowers, you can see that "Evergreen is more than just turf". Come visit Stand 22 at the trade show or visit our website www. evergreen.com.au

GLOBE AUSTRALIA Stand 19



Globe Australia brings to the Australian turf manager leading products and technologies in the pursuit of providing the best possible standards of excellence in turf surfaces. Several of these products have been researched and developed in other countries but many are also now manufactured locally. Globe's criterion is to offer the best products available for every situation or solution. These products are supported by technical expertise and your local Globe partner is there to assist you and work every step of the way to achieve best possible outcomes and improved results.

Globe has recently extended its specialist turf product range to include quality equipment solutions with a range of specific use machinery. With this range we have also searched the world for the best available turf equipment which include suppliers from Europe and the United States. Our equipment solutions providers would be pleased to arrange a catalogue or an on-site demonstration to determine suitability to your specific needs and tasks. The Globe team looks forward to welcoming you to this year's conference in Adelaide. Globe – A world of difference.

recycled plastic out of our Albury plant. Megaflo is now becoming an integral part of golf course design specifications around the world. Architects and designers are seeing the ease and the speed or a trenchless drainage system that is approved by authority bodies like the USGA.

Other products Geofabrics offers to the golfing community include a range of erosion control products such as our Jute matting which is a bio-degradable erosion control product. Grassroots is a high density polyethylene mesh that will allow grass to grow between its profile thus reducing wear. Grassprotecta is a durable mesh that provides exceptional turf protection. We are proud to be an Australian manufacturer providing Australian jobs.

HUNTER INDUSTRIES **Hunter***

Stand 6

Hunter Industries is a worldwide manufacturer of irrigation systems for residential, commercial, municipal, sports field and golf applications, offering a complete line of rotors, sprays, valves, controllers, central control and sensors. Hunter has developed

JACOBSEN

Jacobsen is a Textron Inc company with a long heritage manufacturing fine turf maintenance equipment for the golf course, municipal and professional lawn care markets that include world renowned brands such as Jacobsen (golf course maintenance equipment) and Ransomes (municipal turf maintenance equipment).

Jacobsen and Ransomes products are well respected and have been used on championship golf courses and sports stadia across the globe, preparing the playing surfaces at numerous major sporting events including the US Open, The Open Championship, Olympic Games and FIFA World Cup.

JOHN DEERE AND JOHN DEERE CREDIT Stands 30 and 31



Ever seen electricity leak all over a green? Neither have we. The run-all-day 2500E E-Cut Hybrid greens mower by John Deere is all about advanced technology and common sense. The 2500E is a hybrid mower that puts power in its proper place. With the choice of a gas or diesel engine, the 2500E powers the reels using a belt-driven alternator.

By removing all of the hydraulics from the cutting units, 102 potential leak points have been eliminated. Since 90 per cent of all hydraulic leaks occur in the reel circuit, the possibility of a leak is extremely remote.

more than 100 innovative products that meet the needs of professional installers worldwide.

The ACC Controller is Hunter's most powerful controller, for command of large and sophisticated sites. ACC brings new levels of convenience and modularity to the most advanced controller the company has ever created. Its adaptable modular design not only allows configuration to the number of stations you desire, it also makes it easy to upgrade to true two-way communication with a Hunter central control system. Customise your controller in the field with the features you need – plug-in modules add stations and add central control communication capability.

HYDROSMART Stand 20



In two recent biological and laboratory trials Hydrosmart has shown stunning growth improvement outcomes using highly saline, iron, calcium, mineral-rich water. Hydrosmart In January 2011 the management of the Asia Pacific territory was moved from Jacobsen in Charlotte, USA to the UK headquarters of Ransomes Jacobsen Ltd. Former sales director Alan Prickett was appointed managing director Asia Pacific and will be operational from Singapore, providing support for the company's activities in the region. In Australia, the Jacobsen product range is distributed by McIntosh & Son (Redcliffe, WA), Godings (Whittlesea, VIC), ProTurf Machinery (Moorebank, NSW) and K C Farm Equipment (Yatala, QLD).

Textron Inc. is a multi-industry company that leverages its global network of aircraft, defense, industrial and finance businesses to provide customers with innovative solutions and services.

Receiving power through a 48-volt alternator, the reels get consistent power from the moment of engagement. This in turn leads to a consistent cut all day long and when lower sound levels and less fuel consumption are factored in, the 2500E makes even more sense.

Hybrid technology isn't just for greens either, it's also for fairways. John Deere takes the same technological advancements from the 2500E E-Cut Hybrid and applies them to fairway mowing. The 7500 and 8500 E-Cut Hybrid fairway mowers offer the same features as the popular PrecisionCut fairway mowers, but now with electric reel drive. John Deere Golf – leaders in Hybrid technology.

remains as a truly sustainable water treatment technology simply and effectively solving most of the water and wastewater problems being faced today.

Australian made and owned, Hydrosmart continues to solve turf and irrigation issues for hundreds of turf users, councils and golf courses both here and overseas. and is now in its second decade of award-winning applications. It's unique set of frequencies produce sustainable solutions to many water issues ranging from salinity, scale/hardness mineral build-up and problems, iron removal and prevention in pipes, sprays and drippers through to algae and blue green algae control while eliminating the need for chemicals and consumables.

PGG WRIGHTSON TURF



PGG Wrightson Turf are breeders, producers and suppliers of high quality turf seed for the Australasian turf industry. We are committed to providing the turf manager with the very best option for their own specific application, whether it is golf, sportsfields or amenity landscapes. As well as providing

QTURF Stand 21

CONFERENCE



QTurf is a Brisbane-based company offering national service as Australia's sole importer and distributor of the Wiedenmann range of products. Wiedenmann, German engineered and proven effective in Australian conditions, comprises a range of equipment vital to the structure and maintenance of quality greens and first class fairways. Australian conditions present challenges to the sporting industry, where quality turf is demanded without compromising environmental consciousness.

Wiedenmann has revolutionised the methods and set new benchmarks in speed,

REDEXIM CHARTERHOUSE

Redexim Charterhouse's shared and total understanding of our global clients' requirements has led to continued development across our range of products to offer the ultimate results with machines for both natural and synthetic turf renovation and maintenance practices.

Recent introduction of new machines include the pedestrian Verti Carrier allowing the fitment of the 1.3m Verti Drain, 1.2m Speed Seed, 1.3m scarifier or topdressing machine – the complete pedestrian machine! Verti Drain Concorde models with 1.6m and 2.08m operating widths and penetration depths to 225mm for both solid and hollow tines help increase operating

Hydrosmart is unique in that it is a longterm solution with no ongoing operational costs. The technology is sized not on number of litres treated but by pipe size applied onto so there is no ongoing cost calculation required due to its once off purchase nature. Users include Bunbury, Manly, Cromer, Tam O'Shanter, Ballarat and Jabiru golf courses; World Of Golf Botswana; Adelaide Oval; Walkerville, Kimba, Rockhampton, Ararat and Geraldton councils; Dubai Equestrian Center and more. a thorough range of cool-season grasses such as fine-leaf ryegrass, fine fescues and bentgrasses, PGG Wrightson Turf has now added a comprehensive range of seeded warm-season and tropical grasses such as bermudagrass, seashore paspalum, zoyziagrass and centipede grass. Phone 1800 Duraturf or visit www.pggwrightsonturf. com.au

productivity and quality, when it comes to aeration. Aeration strikes to the root of the issue, being imperative to successful growth and maintenance of a lush cover of turf in the harsh Australian climate. Decompacting the soil and allowing the roots to penetrate deeper results in more effective use of water and fertiliser. Improved air flow within the soil helps to eliminate thatch and enhances the strength of the grass.

Every function of turf maintenance is covered by the range of aerators, scarifiers, drag brushes, leaf and debris blowers, spike rollers and overseeders. Visit QTurf at Stand 21 and talk about our solutions for turf renovations.

speed and productivity. The new Turf Tidy 3000 is designed for heavier duty operation with increased hopper capacity. There are also several new models for the cleaning and maintenance for all synthetic turf surfaces.

Over 70 machines across the range for both natural and synthetic applications allow Redexim Charterhouse to continue offering new multifunctional machines while continuing to build the reputation for quality, reliability, ease of use and high safety standards. These goals remain paramount in our quest to continue serving the respective turf industries to achieve the ultimate results. For more information regarding new and current machines contact our representatives at Stand 35.

JAYLINE Stand 40

ayline (Aust) Pty Ltd

Jayline (Aust) Pty Ltd is Australasia's largest provider of turf protection and stabilisation products to protect your precious turf – golf car pathways, pedestrian walkways, emergency access, car park overflow, media. Using turf protection products will ensure there is no rutting or soil compression from high pedestrian or enhanced load bearing traffic. Using our range of products provides total turf protection.

LEGEND COUCH GRASS Stand 29

Legend couch grass has continually proven itself as a top performer around Australia and New Zealand from elite golf courses and stadiums to parklands and home lawns. Proven performance qualities include excellent recuperative ability after wear, rapid establishment, good winter colour, excellent spring green up, low thatch accumulation and excellent recovery after drought stress.

Legend production paddocks undergo certification and Legend has been DNA tested by the University of Queensland. Legend is Australasia's premier couch. Please come by Stand 29 for details of your licensed local producer. Legend – the King of Couch Grass.

NEW HOLLAND Stand 44



New Holland has grown from a small humble operation in New Holland, Pennsylvania to become one of the world's most respected brands in the agricultural machinery business. New Holland doesn't just build tractors for agricultural applications. Its reputation is built on the success of our customers which include government, commercial and groundscare professionals.

New Holland manufacture tractors from the small compact range, starting at 20hp, through to large horsepower articulated models, G6000 outfront mowers and Rustler utility vehicles. Renowned for its innovative nature and demand for excellence, New Holland provides a full complement of products to suit a variety of applications and a staff and dealer network to support each of these in the marketplace. We are a dynamic and innovative brand that continues to evolve and we believe in providing firstclass advice and service across our entire product offering.

New Holland tractors can be found in golf, turf and groundscare applications across Australia. Within our range of tractors, New Holland has award winning and industry leading features such as the new generation CVT Easydrive transmission and Supersteer front axles. For more information on New Holland visit www.newholland.com.

NUTURF Stand 15



Nuturf Australia P/L is the leading distributor of products and agronomic services to the professional turf industry throughout Australia. Our national network of sales specialists provides a comprehensive range of products and services to our valued customer base. Our mission is to deliver to the Australian turf and amenity horticulture industry products, services and agronomic solutions above and beyond the expectations of our valued clients. Our commitment is to our customers, our staff, the environment and the community in which we operate.

Nuturf, Australia's link to the future in turf management and amenity horticultural solutions, is proud to have a stand at this year's AGCSA conference. Come and see us at Stand 15. To find out more, please feel welcome to visit us and talk to one of our many sales and technical specialists who will be present. Visit www.nuturf.com.au

SCOTTS PROFESSIONAL Scotts Stand 25

Scotts Professional has been servicing the industry since 1868 and active in Australia and New Zealand since 1993. Scotts is a recognised leader in the industry, producing and supplying specialty fertilisers – Sierrablen,

RAIN BIRD AUSTRALIA Stand 23

Now more than ever performance counts with your irrigation system. Come and see the exciting new Integrated Control System and the new Eagle Series rotors.

Complete confidence in your irrigation system gives you as the turf manager peace of mind. Rain Bird understands your need to get the most from your irrigation system. Our industry leadership and sole passion is irrigation and we continue our commitment to innovative irrigation solutions every day. Rain Bird Corporation - Golf Division manufactures a wide range of irrigation products for golf courses - pump stations, Rain Bird EAGLE Gear Drive Rotors, field controllers, map-based central irrigation systems, decoders, swing joints, flow meters, filtration systems and valve and irrigation accessories.

Rain Bird Central Control and Pump Station components are serviced and supported by a comprehensive Global Service Plan (GSP). We invented irrigation technology and continue innovating every day. We are the world leader in irrigation expertise with a proven reputation for high quality products and services.

Rain Bird is proud to be a principal sponsor of this year's conference. For further information regarding Rain Bird golf course irrigation system expertise, visit us at Stand 15 or contact Rain Bird Australia Pty Ltd on 1800 424 044 or at www.rainbird.com

SIMPLOT PROLINE

Simplot Proline once again welcomes the opportunity to be involved in the 27th Australian Turfgrass Conference in Adelaide. Our BEST fertiliser range, as well as our Signature and Liquamaxx liquids, including the hugely popular Greenmaxx, continue to put Simplot at the forefront of turf nutrition. The Greenmaxx Club continues to grow and we are extremely proud of the many sports surfaces around Australia and overseas that have used and benefitted from this unique product.

Simplot

Syngenta and Nufarm continue to support Simplot Proline with many fine plant protection products to the turf

Sierraform GT and Greenmaster Liquid; pest control products – MaxGuard; combination products – Dicot II and Premax; wetting agents in the Hydraflo® range plus a new range of turf seeds through the acquisition of The Turf Seeds Company – USA.

Scotts' R&D division is located in Europe and we look forward to introducing many new technologies to the industry in the years ahead. The latest addition to our turf product range is Sierrablen Plus and Fairwaymaster Mini, available in 2-3 and 4-5 month longevities. New generation Poly S relies on a dual coated urea granule. This regulates the release of nutrients and significantly reduces the risk of scorching with no spotting.

All of the Sierrablen and Fairwaymaster products are produced as a mini prill. This provides 7500 granules per sq/m, six times more than the Sierrablen and SportsMaster

SYNGENTA Stand 37 Syngenta

In Australia and around the world Syngenta provides a range of innovative turf protection products, and supports them with the highest levels of technical service and support.

Syngenta has just released Barricade, a new pre-emergent turf herbicide for the control of Poa annua, crab grass, summer grass and crowsfoot grass. Barricade is a low odour, non-staining liquid formulation containing the active ingredient prodiamine. Barricade has been available in the USA for a number of years and is considered the standard on golf courses, sports fields and landscape areas exhibiting excellent results every time.

One of the unique properties of Barricade is that it forms a band within the

industry with both these companies using the latest technologies in their product development, an alliance that is an integral part of our success. Simplot Proline are also Toro Irrigation agents and are proud to announce that we are now selling Toro line markers and turf paints.

At last year's conference, Cameron Wickes from Bright Country Golf Club was the lucky winner of our trip to the US to attend the Golf Industry Show as well as visit numerous golf courses and Simplot's fertiliser plant in California. Next year's show moves onto Las Vegas so speak to one of our territory managers at the conference stand on how to enter this fantastic competition.

standard range. The new Sierrablen and Fairwaymaster range provides a homogenous prill which guarantees extended longevity, better distribution when spreading and disperses fast into the turf sward, particularly at low mowing heights.

TRIANGLE WATERQUIP Stand 5

Triangle Waterquip is an Australian owned company that has been established for over 25 years as a major distributor of irrigation equipment to the golf course, turf and agricultural irrigation markets. We have been and continue to be a major supplier of automatic screen filtration equipment to the golf course market.

Filtomat fully automatic self-cleaning screen filters have developed a reputation for reliability and dependability and have

top 10-20mm of the profile and combined with an extremely low leaching potential it provides a long-lasting herbicidal barrier. Barricade will not move off target after application and incorporation with either irrigation or rain.

Barricade provides superior weed control for up to six months, with a flexible application window. This is enhanced with the flexibility around the need to water in which can be delayed for up to seven days after application. Barricade is classified as a nonscheduled product and as such re-entry periods do not apply.



TORO IRRIGATION Stand 27

CONFERENCE



TORO

Toro strives to build innovative products that provide solutions to help you manage your water, energy and labour resources efficiently, while still delivering the best playing conditions. As issues about water usage and availability continue to impact the golf industry, many course operators are seeking practical answers.

We've taken the initiative to develop new ways for golf courses to more efficiently use water including flow management and industry-leading precision nozzles. We work to support new course construction, full system renovations as well as system component upgrades that can be implemented immediately or over time. Toro

TORO COMMERCIAL Stand 38



Displaying a combination of innovation, customer service and entrepreneurship the Australian subsidiary of the worldwide Toro Company has fast become the leading turf equipment supplier and leader in turf management.

Through a series of golf specialists and dedicated dealers, Toro Australia Commercial Equipment Business services a wide variety of end users including golf course superintendents and managers, local councils and sports and playing field managers.

proved even more durable as many golf courses now rely on treated effluent water for irrigation. Additionally we will be exhibiting a comprehensive range of electric fertigation injection pumps which can be installed to operate fully automatic with a controller and sensors or as a manually controlled system. Should your requirements be as simple as applying wetting agent on an irregular basis or injection acid for pH correction with every irrigation, we will have equipment on display to suit your application. Other products on display will include water meters, hydraulic control valves, impact sprinklers and manual filtration equipment.

Our head office is located in Melbourne with branch offices in Perth, Sydney and Brisbane. Key contacts are Wally Menke (managing director) and Gary Horton (national marketing manager). Visit www. trianglewaterquip.com.au

TURFCRAFT INTERNATIONAL Stand 16

AUSTRALIAN TORPOBASS

The TurfCraft team of Alastair Dowie and Ed

is able to provide solutions for you to deliver the best playing conditions while saving your budget and the environment.

Beyond innovation, quality cannot be overstressed. Our top priority is providing you with the best irrigation products – and backing them with the most experienced team of service professionals in the business.

Our comprehensive service offerings range from training and support to system optimization – and everything in between. Our goal is to partner with you to understand your challenges and provide both the product and service solutions you need to maximise your available resources while also providing outstanding playing conditions.

Toro Australia continues to provide unparalleled service and new technical advances across all of its ever-expanding fleet. Each Toro model is designed to make the job safer, easier, more economical and kinder to the environment. Built on a legacy of excellence and innovation, Toro Australia offers a range of commercial turf management equipment, quality used machinery and a reputation for service and support like no other. Discover the Toro difference and be a part of the finest turf equipment story in Australia. For more information please contact Toro Australia on 1800 356 672 or visit www.toro.com.au

Kryskow will be supporting the turf industry with a stand at the 27th Australian Turfgrass Conference and Trade Exhibition in Adelaide. The pair has been involved with TurfCraft magazine for a combined total of more than 25 years and have forged strong relationships with readers, advertisers and industry organisations and associations. TurfCraft will be at Stand 16 and we welcome all delegates to call in and browse the back issues of the magazines as well as ask questions or provide feedback on the magazine or the industry in general.

Delegates will have the chance to try out the latest CD containing PDF format pages of TurfCraft going back to 2006. Current and new subscribers will be able to take home a CD if they renew or extend their existing subscription while new subscribers will receive a CD with their pack. This CD provides invaluable information for people involved in the turf industry from the manager of facilities to apprentice level. The CD is searchable making it easy to track particular story subjects, places or people.

TRU-TURF Stand 10



After 60 years of innovation, the team at Tru-Turf can finally say it has designed and built the most advanced greens turf roller to deliver the consistent, smooth putting surfaces that golfers demand on today's golf courses. Recent tests by the STRI confirm Tru-Turf's patented roller technology gives you a healthy, smooth, true, consistent ball speed on every green. With Tru-Turf you get a better result than with any other roller because of the patented off-set rollers and contour following heads.

It's no wonder then that the most prestigious tournaments and courses, including PGA Tour, Nationwide and Seniors events, the US Open, British Open and St Andrews, choose Tru-Turf greens rollers as their roller of choice. Tru-Turf's patented light-weight rollers are exported to England, Scotland, Ireland, Sweden, Spain, Germany, Austria, USA, Canada and throughout Asia.

If that's not reason enough, according to a university study Tru-Turf rollers will save you money in three crucial areas – by reducing labour costs, reducing the need for pesticides and slashing water costs.

To find out what a Tru-Turf roller can do for you and your facility, talk to the guys at Tru-Turf or visit www.truturf.com.

TURF CULTURE Stand 32



We develop products for a wide range of uses that will help the turf manager establish, maintain and manicure his turf surface to the highest quality. Turf Culture is the leading independent developer of plant protection products and technical support to the professional turf industry throughout Australia and New Zealand. Our national network of distributors and agents provide comprehensive geographical coverage for all of our products and services to our valued end-user clients.

The only focus of Turf Culture is turf. We do not have products for the agricultural industry. The core segments of the turf industry on which our distributors and agents focus include golf courses, bowling greens, racetracks, councils and sportsfields, spray contractors, turf farms and schools.

We are an independent Australian owned company and where possible we manufacture our products in Australia, which is a rare practice in the chemical industry. Our products generate jobs, security and strength to the Australian workforce and economy. Most of our competitors do not share the same links to Australia in terms of ownership and manufacturing. All of our products come with a formulation guarantee which ensures that the turf manager can be extremely confident he is applying a quality product.

YAMAHA MOTORS Stands 1&2

🔊 YAMAHA

Ever since Torakusu Yamaha built his first organ in 1887, the name Yamaha has stood

for innovation and ingenuity. But what really gave the Yamaha name a boost of power was the creation of Yamaha Motors in 1955. From this beginning came some of the world's most celebrated motorcycles, water vehicles, racing engines, ATVs and golf cars.

We just want to be the best at everything we do: designing products, making products and servicing the customers who buy our products. That's why Yamaha products are recognised the world over for superior quality in design, technology, craftsmanship and customer-oriented services. These products and services under the brand name Yamaha are highly regarded by a large number of professionals, institutions, business people and consumers as the best.

Our corporate philosophies are embedded in our customer-oriented management and operations; providing excellence in our products and services; continuous efforts to expand our existing markets and create new markets; enhancement of research and development on a long range perspective and commitment to care for end users through providing superior after sale service. **Disclaimer: All stand numbers were correct at the time of this edition going to print.**

PRINCIPAL SPONSORS

TORO



SUPPORTING ORGANISATIONS





AUSTRALIAN



In Volume 13.2, ATM extensively covered the damaging floods to hit large areas of Queensland,

in particular those turf facilities in the state capital Brisbane. In this instalment of AGCSATech Update, AGCSA general manager John Neylan visits some of the regional courses which were also impacted to see how they fared.



hroughout April, the AGCSA has been working in conjunction with Golf Queensland to visit those golf courses affected by the floods which hit the state from late December through to mid-January. AGCSA board member Pat Pauli (Horton Park Golf Club, Sunshine Coast) was also part of the visitations and his presence was very much appreciated by all those we met.

The work involved two separate trips, the first to Karana Downs Golf Club, Wolston Park Golf Club (which coincided with the April GCSAQ day), Ipswich Golf Club, City Golf Club (Toowoomba), Dalby Golf Club and Chinchilla Golf Club. The following week we visited Rockhampton and Emerald. The following is a snapshot of how each of these vital community facilities have fared.

KARANA DOWNS GC

Karana Downs Golf Club is privately owned and resides right on the banks of the Brisbane River. As well as inundating the course and the machinery shed, the January floods caused severe damage to the club's signature hole, the 15th, with three landslides causing large parts of the fairway, rough and green to be lost into the river.

Most of the 15th fairway is now gone, while as the photo above shows just 75 per cent of the green remains. Unfortunately there is little or no ability to reconstruct the fairway as there are government restrictions preventing the alteration of the river bank, even if there was something there previously. A total of 13 greens suffered inundation and due to the lack of water after the floods, silt removal was very difficult and is still posing management problems.

IPSWICH GC

The Ipswich Golf Club has been undergoing a major reconstruction due to the development of a section of the course as housing allotments. The golf course has been converted to seashore paspalum (variety Velvetene) and is the first golf club of this standard to convert all its playing surfaces to this turfgrass species in Australia. At the time of the floods, most of the new course works were completed and the turf areas were well established and presenting very good playing surfaces.

The floods resulted in turf going under water for a total of two weeks over a six week period. There were silt deposits on greens and fairways as well as gravel and large stones deposited on some fairways. The floods destroyed the irrigation pumps and the golf course was without water for upwards of four weeks. Even at the time of the inspection just one pump was in operation which was severely limiting the ability to irrigate the golf course effectively.

Five greens were inundated for a total of two weeks and consequently there was extensive turf die-back, though there has been good recovery. There was extensive damage to bunkers with the worst affected losing all the sand, geofabric liner, drainage pipe and drainage gravel. Ipswich is a big golf course for the staff of four, including superintendent Peter Currey, and the condition is an absolute credit to all involved.

CITY GC, TOOWOOMBA

City Golf Club (superintendent John Halter) suffered from the flash flooding experienced in Toowoomba. While there was generally very little turf damage, the loss to two footbridges which traverses a creek took irrigation infrastructure with them. The course bounced back well and less than six weeks later successfully hosted the 2011 Queensland PGA Championships.

DALBY GC

Dalby is out in the cotton country of the Darling Downs and the Dalby Golf Course is a great little country track maintained by one qualified greenkeeper, course superintendent David King, with some part-time help. According to King, the course has copped eight flood events since December, with the last two just about "finishing him off".

The first was a relatively "clean water" flood and with follow up rain most of the silt deposits were removed. The second flood, however, was what David calls a "dirty flood" with heavy silt deposits left across the golf course. Following the second flood the weather was hot and the combination of the baking silt and high temperatures caused extensive grass loss on the fairways.

There has been a moderate to good level of recovery of the kikuyu and the couch, though the course will still require some overplanting to assist in recovery. Weed infestation has also become a major problem, especially where there has been a loss of turf cover.

CHINCHILLA GC

Chinchilla Golf Club is a beautifully presented ninehole facility principally run by volunteers and a parttime greenkeeper. The combination of immaculate fairways and the black trunks of the *Eucalypt* sp. provides a strong contrast. Chinchilla, as with Dalby,



looks like a great golf course where you can have a lot of fun.

The golf course experienced two floods and the course was under water for a period of a week on both occasions. Seven greens were inundated with severe silt deposits on greens and fairways during the second flood. All inundated areas suffered significant turf die-back, however, the recovery has been very good.

The fairways had varying degrees of silt deposited on them and this resulted in turf die-

Opposite page: Karana Downs Golf Club, about 11km northeast of Ipswich, suffered severe inundation during the January floods. Large sections of the course's signature hole, the 15th, was washed away into the Brisbane River

Above: Aerial photos of Karana Downs' 15th hole, before (top), during (middle) and after (bottom) the January floods. Most of the fairway was washed away along with 25 per cent of the green



Left: Like many other flood affected courses, Dalby Golf Club has suffered extensive loss of fairway turf as a result of silt deposits and high temperatures



A view up the new estuary channel from the 8th green at Manly Golf Club towards the 3rd green and 4th in the distance. The club is currently undergoing a major course reconstruction



The new boardwalk to the 8th tees at Manly

More than 200mm of rain over a couple of days in March saw Manly Golf Club inundated The reconstruction of a golf course is a considerable undertaking and in this day and age of increased competition for members and green fee players, many golf clubs are looking to find that extra edge by providing a better product. Two of the larger scale projects on the go in recent times have been the redevelopment of Manly Golf Club in Sydney and the total reconstruction of the Palms course at Sanctuary Cove Golf & Country Club on the Gold Coast.

Manly has been undergoing a significant revamp and I was pleased to be able to have a tour of the new work with course superintendent Michael Bradbery. There was a huge amount of planning and investigation work undertaken even before the first sod was turned in order to comply with a raft of regulations. Being in a flood plain and close to significant waterways, understandably there are many important environmental factors to consider. Potential acid sulphate soils have also added an extra dimension to the works and particular attention has been required to their management.

Golf course architects Thomson and Perrett have created a golf course that has a links style flow



to it on a site that is very flat and one of the many new features is the massive double green – the 10th and 17th – which covers almost 1200m². Ten new holes are due to open this May with the final stage of the project concentrating on the reconstruction of holes 12-18 plus a specially engineered stormwater harvesting pond. This work is due to get underway shortly with a projected finish around Christmas, with hopes that the full course will be open for members next autumn.

The past summer and start to autumn has certainly been a challenging one at Manly and as well as all the reconstruction work Michael has had to nurse his old *Poa annua* greens through some difficult conditions. The course also suffered extensive flooding after more than 200mm fell in March. Despite these challenges, Michael and his staff have been hard at it during the construction and grow-in and the completed works to date are of the highest quality and a credit to all involved.

On the Gold Coast, Sanctuary Cove's Palms course has been under reconstruction for the past two years as part of a major redevelopment under the auspices of golf course architect Ross Watson. The new-look course is certainly unique to most golf courses in the south east of Queensland. It has been designed with rough edge bunkers utilising Plateau couch and good use made of vegetation that frame the holes and the greens in particular.

The fairways are Wintergreen couchgrass and greens TifEagle and the condition and quality of the turf when I was fortunate enough to visit was excellent, especially considering the relatively young age of the turf. (See course superintendent Robin Doodson's article pgs 28-32 for a full account of the reconstruction work - Ed) - John Neylan back. Overall the recovery has been excellent with a strong turf cover consisting predominantly of couchgrass with some blue couch. As a result of the flooding there has been an increase in the weed population.

CAPRICORN CC

Capricorn Country Club is a 15-hole golf course with 10 holes affected by the floods. The course is maintained by one full-time greenkeeper and volunteer labour. A large proportion of the golf course was under water for four weeks (one green was under for six weeks) resulting in extensive turf loss across all inundated greens and fairways. All greens have recovered exceptionally well. Many of the course's 30 bunkers were also severely damaged from a combination of flooding and high rainfall.

The fairways suffered considerable grass loss, however, this has been to some benefit. The floods removed most of the blue couch and carpetgrass and this has allowed the green couch to become the predominant species. The floods have introduced other weed species, however, with Alexandergrass being the most prominent.

ROCKHAMPTON GC

Rockhampton Golf Club is a beautiful 18-hole facility that takes in part of the old botanical gardens with the final holes playing along the edge of the Murray Lagoon. During the floods there were three greens and seven fairways flooded for a period of up to four weeks.

The soils on the flooded section of the course are heavy clays and have stayed wet following the floods and the regular rainfall events thereafter. There was extensive turf die-back on the flooded fairways, however, this has been confined mainly to the blue couch and carpetgrass which has allowed the green couch to thrive. As with all affected golf courses, the floods have introduced a variety of weeds and there is an ongoing programme of weed control.

EMERALD GC

About 270 kilometres west of the city of Rockhampton is Emerald. Emerald is a service town for a large number of industries in the area which include coal mining, cotton, cattle and grain growing.

Emerald Golf Club is an extraordinary 18-hole facility that is maintained by one qualified greenkeeper and volunteers. The golf course runs parallel to the Nogoa River, a tributary of the Fitzroy River, and is beautifully treed.

The golf course suffered severe flooding in 2008, with the 2010-11 floods inundating most of the golf course again with the odd section staying dry. The most recent flood reached 16.05 metres which was 0.7m greater than the 2008 flood. The golf course has generally been wet with rare dry periods over the past two and half years.



The greens were under water for up to two weeks and once the greens emerged they were two weeks without water and consequently suffered heat stress due to a lack of irrigation. The 5th green was severely eroded with half of the right hand side of the green needing to be completely reconstructed.

The flood caused severe deterioration of the turf cover on the fairways with the loss of blue couch and carpetgrass. The result has been that the green couch has become the dominant species and is now thriving and forming a very good quality playing surface.

OBSERVATIONS

Having now seen the impacts of the floods at a number of golf courses in Brisbane, the Darling Downs and Rockhampton, it has been interesting to note some common trends and challenges following inundation. Some of these are:



Emerald Golf Club's greens were under water for up to two weeks and once they emerged were a further two weeks without irrigation and consequently suffered heat stress

At Ipswich Golf Club, the seashore paspalum variety Velvetene has shown strong resilience and recovery despite suffering severe inundation



Some of the typical damage to bunkers at Ipswich Golf Club

 Couchgrass is an incredibly resilient grass and has recovered exceptionally well from extended periods being under water and covered in silt;

- In the case of Ipswich Golf Club, the seashore paspalum variety Velvetene has shown strong resilience and recovery after suffering severe damage;
- Layers of silt are going to cause some on-going problems with water infiltration in greens and fairways;
- Blue couch and carpetgrass have been virtually eliminated due to the flooding. This has allowed the green couch to become the dominant species;
- Weed infestation is going to be a major challenge especially where turf loss has occurred;
- Disease problems appear to be a legacy of the weakened turf and the wet conditions;
- Damage to the root systems is already apparent and ERI fungi has been identified in some situations; and
- The silt layers on fairways sets hard when dry and becomes sticky when wet. This is compromising turf recovery and water infiltration.

The floods have proven to be an incredible challenge to all the golf courses affected and the staff involved. For those golf courses that have experienced multiple floods the effects have been



very demoralising and have obviously caused a major strain on resources.

For all of the clubs, and particularly the small country clubs that rely on green fee players, there has been a dramatic effect on revenue and it is going to take some time to recover. It is not only the loss of revenue which hits hard, but also the cost of repairing the golf course. Fortunately, many of the golf courses have received government funding which has been made available to sporting clubs to assist in their recovery.

Above all, however, witnessing the resilience of the staff and the volunteers has been extraordinary. These sorts of events can bring out the best and worst in people, but having been fortunate to visit many of those worst affected courses and talk with staff, the determination they have had to get their courses back up to a playable level can only be commended.

CHEMCLEAR TO ASSIST QUEENSLAND FLOOD CLEAN-UP

ChemClear has announced it will be conducting a collection in flood affected areas of Queensland in late June-early July. Chemical users across the state will receive an opportunity to dispose of their unwanted, inherited or unknown chemicals through the collection which will be the first in the Sunshine State since 2009.

ChemClear works with local shire councils to organise the collection and safe disposal of agricultural and veterinary chemicals, which are classified into either group one or group two categories. Residents in certain flood-affected areas of Queensland will benefit from the programme after the Department of Employment, Economic Development and Innovation (DEEDI) partnered ChemClear to support the collection and disposal of chemicals from 37 local government areas severely impacted by the 2011 natural disasters.

Anyone who has found, inherited or is storing eligible chemicals as a result of flood waters, and resides in one of the allocated areas can register to have them collected and disposed of free of charge under this initiative.

"We already have over 32.5 tonnes registered for collection," says ChemClear national program manager Lisa Nixon. "We are certainly hopeful we can retain this level of registrations moving through the processing and quotation stage through to the collection stage of our programme. Registrations drop off from time to time due to the cost of disposal of unknown chemicals, so if you have these products please register them and provide as much information as possible, especially in regards to what you think they may be. This ensures we can accurately assess the cost for disposal."

To register for collection, contact ChemClear on 1800 008 182 or visit www.chemclear.com.au.

AGCSA Board member Pat Pauli (left) with Dalby Golf Club committee member Bill Baker (middle) and course superintendent David King (right)



as it does on the green.

With our new SL PrecisionCut[™] Walk Greens Mowers, you can set height-of-cut with a cordless drill, switch rollers by simply removing two bolts, and add an easy-to-adjust front push brush, Greens Tender Conditioner or Rotary Brush. Plus, get the flawless finish on your greens that our walkers are known for.

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Masters student Ben Evans provides a backgrounder on one of turf management's most debilitating diseases, Take-all patch, and finds that pH reduction and cultural practices can go a long way to controlling its impact. ake-all patch is caused in bentgrass greens by the fungal pathogen *Gaeumannomyces graminis* var. *avenae*. Severe outbreaks can damage large areas of turf, causing tremendous damage to the visual appeal of a golf green. The fungus inhabits the soil and causes damage under very narrowly defined conditions and particularly favours bentgrass (*Agrostis* spp).

This disease derives its common name of Takeall as it tends to 'kill all' plants within a certain area, leaving voids of dead turf within its margins. Originally classified under the genus *Ophiobolus*, the disease was first observed on turf in 1937 in Holland, but it wasn't until 1980 that it was named Gaeumannomyces Patch, or Take-all patch.

There are five species of *Gaeumannomyces* which occur on turf:

- G. graminis var. graminis;
- G. graminis var. avenae;
- G. graminis var. incrustans;
- G. graminis var. tritici; and
- G. graminis var. wongoonoo.

While their appearances are all similar to the human eye, they are often distinguished by their preference of hosts (see Table 1). Take-all patch on bentgrass greens is caused by *G. graminis* var. *avenae*, the most common type of Take-all. It can also infect ryegrass, some fescues and in Australia has also reported to have attacked Tifdwarf.



IDENTIFICATION

Symptoms of Take-all patch can easily go unnoticed until drought or heat stress conditions arise. The disease displays no distinct leaf spot or lesion common with foliage infections. The disease is identified by dead, yellow to reddish brown, sunken circular patches, which measure from a few inches to several feet in diameter. Freshly affected plants become bronze in colour and are easily pulled out from the surface. As the disease affects underground parts, this also makes visual diagnosis difficult.

With the outward movement of the patch, resistant species may fill in the dead voids, which gives a frog-eye appearance. Commonly, weeds such as *Poa annua* and many broadleaf weeds can fill in these voids which makes management even more onerous. The patches resemble the blue-grey wilt appearance which is due to impaired root function.

The disease is readily identified from other patch diseases. Black strands of mycelium are visible under the base of leaf sheaths or on the surface of roots, rhizomes and stolons of infected turf. These dark brown to black ectotrophic runner hyphae can be observed with a small hand lens of 18x magnification. Once infected, roots turn dark brown to black and cease to function normally. Mycelium growth is limited, comprising fine, greyish hyphae. The disease does not infect leaves.

A common identifying feature on stolons of infected plants are perithecia. These are abundant, brown to black sacs, with numerous cylindrical curved beaks extending through leaf sheaths. Within these sacs are 'asci' which are essentially the seeds of Take-all patch. These sacs eject the seeds on to nearby plants, where a new infection site begins.

LIFE CYCLE

The disease spreads via outward growth of the organism from plant to plant, over rhizomes for instance. Dissemination over great distances can be achieved whenever a piece of ectotrophic fungi attaches itself to turf cultivation equipment, such as coring machines or vertical mowing equipment. The disease survives adverse conditions as a saprophyte in thatch.

Infection is a two-step process. Dark brown hyphae branch and form hyphopodia and colonise the cortex and the root. Then, dark brown runner hyphae grow on the surface of roots. This results in the death of the epidermal and outer cortical cells of roots. As the infection process continues, vascular hyphae and dark brown necrotic streaks develop. All tissues in affected roots turn brown and cease to function. This is why watering will not alleviate the wilt associated with this disease.

G. graminis var. avenae grows essentially wherever bentgrass is grown. Although the pathogen is favoured by cooler climates, it is most severe in the range of 15°C -24°C. Other members of the Gaeumannomyces family, such as G. graminis

Above: Symptoms of Take-all patch can easily go unnoticed until drought or heat stress conditions arise. The disease is identified by dead, yellow to reddish brown, sunken circular patches, which measure from a few inches to several feet in diameter

Right: With the outward movement of Take-all patch, resistant species may fill in the dead voids, which gives a frog-eye appearance var. graminis and G. graminis var. wongoonoo, responsible for bermudagrass decline and Wongoonoo patch respectively, prefer temperatures over 25°C.

The disease is favoured by full and very high sand constructions (>80 per cent sand) with high pH (>7). Greens which have been heavily limed seem to favour Take- all patch. There is good correlation between rhizosphere pH and disease incidence. The disease was mainly found in the top 12-25mm of topsoil.

MANAGEMENT

Control of the disease can be quite difficult, as the conditions which give rise to Take-all also generally favour bentgrass growth. Pathogen activity is seen on soil temperatures around 15°C in spring and 20°C in autumn, which also favours bentgrass root development and elongation.

During infection, any process which decreases bentgrass root development should be avoided, such as excessive irrigation and soil compaction. Aerification to promote free water removal and gas exchange are key considerations. As the disease over-winters in thatch and decaying stolons, thatch management is a key consideration in limiting Take-all reoccurrence. Vertical mowing and dusting with non-lime topdressing materials and judicious nitrogen applications in autumn will limit thatch build-up.

The disease is commonly controlled by using acidifying fertilisers and by maintaining a pH at 5.5-6.0 (Smiley et al. 2005). Liming should only be applied to rectify severe acidity, where only coarse lime should be used to avoid severe changes in pH. In turf management, alterations of pH have been successful in combating many diseases. By altering a soil's pH, there is a shift in microbial activity. It is these microbes which are antagonistic to the fungi which incite many diseases, such as Take-all, and limit its occurrence.

A review of literature suggests there is a close correlation between the incidence of Take-all patch and the application of lime or alkaline fertilisers, or even calcareous sand. There is a decrease in disease severity when applications of acid inducing fertilisers are applied to turf. Take-all patch is most frequently seen after liming to correct over-acidity.

Applications of manganese (Mn) and copper (Cu) in trace element applications has shown some promise in reducing Take-all incidence. The increased susceptibility of bentgrass to Take-all patch is thought to be a result of Mn deficiency. This may be related to the role of Mn in lignin production and the importance of lignification of cell walls as a defensive mechanism against this disease (Heckman et al. 2003).

Researchers in the United States found plots treated with high rates of Mn and Cu (2.04 and 0.68kg/ha respectively) exhibited less disease than turf receiving no applications at all. In the two year study, disease incidence was decreased from 20 per cent of untreated turf to five per cent with the high rate of Mn and Cu (Hill et al. 1999).

Another research study which investigated the use of Mn on a bentgrass fairway infected with Take-all patch, concluded Mn did in fact reduce and suppress the foliar symptoms of Take-all patch on bentgrass turf. A rate of 2.25kg/ha was generally effective. Re-application of manganese fertiliser on a yearly basis was effective in relieving foliar symptoms.

Mn has a low mobility in plants once it is incorporated into shoot tissue. Therefore a large portion of foliar applied Mn would likely be readily immobilised in the upper portions of the leaves once foliar uptake occurs and would be removed via mowing. Another benefit of lowering pH is that it makes Mn more available to the plant, helping to further combat Take-all.

Resodding of affected areas is a viable option if infections are small. The infected soil must be removed from the site and all tools used in the resodding process must be cleaned thoroughly, as the slightest strand of mycelium left behind will begin a new infection.

Take-all patch is very weak in competing in the soil and is easily antagonised by other organisms. In new greens, with little microbial activity, Take-all can be rampant. As the disease colonises newly established greens of high sand content or recently sterilised greens, there is general consensus that the disease establishes in soils with little microbial antagonism.

Turf researcher Richard Latin (2005) reported a general decline in Take-all incidence over the course of a five-year study. When his trial plots were juvenile, Take-all was rampant, but over the years as microbial populations built-up to antagonise the fungus and sound stress management procedures were applied over summer months, Take-all was rarely seen.

REFERENCES

For a full list of references for this article please contact author Ben Evans via email bennyevans_ au@yahoo.com.au &

TABLE 1. GAEUMANNOMYCES SPECIES

| Isolate name | Common name | Temp range | Preferred host |
|-----------------|-----------------|------------|----------------------------------|
| G. graminis | Take-all patch | 20°-25° | Bentgrass, ryegrass and fescue |
| var. avenae | | | |
| G. graminis | Bermudagrass | 20°-30° | Couchgrass, kikuyu, zoysia, |
| var. graminis | decline | | centipede grass, seashore |
| | | | paspalum, buffalograss, ryegrass |
| G. graminis | Take-all patch | 15°-25° | Wintergrass, Kentucky bluegrass, |
| var. incrustans | Zoysia root rot | | couchgrass, zoysia, fescue |
| G. graminis | Take-all | 20°-25° | Largely affects wheat, reported |
| var. tritici | | | on some turfgrasses, mostly |
| | | | bentgrass |
| G. graminis | Wongoonoo Patch | 25°-30° | Buffalograss, couchgrass |
| var. wongoonoo | | | |



A common identifying feature on stolons of infected plants are abundant brown to black sacs, or perithecia, which contain 'asci' which are essentially the seeds of Take-all patch

Unplugged

The use by course maintenance staff of headphones/MP3 players and other music playing devices while working has a number of OH&S implications. The Pulse asks superintendents whether such use has caused issues at their facilities and how have they dealt with it?

e currently have a policy in place with a ban on headphones/MP3 players when staff operate all mowing equipment. This is not a blanket ban as we allow the use of these items when spraying in landscape areas and in the walnut farm. The staff have a requirement when operating machines that they are responsible for that unit and damage or misuse is not acceptable. Concentration can drift when listening to music and accidents and or damage can occur. In the past it has been argued that listening to music can maintain concentration levels but experience has shown damage does occur to machinery when staff have music playing and injury has resulted as they have been oblivious to golfers calling out 'fore'.

If you can't hear your machine running or units spinning, how can you tell if they are operating properly? We have found we have fewer problems with machines especially cutting units that may have been nipped up a little tight and can be heard from the manager's office when you are sitting with

"I could be flippant here and say the use of headphones/MP3 players is okay if they are listening to 'good' music and not, say, Justin Bieber! (That should constitute an on the spot dismissal! - Ed) But in truth, my approach here at Indooroopilly is that staff members are welcome to listen to music but only through approved earmuffs with an integrated radio which they must purchase at their own expense. Normal earmuffs and plugs are provided, however, not the radio integrated units. This way we are complying with all safely regulations and while not outwardly encouraging the listening of music at work, we have provided an avenue should they wish to do so. And safely." Charlie Giffard, Indooroopilly GC, QLD

him while in the middle of asking for a new piece of equipment. We also found staff rotation takes out the boredom of some cutting tasks and improves productivity." Gary Bass, Yering Meadows GC, VIC

"The use of headphones/MP3 players is not allowed under our staff conditions of employment although there is always someone who will forget and need a friendly reminder every few months." Peter Lonergan, Coolangatta & Tweed Heads, QLD

"Headphones and mobile phones are banned from use while out on course. Mobile phones must be placed on silent and can only be used in the case of an emergency. Senior staff monitor this thoroughly and we keep reinforcing the policy at our monthly staff meetings. To date we have not had staff caught with MP3s or other music devices." Darren Balfour, The National GC, VIC ***

"This is a very interesting topic. So far at Castle Hill I haven't banned them altogether, however, I impress on all the young fellas that like to wear them that it is the height of bad manners to have them on when working with other people. There is nothing more infuriating than trying to get someone's attention from 10 feet away and they can't hear you because they have Wutang Clan or some other talentless outfit blaring at 120 decibels!

A previous superintendent at Castle Hill, who should remain nameless (Bill Carlon), used to tear them out of the offender's ears and stomp them to pieces with his steel cap boots! Oh for the good old days! In all seriousness it is a big issue and obviously there are potential safety issues to consider." Martyn Black, Castle Hill CC, NSW

"We have been using MP3s for quite a few years now and have had no problem at all with safety on the machines or on the course. We only use them when we are cutting fairways and the second cut. The only thing is sometimes you don't hear the mobile phone which isn't a bad problem sometimes ... " John Duncan, Jamberoo GC, NSW

Elactice

Providing expert advice for to improve

Contact AGCSA HR and Best Practice Manager Daryl Sellar 0408 322 397 daryl@agcsa.com.au "We don't allow the maintenance staff to use music devices while working on the golf course. I have found them a distraction which can cause operators to lose focus on what's happening around them in regards to golfer movement and play, but also on occasions their own personal safety. I am also concerned that listing to music doesn't allow you to hear and sense a possible sound and vibration change that can indicate a problem with equipment.

I have been guilty of enjoying listening to music driving up and down mowing fairways before holding a position of responsibility – no care and no responsibility!

A golf course maintenance team member is now more than ever before individually accountable in relation to presentation of his work, OH&S and the use of expensive equipment. Peer pressure from a maintenance team to perform and present professionally now doesn't allow room for their use.

Recently the question was asked by a new employee about using a music device on the course at a team meeting. The team proudly answered the question." Adam Robertson, Kew Golf Club, VIC

"Headphones, MP3 players and personal phones are allowed here at Wembley Golf Complex during work. However, it is against policy to use a mobile phone while operating any machinery for safety reasons. Some staff are allowed to quickly answer their phone once the machine is switched off if they have work-issued phones.

We have had no issues to date with staff using MP3 players while using machinery or working. However, we did have one staff member who was listening to an e-book and was not paying attention to his work. This was quickly stopped and he was given a verbal warning about his lack of attention to his work and not being able to hear other staff giving him instructions." Darren Wilson, Wembley Golf Complex, WA "It has been a problem in the past with a few employees who just would not toe the line. It was sorted simply by laying down the law and not allowing any grey area and this has always been supported by upper management. In the main my staff realise that it is a small part of hearing and feeling if a machine is operating properly." Anthony Toogood, Commercial GC, NSW

"It's pretty simple at Murray Downs – no headphones/ MP3 players! It is a safety risk pure and simple. It is a fact people become less aware of their surroundings and I think you will find that in recent times some pedestrians have been run over in traffic due to their headset distraction." Andrew Abbott, Murray Downs G&CC, VIC

"When I first started at Sanctuary Cove the use of personal stereos was completely out of hand. The day that I watched a guy changing holes with his earphones in, completely oblivious to the group of golfers waiting to play up to the green, made it clear that this was a habit that had to change. In my mind it is completely unprofessional and if someone was to have any sort of accident while using one we would be very exposed from an OH&S standpoint.

From that day I made the very unpopular decision to completely ban all personal stereos which was met with complete disgust by my staff. I tell my staff that they have the choice whether or not to wear a personal stereo while they work, but if they choose to do so they will be working elsewhere." Robin Doodson, Sanctuary Cove G&CC, QLD

"For some time the groundstaff at Southport Golf Club were permitted to wear headphone sets etc while working on the golf course. However, in 2009 the club changed its policy in relation to this for the following reasons;

- Reduced ability for the groundstaff to hear a golfer call 'fore';
- Reduced ability to hear an audible failing of machinery while operating;
- Reduced concentration and generally it looked unprofessional.

When implemented it was not popular among the groundstaff, however, when a couple of close shaves involving golf balls and staff took place it was made clear that anything that reduced staff safety had to be addressed immediately. This was subsequently placed into the club's workplace manual and the staff now must sign off on it." Stuart Moore, Southport GC, QLD

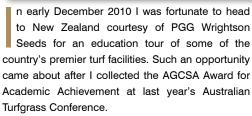
superintendents and golf clubs course maintenance standards

STUDY TOURS

Among the many venues Steve Johannessen visited on his NZ study tour was Jack's Point in Queenstown. The tour came about after Johannessen was bestowed the 2010 AGCSA Award for Academic Achievement

Turfgrass Conference on the Gold Coast, former Chisholm Institute Diploma of Sports Turf Management student Steve Johannessen was named the inaugural winner of the AGCSA Award for Academic Achievement, Part of his prize was a comprehensive study tour to New Zealand courtesy of award sponsors PGG Wrightson Seeds. Here Johannessen recounts his trip and we profile the five nominees who will contest the award in 2011.

At the 2010 Australian



This award is bestowed upon a student who has recently completed the Diploma of Sports Turf Management Course and I had done so through Chisholm Institute during my time as assistant superintendent at Eagle Ridge Golf Course on Victoria's Mornington Peninsula.

The tour started in Auckland where I met up with PGG Wrightson Turf North Island territory managers Brian Griffiths and Mark Stidwill and together we drove north to the Bay of Islands where we kicked off with a visit to Kauri Cliffs. For those fortunate enough to have visited this exclusive course, you would have to agree that it has some of the best ocean views and scenic holes going. We were fortunate to visit on a perfectly still and fine day, but you could imagine how the course would play if some hostile weather blew in.

Kauri Cliffs superintendent Andy Wood took us for a tour around the course and I was impressed with the quality of the bentgrass greens and tees considering they were in the middle of a long, dry spell, well by their standards anyway. The ryegrass fairways looked outstanding as they had been cut in the morning and were striped up beautifully. I could not find a divot or damage on any fairway.

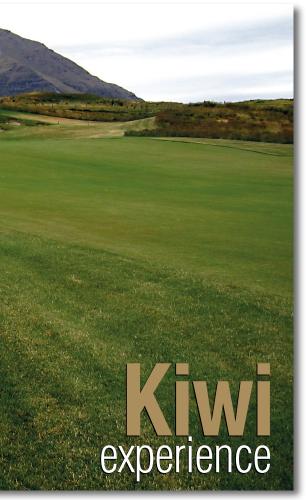
From Kauri Cliffs we took a short drive to Kerikeri Golf Course where Colin Smith showed us around this tree-lined course. We saw the contrast between the ryegrass fairways of Kauri Cliffs and the Wintergreen couch fairways of Kerikeri, interesting considering that both courses operate in similar climates.

The Kerikeri greens were a browntop bentgrass/ *Poa annua* mix which I had not seen before. Wetting agents are important here to help with the dry conditions and aid with thatch collapse problems. Colin manages the course with limited staff numbers and budget compared to Kauri Cliffs which, not surprisingly, has much greater resources.

After an overnight stay in the beautiful holiday resort of Paihia, the following day we headed back down to Auckland. First stop was Onewa Domain, a multi-purpose council sports venue on the North Shore maintained by Recreational Services which contracts to a number of Auckland councils (they have about 160 fields and 40 parks on their books). John Donnelly gave us a tour of the grounds which were in fantastic condition considering the high traffic volume they receive.

Onewa has several ryegrass ovals and a turf cricket wicket and includes a new Regal Staygreen kikuyu rugby/athletics field (established through seeding) which will be used as a training venue for





the 2011 Rugby World Cup. The facility's other ovals were seeded with Duraturf Sports Oval blend which includes Colosseum, Arena 1 and Tambor. The wickets were 901 ryegrass, which seems to be the turf of choice on many New Zealand wickets.

From Onewa we crossed the Auckland Harbour Bridge to perhaps New Zealand's most famous sporting stadium – Eden Park. Scene for the All Black's only Rugby World Cup victory back in 1987, Eden Park holds international rugby and cricket matches with a capacity of about 40,000. Over the past few years the stadium has been upgraded with improved grandstands and facilities and for the upcoming Rugby World Cup an extra 10,000 people will be seated on temporary stands.

At the time of my visit head groundsman Mark Perham was preparing a wicket for the Pakistan series. The field is a Motz stablised turf system comprising Centurion ryegrass with some areas oversown with Colosseum, and is mowed at 12mm for cricket matches. The stadium runs a Strathayr portable pitch system with the wickets comprising Patumahoe soil (65-70 per cent clay content) and 901 ryegrass.

SOUTHERN EXPOSURE

After taking in the sights up north, the next port of call was Christchurch in the South Island where my tour guide would be PGG market development manager Mark Shaw. Our first stop in Christchurch was AMI Stadium where head curator Chris Lewis showed us around this premier venue which hosts international cricket, rugby and soccer.

The surface is a mixture of Colosseum and Centurion ryegrass on a Motz base and at the time of my visit an A-League game had just been held and the cricket wicket was about to be dropped in for the Pakistan series. Local Waikari clay is used in the pitch, which according to Chris is similar to Merri Creek clay which is used at the MCG. Like Eden Park, the Phantom Corer machine plays a big part in maintenance programmes at AMI Stadium with Chris running it over the surface every two weeks or so.

AMI's ryegrass field is cut at a height of 12mm for cricket and 20mm for soccer. There have been some disease issues in the past such as fusarium, damping off and fairy ring, but with well-timed preventative fungicides these problems have reduced. The region's climate also makes it easier to keep on top of any disease issues.

Following our look around AMI Stadium we drove to the PGG Wrightson Seeds warehouse. This new facility was hit hard by the September 2010 earthquake and little did we know at the time of our visit that an even bigger earthquake would strike just a few weeks later.

The 2.5 hectare warehouse is home to 25 staff and packages up to 7000 tonnes of seed a year. About 80 per cent of stock is produced for the farming sector with the other 20 per cent for the turf industry. A huge coolroom stores seed containing endophyte which needs to be kept at 4°C.

After meeting the warehouse staff we took a short drive to the Kimihia Research Centre where I was introduced to turf agronomist Bill Walmsley. Kimihia is an extensive 100ha research facility that is home to about 40 staff who aim to produce tougher sports field cultivars while improving seed germination, endophyte properties and overall plant health. As Kimihia is located in Christchurch which has a temperate climate, most development concentrates on species such as perennial ryegrass, tall fescue, fine fescue and browntop bentgrass.

Johannessen visited the Kimihia Research Centre where he was able to examine the Suttons Mix production paddock being grown for Royal Melbourne Golf Club



STUDY TOURS

Damage sustained to stock at PGG Wrightson's warehouse following the September 2010 earthquake which struck Christchurch



I found the turf breeding area very interesting and was surprised at the number of different trials being undertaken. Among these was a 3-4ha production paddock of Suttons Mix being contract grown on behalf of The Royal Melbourne Golf Club. Another project is looking at grass types containing certain endophytes to discourage wildlife, especially bird life. PGG Wrightson is working closely with New Zealand's major airports to grow Jackal AR601 tall fescue on and around airport sites to reduce the amount of bird activity, thus reducing the likelihood of a bird strike.

GOLFING MECCA

After a very interesting time in Christchurch our final port of call was Queenstown which has become one of New Zealand's premier golfing destinations in recent years. I was certainly spoilt for choice and we kicked off the stay with a visit to The Hills Golf Course, owned and developed by jeweller Michael Hill. The Hills caters for just 5000 rounds of golf a year (a round costs \$500) and was venue for the 2009 New Zealand Open.

Ian Douglas gave us a detailed tour of the course starting at the state-of-the-art clubhouse which affords incredible views of the surrounding snow-capped mountain ranges. A staff of 15 maintain the Egmont browntop greens and tees and fescue blended fairways. The fairways have not been fertilised in over two years, except for some seaweed extract and wetting agent mix through the injection system.

Some of the holes are quite narrow and many are surrounded by native tussocks, well maintained water hazards and uncovered rocky areas. The owner's son is an artist and throughout the course are metal sculptures which make for an interesting diversion.

A short drive from The Hills is the 27-hole Millbrook Golf Course where superintendent Blair Dibley showed us around the course. The original 18 holes was designed by Sir Bob Charles with an additional nine holes designed by Greg Turner/Scott McPherson. During the tour I was fortunate to meet and chat with Greg who was playing at the time.

Millbrook has Egmont browntop greens and browntop/fescue tees and fairways. Considering there are 27 holes to maintain, Blair has a relatively small staff of 11 staff, and in the future he is hoping to upgrade five holes.

From Millbrook we drove about half an hour over the mountain ranges to Wanaka where Grant Bunting (general manager and superintendent)



Johannessen inspects the trial plots at Kimihia Research Centre



Barley Farm is the private residence of Americas Cup winning skipper Russell Coutts who has had an golf course built on the property. The course compromises five greens, 10 tees and six bunkers which, in varying configurations, make up 18 holes

gave us a tour around Wanaka Golf Club. Wanaka is a town with a population of about 6000 people and the golf club boasts an impressive 1050 members. The views from some of the holes are amazing with the gorgeous Lake Wanaka and Southern Alps providing a stunning backdrop.

Wanaka hosts around 40,000 rounds of golf a year and has four staff members. The staff have their work cut out for them with temperatures ranging from -7°C to 35°C degrees. During the depths of winter the browntop greens freeze and an aggressive oversowing programme is required to revitalise them so they bounce back during the warmer months.

Wanaka is one of the first courses to use a new browntop bentgrass variety called Arrowtown which is part of a browntop variety trial being conducted at Kimihia. Although the green was a few weeks off from opening when I visited, it looked to already provide a fantastic playing surface and could soon become a regular for new greens in New Zealand and other countries with a temperate climate.

Our next stop was a very interesting experience

for me. Barley Farm is the private residence of Americas Cup winning skipper Russell Coutts and having grown up a keen sailor it was great to be able to visit this magnificent facility. Coutts has had an 18-hole course built on the property which contains five greens, 10 tees and six bunkers.

The course was designed by Greg Turner and

Wanaka Golf Club affords spectacular views of the New Zealand Southern Alps





took two-and-a-half years to construct with the design making the most of some impressive views. The longest hole measures 385m and the greens are a fescue blend which are maintained at 4.5mm. Although the course is rarely used by Coutts and his guests, the greens were in mint condition and are maintained by a contractor who cuts them three times a week.

The final course visit of the tour was to Jack's Point, a new development on the outskirts of Queenstown. Designed by John Darby, the course is part of a residential estate located at the base of The Remarkables mountain range and was completed in 2008. Environmental wellbeing was a key consideration during the design and construction, with minimal earth moving specified. Even the maintenance facility is invisible until you are on top of it, as it is built into a hollow.

The greens and tees are an Egmont browntop/

fine fescue mix with fine fescue fairways. The course has many unique qualities with mountain and lake views and natural matagouri scrub which remind me of a native boxthorn. A beautiful feature is the stone walls made from the local schist rock.

On my way to the airport to fly back home we had time to drop into the Queenstown Events Centre to have a look at wicket preparations for the upcoming cricket matches against Pakistan. The outfield had recently been oversown with Colosseum ryegrass at 500kg/ha.

That wrapped up my tour and looking back I cannot thank the PGG Wrightson Turf team enough for their welcoming hospitality and friendliness. I would never have been able to get such a detailed insight into the New Zealand turf industry without their sponsorship of the award and I am sure the 2011 recipient will get as much benefit out of the trip as I did.

PGG Wrightson Turf

2011 AGCSA ACADEMIC AWARD FINALISTS

R AGCSA Award for Academic Achievement, presented in association with PGG Wrightson Seeds, aims to recognise individuals for their commitment to pursue further turf management studies. First bestowed at the 2010 Australian Turfgrass Conference on the Gold Coast, it is presented to an individual who has completed and excelled in the Diploma of Sports Turf Management. Together with PGG Wrightson Seeds, the AGCSA congratulates the following 2011 finalists.



ASH DRUERY

NSI RYDE COLLEGE, NSW

Ash successfully completed the Diploma of Sports Turf Management in 2010, the same year in which he was promoted to assistant golf course manager at Sydney's Cromer Golf Club. Originally hailing from the NSW southern highlands, Ash started a greenkeeping apprenticeship at Bowral CGC where he would spend 10 years, rising to be head greenkeeper. After a stint working for an irrigation company Ash joined the Cromer crew in 2008. While undertaking the Diploma subject 'Manage Environmental Performance', Ash took ownership of the club's environmental management system (e-par) and reinvigorated its implementation and maintenance. By doing this he benefited his employer and produced an outstanding assessment project for the Diploma.



TIM FANKHAUSER CHISHOLM INSTITUTE. VIC

Currently assistant superintendent at The Dunes Golf Links on Victoria's Mornington Peninsula, a position he

has held since 2006, Tim was encouraged to undertake the Diploma course by superintendent Mark Gahan. Given his outstanding capabilities which came to the fore as a mature age apprentice, Tim quickly demonstrated the commitment and dedication to further his knowledge and understanding of the industry. By undertaking the Diploma course at Chisholm, Tim has helped to drive improved OH&S standards at The Dunes and his research assignment on the effects of growth regulator ethephon on bentgrass benefited the club which at the time was experimenting its use on *Poa annua* seedhead suppression.



DAMIAN HOUGH

Having had an extended break from studies, Damian came into the Diploma course with a specific purpose to further himself in a career he clearly approached with enormous passion. Damian completed the course in 2010, a year in which he took over from Les Burdett as turf manager at the prestigious Adelaide Oval. From the outset during his studies, Damian exhibited an enquiring mind and was keen to seek the connection between science or theory and the practical art of turf management. The quality of his assignments was exemplary and his main project looked at the development and management of a chemical use strategy for the Adelaide Oval outfield.



TROY JORDON

Troy started his career in horticulture as an apprentice gardener before rising to be head groundsman at

Waverley Park, the Hawthorn Football Club's main training venue. Midway through 2008 Troy moved across to Etihad Stadium as arena assistant where he went on to complete the Diploma course, finishing his second and third year studies in the one year. Troy's input during class time would often lead to stronger discussions among the class which is an attribute that many shy away from. The quality of work presented was of the highest standard and his main piece of work dealt with drainage and infiltration rate tests on the Etihad surface.



LIAM O'KEEFFE THE GORDON TAFE, VIC

Liam completed the Diploma in 2010 and is currently

employed as curator at Warrnambool Racing Club. Due to his commitments with the job, Liam was unable to attend classes in Geelong so opted to do the course by correspondence which requires very strong self-discipline and focus. Liam not only managed this but excelled in his studies and this showed in his turf research trial project which examined the effects of root growth stimulants ProGibb, Arcadian and Kelpak on a perennial ryegrass/tall fescue turf mix grown from seed. This project was undertaken to help improve wear tolerance which plays a major part in managing a racecourse.



* Winter grass (*Poa annua*), Crab grass (*Digitaria sanguinalis*), Summer grass (*Digitaria ciliaris*), Crowsfoot grass (*Eleusine indica*).

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Managing Sol Wat Pepelency in turfgrass on sands

The University of Western Australia recently completed a study on the incidence, severity and amelioration techniques of soil water repellency in kikuyu of two contrasting soil organic matter contents. Louise Barton and Tim Colmer highlight results from the study.



hroughout Australia, turfgrass producers and managers are under increasing pressure to restrict their water use. Irrigation scheduling based on the replacement of a proportion of evapotranspiration (ET) is being strongly advocated as a means to improving water use efficiency.

However, while ET-replacement irrigation can optimise watering regimes it may also increase the incidence of soil water repellency under turfgrass grown in sandy-textured soils (Augustin and Snyder 1984; Cisar et al. 2000). Soil water repellency decreases water use efficiency by causing irrigation water to unevenly infiltrate the soil surface, bypassing a proportion of the turfgrass roots (Dekker et al. 2001; Doerr et al. 2000).

In severe cases the applied water may runoff the soil surface before infiltration occurs. The development of soil water repellency may also invoke over-watering as the turfgrass manager attempts to overcome wilting turfgrass (Cisar et al. 2000), further undermining water conservation.

Managing soil water repellency is essential for maintaining high quality, water-efficient turfgrass systems. Decreasing the incidence of soil water repellency requires an understanding of the contributing factors and the development of corrective procedures. Our project investigated, for kikuyu turfgrass of two contrasting soil organic matter contents:

CONTRACTOR OF CO

- When does water repellency develop under a sand-based turfgrass system?
- By how much can soil wetting agents decrease soil water repellency, and does the timing and formulation affect efficiency of the treatment?
- Do turfgrass renovation techniques minimise the development of soil water repellency?

DO WETTING AGENTS ALLEVIATE SOIL WATER REPELLENCY?

Wetting agents are a particular type of surfactant that increase the wetting capacity of water in a hydrophobic soil by reducing the interfacial tension between water and soils, thereby making it easier for the water to be absorbed by the soil.

Wetting agents differ widely in their effectiveness, with their success dependent upon chemical composition (Cisar et al. 2000; Kostka and Bially 2005; Leinauer et al. 2007), application rate (Kostka 2000), frequency of application (Park et al. 2004), and relative performances of different types are not always consistent from site to site (Karnok 2006).

Prior assessments of liquid wetting agents have been conducted on intensively managed turfgrass systems (i.e., sports grounds and golf courses), but in the many less resource-intensive turfgrass systems in Australia, granular wetting agent formulations are often used. The turfgrass may also contain high organic matter content due to irregular renovation (Barton et al. 2009).

Consequently, we investigated the effectiveness of wetting agents to decrease soil water repellency in kikuyugrass grown in sandy soils of contrasting organic matter content irrigated at 60 per cent replacement of net evaporation.

We found that applying an effective granular wetting agent can decrease soil water repellency and maintain turfgrass quality during the summer when under a conservative irrigation regime. However, not all products tested were as effective as one another. The relative effectiveness of granular soil wetting agents was strongly related to the total amount of active ingredient applied to the turfgrass, which was partly predicted by a laboratory-based test (Barton and Colmer 2009 – see ATM Vol 11.6; Barton and Colmer 2011).

In Mediterranean-type climates, our results indicate soil wetting agents should be applied early in the irrigation season so as to minimise the development of soil water repellency during summer. This is because turfgrass grown in sandy-textured soils, managed using ET-replacement irrigation, was found to be susceptible to the development of soil water repellency early in the irrigation season.

Applying either a granular or liquid wetting agent formulations is recommended, as based on a single product, both delivery forms appear to be equally effective when applied at the same rate of 'active' ingredient (Figure 1, page 75). Furthermore, applying the annual recommended application rate in early spring, or evenly splitting the annual application rate between early spring and early summer, were both effective at preventing

TABLE 1. RENOVATION TREATMENTS APPLIED TO KIKUYU PLOTS

| Treatment | Description |
|--------------------|---|
| Cored + topdressed | 100 x 65mm spacing, 25mm (outside diameter) hollow |
| | tines, 100mm depth; applied each November with cores |
| | swept from plots. 5mm sand applied in November and May/ |
| | April each year. |
| Cored | 100 x 65mm spacing, 25mm (outside diameter) hollow |
| | tines, 100mm depth; applied each November with cores |
| | swept from plots. |
| Topdressed | 5mm sand applied in November and April/May, each year. |
| Verticut | 3mm blade, 38mm spacing, penetrated 20mm into the soil; |
| | Carried out each November. |
| No renovation | No treatment applied |

the development of soil water repellency during the hotter summer months (Figure 1). Importantly, the effectiveness of soil wetting agents decreased when applied to sands containing high soil organic matter content (Figure 1) so application rates may need to be increased on these soil types.

DO RENOVATION PRACTICES ALLEVIATE SOIL WATER REPELLENCY?

Turfgrass renovation techniques that prevent thatch and mat accumulation may also be an approach to minimising the severity of water repellency. Thatch layers and surface soils high in organic matter have been shown to exhibit water repellency in a number of turfgrass sites in overseas studies (Dekker et al. 2005; Kostka et al. 1997).





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TABLE 2. EFFECTS OF RENOVATION TREATMENT ON SURFACE HARDNESS

| Date | Time ^a (mo | onths) | | Surface hardness (Gravities) ^b | | | |
|-------------------------|-----------------------|-----------------------|-----------|---|----------|---------------|--|
| Treatment | | Cored + topdressed | Cored | Topdressed | Verticut | No renovation | |
| Ölder kikuyugrass | | | | | | | |
| 9 Nov. 05° | 0 | 50 (0.0) | 50 (0.0) | 50 (0.0) | 50 (0.0) | 50 (0.0) | |
| 15 Nov. 06° | 12 | 47 (5.1) | 46 (4.0) | 41 (1.1) | 44 (3.0) | 43 (0.0) | |
| 14 Nov. 07° | 24 | 40 (0.8) | 40 (2.0) | 35 (0.3) | 41 (2.1) | 40 (1.4) | |
| 17 Nov. 08 ^d | 36 | 40 (2.0) | 39 (1.9) | 35 (0.9) | 39 (1.0) | 40 (0.5) | |
| 11 Nov. 09 ^d | 48 | 41 (1.9) | 41 (2.7) | 37 (2.6) | 38 (1.0) | 42 (0.5) | |
| | | | Younger k | ikuyugrass | | | |
| 9 Nov. 05° | 0 | 90 (0.0) | 90 (0.0) | 90 (0.0) | 90 (0.0) | 90 (0.0) | |
| 15 Nov. 06° | 12 | 79 (2.9) | 77 (0.0) | 79 (2.2) | 87 (1.9) | 92 (4.0) | |
| 14 Nov. 07° | 24 | 61 (1.4) | 58 (1.6) | 63 (0.6) | 73 (0.5) | 67 (0.3) | |
| 17 Nov. 08 ^d | 36 | 55 (1.8) | 61 (2.2) | 57 (0.6) | 79 (1.8) | 65 (0.9) | |
| 11 Nov. 09 ^d | 48 | 49 (1.4) | 54 (1.0) | 52 (0.7) | 67 (2.9) | 59 (1.1) | |

^a Time after initial treatment.

^b Measured using a 2.25kg Clegg Hammer. Values represent the mean (and standard error) of three replicates.

° Data collected in a previous study (Barton et al. 2009), using same methods as present study.

^d Data from current study.

Various practices have been proposed for minimising the development of thatch and mat in turfgrass (Carrow et al. 1987; Waddington 1992), but the possible influence on water repellency had largely been untested. Consequently, we investigated the effectiveness of renovation techniques to decrease water repellency in kikuyugrass grown in sandy soils of contrasting organic matter.

Mechanical and topdressing techniques to reduce accumulation of thatch and mat, and the influence on soil water repellency, were evaluated. Treatments included two kikuyugrass ages of contrasting organic matter content, and five renovation techniques (cored plus topdressed, cored, topdressed, verticut, no renovation – see Table 1, page 73 for full treatment details). Irrigation water supplies were limited to 60 per cent replacement of net evaporation. Treatments had been applied annually to kikuyugrass plots each spring since 2005.

Diluting or removing organic matter in established kikuyugrass did not decrease the incidence of soil water repellency. Overall, regular renovations did not prevent the increase in organic matter content with time, although the rate of



Dry patch in kikuyugrass under 60 per cent ET-replacement irrigation during summer increase differed between treatment; nevertheless all treatments contained an organic matter content greater than the critical value of 3.5 per cent (McCoy 1992) after four years of regular renovation.

Of the various treatments, topdressing turfgrass twice a year with sand was most successful to restrict the accumulation of organic matter in newly planted kikuyugrass and decreased the organic matter content of the older kikuyugrass. Since soil wetting agent effectiveness can be decreased in sands containing high soil organic matter content (Figure 1), conducting renovations would still likely provide benefits when in combination with the use of a soil wetting agent.

Renovation can also have other benefits to turfgrass surface quality. Verticutting was the most effective approach for restricting the progressive softening of the younger kikuyugrass with time, whereas the older kikuyugrass continue to soften irrespective of the renovation treatment (Table 2). The colour and clipping nitrogen concentration of both kikuyugrass ages were maintained to local standards by all mechanical and topdressing techniques.

CONCLUSIONS

Utilising an effective soil wetting agent, in combination with practices that limit the accumulation of soil organic matter, is recommended for decreasing the incidence of soil water repellency in turfgrass grown on sandy soils, and irrigated based on the replacement of a proportion of net evaporation.

ACKNOWLEDGEMENTS

Leon Hodgson and Matthew Willis for maintaining the turfgrass plots and collecting soil and plant samples; Matthew Willis and Rena Matsuda for plant and soil analyses; Greenacres Turf Farm is thanked for help in the design and maintenance of the irrigator; Lawn Doctor and Turf Developments WA for renovating turfgrass plots; City of Stirling and City of Perth for providing apprentices to assist with mowing, CSBP Ltd for supplying fertiliser, MEY Equipment for lawn mower supply and servicing, and UWA (UniGrounds) for assistance with some aspects of general turfgrass maintenance; members of the UWA Turf Industries Research Steering Committee for their support and advice.

This project has been facilitated by Horticulture Australia Ltd in partnership with the Australian turf industry. It was funded by voluntary contributions from a consortium of local government authorities, plus the Botanic Gardens and Parks Authority, Department of Education and Training, Department of Water, GCSAWA, Lawn Doctor, Organic 2000, TGAA WA and the Turf Growers Association of Western Australia.

The consortium of local government authorities included the cities of Armadale, Belmont, Cambridge, Canning, Cockburn, Gosnells, Kwinana, Melville, Nedlands, Perth, Rockingham, South Perth, Stirling, Subiaco, Vincent and Wanneroo.

Louise Barton and Tim Colmer hail from the University of Western Australia's Faculty of Natural & Agricultural Sciences http://www.fnas.uwa.edu.au/ turfresearch/index.htm

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A full list of references for this research article can be obtained by emailing Louise Barton louise.barton@ uwa.edu.au 址

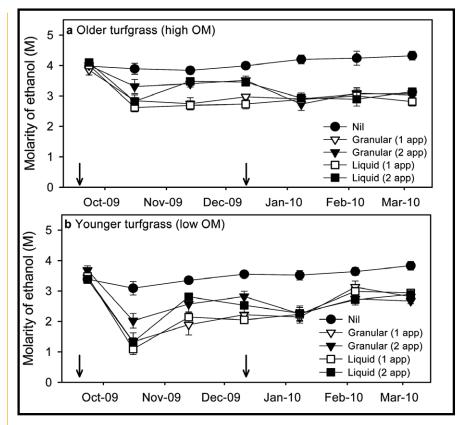


Figure 1. Influence of soil wetting agent formulation and application frequency on the molarity of ethanol droplet test (MED) beneath an older (high organic matter content) and younger (low organic matter content) kikuyugrass with time. Increasing MED indicates increasing soil water repellency. Arrows indicate when soil wetting agents were applied



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Improving the selection and management of turfgrass in the

DEEDI research scientist Bartley Bauer outlines a new three-year research project being undertaken in conjunction with Singapore's Centre for Urban Greenery and Ecology which will examine the adaptability of warmseason varieties to tropical environments.





Right: Aloha seashore paspalum is just one of 16 warm-season varieties to be assessed at the Singapore trial site hroughout 2010 the Queensland Department of Employment, Economic Development and Innovation (DEEDI) liaised with Darwin City Council, Mackay Regional Council and the Centre for Urban Greenery and Ecology (CUGE) in Singapore, with a view to collaboration on research that would improve the utilisation of turfgrass in tropical regions. Funding from these two councils and the CUGE has been matched by investment from Horticulture Australia Limited (HAL) to initiate project TU09001: Adaptation of Warm-Season Turf Grasses for Tropical Environments.

Compared to subtropical and temperate locations, tropical regions typically employ fewer species and cultivars of turfgrass. There is a requirement for greater understanding of the cultivars that are best adapted to this climate and the cultural practices that specifically compliment their growth and quality in tropical conditions.

Understanding the optimal selection and management of turfgrass in the tropics is largely reliant on studies performed in the subtropics (Menzel and Broomhall, 2006a; Menzel and Broomhall, 2006b) although there is significant evidence to show that the relevant selection of cultivars and cultural practices for tropical conditions is often specific to these climatic zones (Wiecko, 2006; Warm-season cultivars that are new or otherwise unavailable as sod have been propagated at Redlands Research Station in DEEDI's glasshouse facility. These will be used in a new collaborative three-year research project which aims to improve the selection and management of turfgrass in tropical environments

Nishimoto et al., 1997; Murakami and Ray, 2000).

Although a narrow range of cultivars has been identified as suitable for tropical climates by local turf producers and turfgrass managers, there is limited scope in utilising them across the diverse array of amenity and sporting situations for which turfgrass is required. One concern that has been discussed with the participating councils is the relatively high input requirements of some of the turfgrasses they maintain.

In recent years a number of new cultivars have been released with potential to enable economic maintenance of a turfgrass in a tropical region. Despite the indications of such promise, most have not been trialled in the tropics.

The first objective of the project is identification of cultivars that increase turfgrass choice for each region, with an emphasis on products with minimal cultural requirements and substantial environmental tolerances (drought, wear, shade). The secondary aim is determination of the specific maintenance needs that are important for turf producers and for end users. This information will not only allow for selection of cultivars that are well-suited to tropical settings but also for the choice of cultivars that will potentially perform best in a particular function (sports field, urban parkland, roadside etc).

TRIAL SITES

The trials will be conducted in Wagaman Park in Darwin, the Mackay Regional Botanic Gardens in Mackay and the CUGE in Singapore. The species/ cultivars to be tested are listed in Table 1 (Australia) and Table 2 (Singapore) and will be evaluated over the life of the three year project.

Trial establishment was scheduled for late 2010, however, due to the effects of cyclones Yasi and Carlos, as well as some extremely high rainfall events through summer and autumn, site preparation in Australia has been delayed. Planting will now start in May 2011.

Some cultivars will be laid in Darwin and Mackay as bare-rooted turf, with soil removed using a turf



washer. This is one of the quarantine requirements for plant material entering the Northern Territory and also minimises any bias that could arise due to differing soil types.

Cultivars that are new or otherwise unavailable as sod have been propagated at Redlands Research Station in DEEDI's glasshouse facility and will be planted as plugs. All material for the CUGE will be sent as plugs in seedling trays.

Plots will be 5m x 2m and the trial will have three randomised replicates. Temperature data will be logged at the Darwin and Mackay sites and quarterly visual inspections will be conducted along with collection of quality data (using a turf colour meter), photographs and core samples.

DEEDI has signed a Memorandum of Understanding with Singapore's CUGE, signifying mutual intention for collaborative research. The CUGE's facilities provide an opportunity to conduct more rigorous scientific testing and although the trial design will mirror that of the Australian sites, wear tolerance/recovery and applied nitrogen response will also be examined. In addition to the quality assessments used domestically, the team in Singapore will also measure growth rates as determined by dry leaf weight over time.

Findings from research in Singapore will benefit Australia's turf industry in the wet tropics through extrapolation of experimental results between these regions of the same climate (Wen et al., 2000). A potential export market for Australian owned cultivars will also be explored by testing them in the challenging Singaporean environment.

The information generated through this project will enable sod producers, turfgrass managers and the general public to make more informed decisions regarding the most suitable cultivars and maintenance methods for their environment and specific purpose. This aligns with potential industry expansion and access to a wider range of turfgrass products for tropical Australia.

REFERENCES

For a full list of references, contact the AGCSA on (03) 9548 8600 or email info@agcsa.com.au 4

TABLE 1. CULTIVARS FOR ASSESSMENT IN DARWIN AND MACKAY

| Species | Common Name | Variety |
|-------------------------|-----------------------|-----------------------|
| Cynodon dactylon | Green couch | OZ TUFF™ |
| Cynodon dactylon | Green couch | 25a-1 |
| Digitaria didactyla | QLD blue couch | Tropika |
| Digitaria didactyla | QLD blue couch | Aussiblue |
| Stenotaphrum secundatum | Buffalograss | Kings Pride |
| Paspalum nicorae | Brunswick grass | Blue Dawn |
| Paspalum notatum | Bahia grass | LowGro™ |
| Paspalum vaginatum | Seashore paspalum | SeaDwarf™ |
| Zoysia hybrid | Zoysia grass | PristineFlora™ |
| Zoysia matrella | Manilagrass | Royal |
| Zoysia matrella | Manilagrass | Shadetuff ® |
| Zoysia japonica | Japanese lawngrass | Palisades |
| Zoysia japonica | Japanese lawngrass | ZT-11 |
| Zoysia japonica | Japanese lawngrass | Empire™ |
| Zoysia macrantha | Zoysia grass | Nara™ |
| Axonopus compressus | Broadleaf carpetgrass | Broadleaf carpetgrass |
| Panicum laxum | NA | Shadegro |

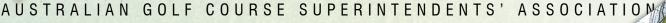
TABLE 2. CULTIVARS FOR ASSESSMENT IN SINGAPORE

| Species | Common Name | Variety |
|-------------------------|-----------------------|-----------------------|
| Cynodon dactylon | Green couch | OZ TUFF™ |
| Digitaria didactyla | QLD blue couch | Tropika |
| Digitaria didactyla | QLD blue couch | Aussiblue |
| Stenotaphrum secundatum | Buffalograss | Kings Pride |
| Stenotaphrum secundatum | Buffalograss | Palmetto™ |
| Paspalum vaginatum | Seashore paspalum | SeaDwarf™ |
| Paspalum vaginatum | Seashore paspalum | Aloha™ |
| Zoysia matrella | Manilagrass | Royal |
| Zoysia matrella | Manilagrass | Shadetuff ® |
| Zoysia matrella | Manilagrass | Emerald |
| Zoysia japonica | Japanese lawngrass | Palisades |
| Zoysia japonica | Japanese lawngrass | ZT-11 |
| Zoysia japonica | Japanese lawngrass | Empire™ |
| Axonopus compressus | Broadleaf carpetgrass | Broadleaf carpetgrass |
| Dactyloctenium australe | Sweet smothergrass | Sweet Smother |
| Eremochloa ophiuroides | Centipedegrass | Hammock™ |



Palmetto and Kings Pride buffalograss will be assessed as part of the trial

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Gundagai District Services Club NSW

Immortalised both in song and in verse, Gundagai is a classic Australian country town situated on the Murrumbidgee River. As well as being home of the famous 'Dog on the Tuckerbox' monument, the township also boasts the Bidgee Banks Golf Course which is part of the Gundagai District Services Club, the new home of second generation superintendent Adam Leech.

Superintendent: Adam Leech. Nickname: Leechy.

Age: 32.

Period as a superintendent: Five months. Period as an AGCSA member: Three years. Association involvement: AGCSA and TGAA (ACT).

Turf management career: Yowani Country Club (apprentice, 2 years). Completed apprenticeship at Queanbeyan Golf Club, stayed on as greenkeeper and eventually promoted to 2IC.

Turf management qualifications: Cert III in Horticulture (Turf) at CIT Weston, ACT.

Give us a bit about your background in turf management. How did you start out in the industry, why did you chose a career in turf management and take us through the path which led you to Gundagai? Working on a golf course came naturally to me after spending so much time working with my old man on weekends and school holidays growing up, so when it came to choose a career dad simply asked around if anyone had an apprenticeship going.

I took to it pretty well but after a couple of years I decided to go travelling up the east coast of Australia to see what else the world had to offer. Eventually, after trying out some other careers, I found myself looking to get back into turf and took an apprenticeship at Queanbeyan GC. I worked my way through the ranks to 2IC and after three years learning the ropes took on the superintendent job at Gundagai.

You are a second generation turfie with your father Wayde (currently superintendent at Noosa Springs Golf Club) having plied the trade for a number of years. Were you always destined for a career in turf management? Yeah, I think I was always going to be a turfie. I tried hard to find something else and almost wound up as a chef, but turf was always my calling. If there is one thing I have learned from my old man it is how to be professional in my approach to things. We regularly talk about chemicals and techniques we are using.

How have you found the jump up from assistant to superintendent? I was fortunate that my old boss (Jason Ferry, Queanbeyan GC) took it upon himself to teach me as much as he could about how to be a successful super, so the jump wasn't that big for me, it was more about applying what I already knew to my new situation.

The biggest challenge since starting here has been trying to implement programmes and structures with a lack of the needed resources. We spend so much time just trying to keep up with regular maintenance that finding time to make improvements and establish the course in my vision has been very difficult.



Give us an overview of the golf club and some of its unique characteristics? Built on the Murrumbidgee River flat and dissected by two creeks, water comes into play on almost every hole. You have to think your way around, with several opportunities to lay-up or go for it. The challenging layout is what brought me here as I believe it has potential to be one of NSW's great country courses due to how thoroughly enjoyable it is to play.

What are some of the unique features about the golf club from a turf management perspective? Is it an easy/hard facility to manage? Trying to balance the maintenance of the course against the two bowling greens and sporting fields (we also maintain two soccer/touch fields, one footy oval, one cricket oval and one hockey field) has been a challenge. The sheer size of the place makes it hard to manage with just three blokes. Planning ahead and finding more efficient ways to get the job done has been my first priority since taking over. Developing a solid annual programme for chemicals and fertilisers has been the first step.

What are some of the major challenges facing the club both from a turf management and club perspective? Like most clubs, recent changes to smoking, alcohol and gaming legislation have caused a great deal of financial stress on our club. These stresses are not unique to regional clubs, however, with a limited population to draw on, increasing revenue to meet these added costs is difficult. I'm hoping that by presenting the golf course at its best we can attract visitors to come on 'play and stay' packages and encourage the locals to play more as well.

Speaking of challenges, you have had an interesting start to your tenure there with the course being flooded. Outline what happened and what you have had to do to get the course back into play? Interesting is putting it mildly! Two weeks after I started (early December 2010) I was told that I needed to get the irrigation pump ready



to be pulled out as we were expecting flood waters to exceed the minor flood level. Three days later I was informed that I should remove the pump and consider evacuating the work shed as the flood level was likely to reach the shed floor. We got most of our gear out before the flood hit but our tees mower was broken down at the time and it got ruined as the flood waters eventually reached shoulder deep in the shed.

The entire course went under and as soon as the flood waters receded we got our pump back in and spent the next two days hosing silt off the greens. We got most of them done when, once again, I was told to take the pump out because floodwaters were due to peak again. Thankfully the second peak fell just short of getting over the greens.

The rest of the course was a complete mess with silt, logs and hay bales from nearby farms littering the place. Needless to say the recovery was long and difficult. We were unable to get machines on to many areas of the course for several weeks, so not only was everything growing like never before, but disease was running rampant in the greens and Opposite page: Built on the Murrumbidgee River flat and dissected by two creeks, water comes into play on almost every hole at Gundagai Golf Club

Above left: The Gundagai crew (from left) Geoffrey French (apprentice), Adam Leech (superintendent) and Neil Sheather (assistant superintendent)

Above right: The Gundagai course is shaped out of the native river flat soil. Greens have been reconstructed with a sandy loam

The build-up of salts and other elements in the soil due to the use of recycled water for irrigation is one of many challenges in managing the greens at Gundagai



REGIONAL PROFILE



Gundagai was hit hard by floodwaters during the past summer with the course going under twice there was little I could do about it. Eventually, with the help of many of the members, we got everything mowed down and reopened by the end of January.

The course is still recovering in many areas but for the most part everything is back to a reasonable standard. I really feel for the guys that are dealing with getting their courses back up after the recent floods and hope they are getting the same level of support from their members as I did from mine.

Outline any major course improvement works that have been completed or are currently in the pipeline? The greens have been completely resurfaced over the last couple years and are coming along really well. Currently, the club is doing some much needed refurbishments to the clubhouse, so no major course improvements are planned in the immediate future.

How is the golf club faring in the water management stakes? The course did struggle through the drought, but this season has seen well above average rainfall (hence the floods) so we are currently in good shape as far as water is concerned. Should things tighten up we will revert to very minimal water use on fairways as the natural couch is pretty hardy and can still provide a reasonable surface without irrigation.

The one product I couldn't manage my course without is... Primo – we couldn't keep up with the mowing if we didn't use it.

What are some pros and cons of being a regional superintendent? Life is pretty good out here. One of the biggest pros is the huge amount of support from the members and the general community and a lot of people devoted their spare time to help us recover from the recent floods. I guess the biggest con is not having the time and resources at work (I don't have a computer, in fact, I don't even have a phone in my office) to do my research and planning/ programming. I need to be very hands on at work so I'm forced to do the managerial side of things from home, outside work hours.

Do you have to be more resourceful as a regionalbased superintendent? You do need to be quite resourceful. You need to be very adaptable and try a few different things in order to get the job done. I've found that simple things like using solid tines for greens renovations can make life easier and enlisting the help of members that have useful skills, like builders or electricians, can be a big help.

Given your distance from the major metro areas, how do you make sure you keep abreast of the latest turf management techniques and methods? The AGCSA's e-newsletter The Cut is a great way to keep up to date and I regularly visit the AGCSA site and other sites like Pitchcare as well as chemical company sites like Syngenta.

AT A GLANCE - GUNDAGAI DISTRICT SERVICES CLUB

Where in the world is Gundagai? Gundagai is situated on the banks of the Murrumbidgee River in the Riverina district of NSW, about an hour east of Wagga Wagga and two hours west of Canberra.

Club specs: 18 hole golf course (5453m, par 70), bentgrass greens, Santa ana tees, common couch fairways. Two couchgrass bowling greens, two soccer/touch fields, one

footy oval, one cricket oval, one hockey field. Total 60 hectares of managed area.

Golf Club members: 200.

Annual number of rounds: 6000.

Major tournaments/events: Scott Fuller Shield, Southwest District Foursomes.

Staff structure: Adam Leech (superintendent), Neil Sheather (assistant superintendent), Geoffrey French (third year apprentice). Climate: Average maximum temperatures 22.4°C, average minimum 8.6°C. Average yearly rainfall 710mm.



Soil types: The golf course is basically shaped out of the native river flat soil. Greens have been reconstructed with a sandy loam.

Water sources and irrigation system: Recycled water is supplied from the town's sewage treatment works (onsite). The irrigation system comprises a Micro Master controller with Toro 2001 sprinklers.

Cutting heights: Greens 3.5mm, tees 10mm, fairways 18mm, rough 50mm.

Renovations: We have only undertaken a minor greens renovation since I started with small solid tines, but the

plan is to open them up with a major renovation in the spring and go back to the smaller solids in autumn.

Major disease pressures: Though not technically a disease, the build-up of salts and other elements in the soil due to using recycled water has the biggest effect on the health of the greens. Regular applications of calcium chloride have been an effective treatment.

How important are the relationships you have with other nearby course supers/trade? I'm yet to have much contact with other nearby courses. The two nearest courses also have new supers so we are all just settling in at the moment. Maintaining a good relationship with my old boss Jason Ferry at Queanbeyan has been vital and he has leant me some equipment. It's good to be able to call him and discuss ideas that I have.

What are some of the more unusual requests/ things you have had to do as a superintendent of a country course? Walking knee-deep through floodwaters to get to greens so we could clean the silt off them was certainly something different.

What have you got in your shed and what's on your wish list?

- Toro 3250-D greens mower;
- Jacobsen GK IV tees mower;
- Toro 6500-D fairway mower; and
- Lastec 3373 and Toro 328-D rough mowers.

Having to mow the ovals as well as the golf course, our rough mowers really have to work hard. If I could, I would get a 4000-D or similar wide area mower to get the job done faster.

Do you have any interesting pieces of machinery which have been manufactured out of necessity or any old pieces of equipment that you keep alive? We had an old bowling green boom sprayer but the pump was shot. I put an electric pump and small car battery on it and now we use it to Tupersan our green edges.

Most pleasing/rewarding moment during your short time as Gundagai superintendent? We just held a fundraiser to help replace our ruined tees mower and recover some of the revenue we lost due to the floods. It was very pleasing to hear both the locals and visitors saying the course is the best it has been in a very long time.

OFF THE COURSE - ADAM LEECH

Family: Wife Joanne, children Jaedon and Chloe.

Any unusual hobbies/past-times away from turf? I used to DJ at nightclubs and parties, but I've given that up since starting at Gundy.

Favourite sporting team? Go the Dragons!

What book are you reading now? Bad Luck and Trouble by Lee Child. Golf handicap? 13.

Favourite golfer? Still Tiger.

Three golf courses that you would like most to visit and why? Pebble Beach is supposed to be spectacular. I want to play Barnbougle Dunes to experience real links golf right here in our country and I would like to see Doha in Qatar, a genuine oasis in the middle of the desert.

The best thing about Gundagai (aside from the golf club) is... the friendly people, because there is always someone to lend a hand.

What do you do to get away from it all? I'm actually taking up bowls...



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Remodelling of the 14th (below) and 15th (right) holes is part of a \$1.6 million course renewal project earmarked for Marysville Community Golf and Bowls Club



MARYSVILLE REDEVELOPMENT TO GIVE COURSE A NEW LEASE ON LIFE



arysville Community Golf and Bowls Club, which was ravaged by the Black Saturday bushfires in 2009, is set to be benefit from a multi-million dollar course and clubhouse redevelopment.

In a statement released in late February by Victorian Deputy Premier and Minister for Regional and Rural Development Peter Ryan, \$1.6 million has been earmarked for golf course renewal works, while a further \$2.5 million will be spent on a new clubhouse in order to provide a significant boost to the Marysville economy.

The golf course renewal works have been made possible through the State Government (\$400,000), the Bushfire Recovery Fund (\$600,000), the Victorian Bushfire Reconstruction and Recovery Authority (\$200,000) and philanthropic support secured through Andrew Fox (\$400,000).

The redevelopment aims to ensure the popular precinct becomes one of regional Victoria's key golfing destinations and is due to get underway later this year. The renewal works, developed through the provision of pro bono design services from Greg Norman Golf Course Design, include the remodelling of the 14th and 15th holes, a new tee complex on 16 and additional general course improvement works including new bunkers.

The Victorian Government has also contributed \$1 million from the Living Regions Living Suburbs (LRLS) Program towards a \$2.5 million clubhouse redevelopment that would ensure the local community and visitors to the area could access high quality sporting facilities.

Contributions to the clubhouse redevelopment were also made by the Victorian Bushfire Appeal Fund (\$1.2 million) and the Russell Crowe, Luc Longley and Coffs Harbour City Council Community Centre Appeal (\$300,000).

"The golf course renewal works, together with the clubhouse redevelopment, will provide a significant boost to the Marysville economy and ensure visitors have extra reason to spend time in Marysville all year round," Ryan said.

LETTER TO THE EDITOR

Dear Editor,

The recent floods in parts of Australia and the devastation to many golf courses has, I believe, highlighted the need for additional information and remedial techniques to counter this unwelcome occurrence. Some brief but helpful comments appeared in The Cut 27/1/11, quoting an article from Golf Queensland, however, it is my opinion that it is time to confront this problem head-on and the AGCSA is surely the organisation to lead appropriate investigations.

While many coastal courses now experience occasional flood-related problems – say once every two to 10 years on a few holes – chances are that this problem will become more prevalent and demanding in the near future. With many predictions of global warming and unstable weather extremes, at least being partially proven, it could be time to act. As well, these conditions not only apply to coastal courses but many which are inland where flooding of low flat areas seems to be on the increase.

The traditional 1:100 year flood contour, to separate residential development from other uses, is coming under closer scrutiny by land planners and others. Low land adjacent to water and not suitable for housing will always be attractive for golf course use, but more frequent inundation from say 1:2 to 1:10 year storms (as presently recorded) look likely to provide escalating problems.

I have been impressed in the past at the ingenuity shown by greenkeeping staff at a number of courses to get playable conditions asap after a flood and to save turf that looked pretty ordinary after inundation. I am sure superintendents at those courses, as well as those most recently affected, can put a package of information together that will likely have lasting benefit for the golf industry. While water and silt quality will vary for different floods, and even in the same catchment, I am sure there are some very practical solutions waiting to be shared. The timing couldn't be better for an associationled examination of the problem.

MIKE COOPER MIKE COOPER GOLF DESIGN, TASMANIA

Editor's Note – This letter was sent prior to ATM Vol 13.2 (March-April 2011) coming out. In that edition's cover story on the Queensland floods, it was highlighted that those superintendents who have had to reinstate their flood-damaged courses are compiling disaster management policies and procedures manuals to provide a future reference for not only their clubs but for the whole industry.



In 2006, the 18th hole on Congressional Country Club's Blue Course was reversed and converted into a 199m par three which now plays as the 10th

CONGRESSIONAL BLUE COURSE SET FOR OPEN TEST

hile many Australian superintendents will be descending on Adelaide for the 27th Australian Turfgrass Conference in mid-June, the world's best golfers will be teeing up for the second major of the year when Congressional Country Club hosts the US Open from 16-19 June.

This will be the first US Open the prestigious course, located in the US state of Maryland just outside of Washington DC, has hosted since 1997 and during that time the course has undergone a number of major changes to keep it up to speed with the requirements of 21st-century tournament golf.

Congressional, which most recently hosted the PGA Tour's AT&T National event from 2007-09, was originally designed by Devereux Emmet in 1924. The club's championship layout – the Blue Course – was revised by Robert Trent Jones in 1959 and was completely revamped 30 years later by his son Rees, at which time all greens, tees and bunkers were rebuilt. In addition, most of the fairways were re-graded in preparation for the 1997 US Open.

Since that major, Jones has further upgraded every hole and while the original corridors have for the most part been retained, the revised and expanded layout, which now stretches to 7568 yards (6920m), will present an entirely new array of challenges to US Open competitors.

The most significant change came in 2006 when the original par-three 18th hole was reversed and converted into the current par three 10th. From 218 yards (199m), the elevated tee gives players a sweeping view of a green positioned at the edge of a lake and protected by bunkers on its right and rear flanks. By making that change the course now finishes on what used to be the 17th hole.

In 2007, Jones returned to Congressional to make numerous modifications, including the addition of a new championship tee at the 6th, which means it will play as a 558-yard (510m) par five for the 2011 US Open (it played as a par four during the 1997 US Open). The change to a par five brings the total par for the 2011 US Open to 71.

In 2008, Jones was brought in to consult with the club for the rebuilding and reseeding of the greens. Following the completion of the 2009 AT&T National event, the course was closed and all greens were completely reconstructed to current USGA standards with particular attention paid to retaining the 1989 green contours.

Other more recent tweaks include the removal of bunkers in the landing area of the par-four 11th and shifting the fairway to the right to bring the stream into play. In addition, at the 16th hole, a par five that will play at 579 yards (529m) for the Open, the first landing area was completely re-bunkered to provide a set of strategic options. The left fairway bunkers were shifted farther out and angled into the fairway. An additional bunker was placed beyond the existing bunkers on the right. Last year, Jones also added a back tee on the 18th hole, pushing the finishing hole out to a dramatic 521-yard (476m) par four.

For Jones, known as "The Open Doctor" for the many courses he has redesigned in preparation for the national championship, the 2011 US Open at Congressional will be the 10th US Open to be held on a course he has reworked prior to the event. Other sites modified include The Country Club, Hazeltine, Baltusrol, Pinehurst No. 2, Bethpage Black and Torrey Pines South.

Editor's Note: Australian Justin Bradbury is currently working at Congressional and in ATM Volume 10.6 penned an article on the club and its course maintenance operations. The Blue Course's closing hole has been lengthened ahead of the 2011 US Open this June and now weighs in as a 476m par four



JACOBSEN FAIRWAY UNITS GO LIGHT 'N' EASY



acobsen's new light fairway mower range is now available in Australia and borrows some leading features off the Jacobsen Eclipse 322 greens mower which was launched at the Golf Industry Show in 2010.

The new light fairway mowers – the LF550 and LF570 – replace the LF-3400 and LF-3800 models and as well as retaining many of their predecessor's features they also include enhancements which Jacobsen claims improves functionality and reduce maintenance requirements.

Visually the biggest difference is the restyled hood, which mimics the design of the Eclipse 322, while under the hood the new LF550/570 take their lead from the electronics that have been tried and tested in the Eclipse.

A smooth uptake of power using the 'drive-by-wire' operation of the electronically controlled traction pedal is a feature of the new fairway units, which helps to prevent wheel spin. Gone is the parallel series hydraulic drive circuit, which is now replaced with a crossparallel system that provides excellent traction on slopes. In the event of a front wheel losing traction, the power (hydraulic fluid) is split and transferred to both rear wheels ensuring that three wheels are operating at all times.

A new braking system has been engineered with wet brakes integrated into the front wheel motors. These are maintenance-free and require no adjustment to linkages or cables. A rocker switch on the control arm applies the brakes when the engine is running and the brakes are applied automatically when the engine is turned off. The final feature of the braking system is The new Jacobsen LF 550/570 units replace the LF-3400 and LF-3800 models and borrow a number of enhancements that have been tried and tested in the Eclipse 322 greens mower

the electronic hill hold which applies the brakes automatically after it detects no input from the operator's foot pedal. The brakes are automatically released when the traction is depressed.

Other changes include steel tubing which has replaced many of the flexible hoses, while common hose lengths across the five reels results in fewer service parts. The front reel valve has been relocated away from the proximity of direct water spray and the backlap speed control valve is now more accessible. There is also now only one proximity switch on the machine.

The control panel built into the top of the hydraulic oil tank has been replaced with an Eclipse-style armrest control module that moves with the operator's seat when adjusted. The controls, including factory standard cruise control, are ergonomically placed for operator comfort and an LCD display provides real-time information including engine hours and temperature. If a problem is detected the LCD display provides simple text messages along with a warning alarm to notify the operator of the fault.

For the superintendent and technician there's a pin-protected maintenance mode which allows numerous functions to be adjusted and set. Maximum mow and travel speeds can be input, the cruise control enabled or disabled and there's a status screen that checks the functional operation of all electrical switches.

Retained from the previous models are the XP cutting units with 5" diameter cutting units with 7-blade reels and the 7" diameter units fitted with either 9- or 11-blade reels. A Kubota 35.5hp V1505E diesel engine is the standard power unit with an optional 44.2hp turbocharged unit also available. Due to the introduction of electronic hydro control, it is also possible to have more control of frequency of clip, with mowing speed controllable in increments of 0.2mph.

For more information contact Jacobsen's Australian distributors McIntosh & Son (WA), Godings (VIC), ProTurf Machinery (NSW) or KC Farm Equipment (QLD) or visit www. jacobsen.com.

BAYER PAYS TRIBUTE TO TURF

Tribute

Bayer Environmental Science is set to unveil its new sulphonylurea turf herbicide Tribute at the 27th Australian Turfgrass Conference Trade Exhibition in Adelaide in June. Tribute contains the active ingredient foramsulfuron and selectively removes unwanted cool-season grasses, such as crowsfoot, ryegrass and wintergrass and other annual perennial grasses from warm-season grasses.

After application, Tribute is absorbed by the foliage and translocated to the site-of-action in the growing points of the plant. The chemical inhibits the enzyme acetolactate synthase (ALS), which is critical in a plant's production of three key amino acids. It stops cell division and growth within hours of application. The first symptom is chlorosis, or yellowing of leaves, followed by death of the plant.

"Turf managers can use Tribute any time weeds, such as crowsfoot, are present," says Bayer's national sales manager Paul Conradt. "Tribute is an oil-dispersion suspension concentrate in a liquid formulation. Used on cool-season grasses, Tribute is 'turfgrass tolerant' and offers broad-spectrum weed control.

"Tribute can be used any time the temperature is warm enough. If using Tribute as a transition aid, applications are made in the spring. When using it to remove undesirable grasses in turf, Tribute can be applied any time the weeds are present. However, two or more applications of Tribute six to eight days apart may be needed to control some grasses."

Tribute is labelled for removing crowsfoot, wintergrass, ryegrass and other annual and perennial grasses from warm-season grasses such as couch.

Generally, Tribute will not track when used according to label directions, however, it must dry on the treated area before irrigation or rainfall occurs to avoid natural movement of the product or tracking by equipment or foot traffic. The label also specifies users should not use Tribute on warm-season turfgrass collars surrounding bentgrass greens.

Tribute, formulated as a 2.25 per cent SC liquid, is packaged in a one-litre container and is now available through local Bayer distributors. Visit http:// bayeres.com.au for more information.

NEW DRUMMUSTER SERVICE FOR MELBOURNE

Melbourne's golf and turf clubs now have a greater opportunity to take advantage of the drumMUSTER programme after a new pick-up service was launched in the region recently. An industry stewardship service established in late 1998, drumMUSTER is responsible for the collection and recycling of empty, cleaned chemical containers. E-Plastics will be taking care of pick-ups in the Melbourne metropolitan zone with a number of golf clubs already taking advantage of the service which also covers Geelong, Ballarat and Maryborough. To arrange a pick-up or for any further enquiries, contact Anthony Spiteri on 0421 218 905 or visit

MARKING NEW TERRITORY

www.drummuster.com.au.

An environmentally friendly line-marking system used by top English Premier League football and rugby clubs is making its mark in Australia.

Pitchmark provides a cost-effective system that can mark an average-sized soccer pitch with only one litre of Impact Eco paint. Impact Eco is a readyto-use paint that requires no additional water, which when combined with the Eco Pro Marker produces bright, durable and quick-drying lines resulting in financial and environmental savings for the user.

Developed by Mark Rodman, an engineer and groundsman who established Pitchmark, the Impact paint system was created to transform the system of diluting concentrates with water, resulting in a reduction in water use.



According to Keith Kent, head groundsman at England's premier rugby ground Twickenham, the Impact Eco system left no ghosting after cutting twice the following morning after application, with less paint used in marking out than current formulations used.

The Impact Eco system is now available in Australia after Pitchmark recently appointed Swancorp as exclusive distributor. For an invitation to one of Pitchmark's demonstrations in and around Brisbane, contact Mark Rodman on mark@ pitchmarkltd.com or 0403 543 874.

The Impact Eco line marking system is now available in Australia

INDUSTRY APPOINTMENTS, MOVEMENTS AND ANNOUNCEMENTS



PRICKETT HEADS UP RANSOMES JACOBSEN'S ASIA PACIFIC OPERATIONS

UK-based Ransomes Jacobsen has expanded its management territory within the Jacobsen group with the inclusion of the Asia Pacific (APAC) region. To accommodate this expansion the company has

announced that former sales director **Alan Prickett** has been appointed managing director, Asia Pacific, and will be based out of Singapore

Over the past 30 years, Prickett has gained extensive experience in both the retail and manufacturing sectors of the grounds care industry and joined the Jacobsen division of Textron UK in early 1997. Following the merger of Ransomes and Jacobsen in 1998, he was appointed UK retail branch manager and was subsequently promoted to the role of UK sales manager and then sales director in late 2004. The appointment comes after the new Australian Jacobsen distributor network was unveiled at last year's Australian Turfgrass Conference on the Gold Coast.

TORO RESTRUCTURES BUSINESS UNITS

Toro Australia announced a restructure of its operations and personnel in March to further improve service for customers. The changes consolidate Toro's various commercial and domestic garden equipment and irrigation operations into two business units.

The newly created Water business unit will incorporate professional irrigation products, garden power equipment and home gardening equipment, including the Pope range of home garden products.

The new Equipment business unit will market and distribute golf course, sports field and grounds, construction and consumer equipment. Laurence Bingham will manage the new Water unit while Cameron Russell will head up the Equipment unit.

Toro Australia director Tim Emery says the changes would further streamline the company's business in Australia and provide a better overall service for dealers, suppliers and consumers.



MORRIS ON THE MOVE

Simplot Proline has appointed **Joshua Morris** as territory manager based out of its Queensland office.

Morris has a background in sportsfields and cricket wickets and has worked at facilities such

Morris as The Gabba and the Anglican Church Grammar School (Churchie) in Brisbane. Morris will service the Brisbane and wide bay areas and can be contacted on 0488 760 141 or Joshua. Morris@simplot.com.au.

CITYWIDE ACQUIRES STERLING GROUP

Citywide Service Solutions announced in early March that it had purchased New South Wales-based open space services company **Sterling Group Services**.

The acquisition complements Citywide's existing New South Wales open space operations, providing the company with exposure to new growth opportunities in the highly competitive New South Wales open space market.

Established in 1975, Sterling has grown to provide employment to 80 skilled staff and services more than 130 clients across education, retail, health and various commercial sectors. Notable clients include the University of Western Sydney.

RUSSELL REUNITES

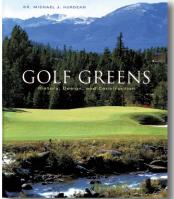


Former Barwon Heads Golf Club assistant superintendent **Michael Russell** has been appointed as new territory manager for Globe in Victoria. In doing so Russell will reunite with his former Barwon Heads boss of six years **Peter Frewin** who made

the move across to Globe in 2009 and is now Globe's manager for Victoria and Tasmania.

Russell, who will focus on Globe's council clients, started his new posting in the second week of May and is based out of the Oakleigh branch. He can be contacted on 0400 056 461.

DAGCSA



Golf Greens: History, Design and Construction

By Dr Michael J. Hurdzan Wiley, 2004

hose golf course superintendents who have an appreciation of golf course design will be well versed with the philosophies of US-based course architect Michael Hurdzan.

Over the past four decades Hurdzan has become one of the more prominent and respected members of the course architecture community and has a number of books to his credit, including the best-selling Golf Course Architecture: Design, Construction and Restoration.

In 2004 Hurdzan published Golf Greens: History, Design and Construction, which brings together observations and experiences from Hurdzan's many years spent on the ground. Comprising nine chapters and reaching some 330 pages in length, this hardcover book looks at:

- The design and construction of push-up, USGA and California spec greens;
- Guidelines for determining the best construction methods;
- Turfgrass selection;
- How to use design to make greens fast or slow to match players and course expectations as well as provide a foundation for agronomically sound maintenance practices;
- Cultural and physiological stresses, rapid growin procedures, biotic problems and physical soil test results

Perhaps the most interesting part of the book, aside from the fascinating opening chapter which delves into the history and evolution of the golf green, is the concluding chapter where Hurdzan recounts some of his personal experiences building golf greens and ruminates about the future direction of green design and management.

Golf Greens: History, Design and Construction is now available through the AGCSA Bookshop and AGCSA members can purchase a copy for \$120 (non-members \$139).

ALSO CURRENTLY AVAILABLE THROUGH THE AGCSA BOOKSHOP....



Tournament Management: A Guide to Preparing a Golf Course for Competition By John Miller, Wiley 2009

Written for all superintendents and greenkeepers, this 200-page hardcover book addresses the needs and challenges faced in planning and managing golf tournaments. The book looks at evaluating staffing needs, implementing effective agronomic programmes, preparing playing surfaces, and dealing with issues before, during and after tournaments.

AGCSA members: \$105 Non-members: \$120

Sportsfields: Design, Construction and Maintenance (2nd Ed.) By James Puhalla, Jeffrey Krans

and J. Michael Goatley Jnr, Wiley 2010 A versatile 'how-to' guide, the second edition of the US Sports Turf Managers Association's publication suggests solutions to common field problems that are not only helpful for professional sports turf practitioners, but also for park and recreation professionals, school curators and designers. Fully updated, the 515-page book looks at all the essential topics including turfgrass and soil science, field quality control, ground assessments, as well as new chapters on environmental stewardship and resource conservation. AGCSA members: \$114 Non-members: \$130 ECOLOGICAL BCOLOgical Golf Course Management By Paul Sachs and Richard Luff, Wiley 2002

This 200-page book explores the vast array of ecological golf course management principles and examines biological and botanical pest controls, plant stress management, compost production and use, natural disease suppressants, biological fertility management, soil, leaf tissue and water analysis, and the ecological impact of conventional pesticides and cultural practices.

AGCSA members: \$97 Non-members: \$110

Turfgrass Biology, Genetics and Breeding

Edited by Michael Casler and Ronny Duncan, Wiley 2003

This 370-page book presents a comprehensive study of the various types of turfgrass, their genetic and biological makeup and the specifics of when, how, where and why each species was adapted for use. An invaluable resource for scientists, researchers, turfgrass professionals and turf management students, the book provides the basic biological explanations behind adaptation, genetics and breeding of turfgrasses.

AGCSA members: \$144 Non-members: \$167



The Superintendent's Guide to Controlling Putting Green Speed By Dr Thomas Nikolai, Wiley 2005

Thom Nikolai, who was a keynote presenter at the 2010 Australian Turfgrass Conference, dedicates this book to "all superintendents who have heard that their greens were too fast or too slow – on the same day". Nikolai looks at problems associated with green speed before delving into the history of measuring green speed and the development of the Stimpmeter. After chapters on climate, putting green rootzones and turfgrass species, Nikolai then looks at cultural practices and their impact on green speed.

AGCSA members: \$99 Non-members: \$125

POA ANNUA and Control of Annual Bluegrass By J. Vargas and A. Turgeon, Wiley 2004

This book examines *Poa annua* as both a weed and a desirable turfgrass species. Billed by the authors as the most comprehensive guide to controlling and cultivating annual bluegrass, the book contains a wealth of practical information for controlling and maintaining healthy growth of this diverse species while also detailing the anatomy, morphology and physiology of the species. AGCSA members: \$104 Non-members: \$119

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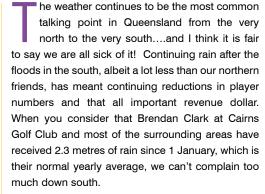
U3 9548 8600 Fax. 03 9548 8622 Email: andrew@agcsa.com.au; jgeary@agcsa.cor Suite 1, Monash Corporate Centre, 752 Blackburn Road, Clayton 3168 Vic GCSAQ



Above: A patch disease, pictured here at Sea Temple Golf Club in Port Douglas, has been affecting a number of clubs in Queensland. Chemical and cultural treatment thus far have had no effect

Top right: The patch disease has been observed on older Tifdwarf greens, new 328 greens and even Novatek

Below: The GCSAQ held a field day at Wolston Park in April. Pictured is the 1st hole where flood waters in January peaked above the canopy of the palms



Brendan and his fellow supers in the tropics are doing a great job organising field days and education days with the support of many of our member suppliers. The GCSAQ is also helping out wherever we can and it's a shame that more members down south aren't as active in their association.

The boys up north are also dealing with a mystery disease which has been diagnosed as Take all patch with all the usual symptoms present, but chemical and cultural treatment thus far have had no effect. The disease has been observed on older Tifdwarf greens, quite new 328 greens and even Sea Temple's new Novatek greens (see photos above). Dr Percy Wong has inspected the disease and has found there to be an unidentified fungus affecting the root system. The GCSAQ together





with a number of FNQ clubs are hopefully going to provide enough funding for a pathogenicity test to be conducted.

Brendan has certainly been busy of late and as well as finalising plans for his new maintenance shed, 9th green and 1st tee, he also managed to find time to finally tie the knot with Kylie after 11 years! Justin Kelly at Gainsborough Greens also reports that he has plenty keeping him and the crew busy with Mirvac's course development in full swing. The first two new Ross Watson-designed holes were recently planted and will be in play by September. It is a huge development being undertaken at Gainsborough and Justin has the edict that 18 holes must be in play at all times which has certainly provided some challenges to date.

Back in April the GCSAQ held a day at Wolston Park Golf Club in Brisbane's west, one of the many clubs badly affected by the January floods. To look at the 1st fairway and think that the river could rise to a level where the palm fronds were submerged is just mind blowing. It is an absolute credit to the superintendents and their staff at these clubs as they have really been to hell and back and all seemed to have stayed positive throughout.

The day was not attended as well as we would have liked, but the request to bring along a drum of product had a great response and the donated goods were greatly appreciated, as was John Deere sponsoring the Nuturf cooked lunch and TurfForce donating four tickets to a Titans game.

There will be a ChemClear QLD collection starting in June so if any clubs have any unwanted or out of date chemicals they would like to dispose of you need to register prior to the collection. Simply go to www.chemclear.com.au and click on bookings down the left hand side to register.

And finally, an advance notice for this year's bus trip which will take place on 2-4 September (please note the change in days to a Friday departure). Byron Bay and surrounding areas is the destination so put some time aside to join your peers.

PETER LONERGAN PRESIDENT, GCSAQ

GCSAWA@

D espite record rainfall in the east, Perth is still experiencing a record dry spell. At the time of writing this in mid-April Perth has had just 33mm since 1 January and the longest run of days over 30 degrees, officially making it the hottest and driest summer on record (see panel right for just a taste of what we have had to deal with). It's no surprise then that the majority of golf courses are breaking their own water usage records with bore water use exceeding their licenses. A big concern now is what the Department of Water might do once water submissions are sent in.

With many clubs worried about future water allocations and usage, the GCSAWA initiated a seminar with the Department of Water at Lake Karrinyup Country Club. This was organised so the Department could inform GCSAWA members of the current situation with regards to potable and bore water and also so our members could inform them of their situation.

The main messages from the Department of Water were that dams are currently at their lowest levels on record and aquifer levels are in a similar state. In addition, we were also told that no more water is available to add onto our licenses and that a water trading scheme with neighbours is our only option if we needed more.

The question was also asked what penalties would be handed out if clubs went over their license allocations. The Department's response was that these situations will be assessed on an individual basis and some leniency may be given depending on what contingencies clubs had in place and whether they could demonstrate best practice in regards to water usage.

The other feature of the seminar was the discussion on setting up a Water Wise programme for golf courses to help build a good relationship between with the Department of Water. The majority in attendance voted for the programme with a subcommittee to be formed to progress towards finding a suitable set of auditing guidelines. It was also agreed that most clubs were willing to send their irrigation technicians and assistant superintendents to a two-day training course to be organised by the GCSAWA and the irrigation association over the winter months on self-auditing of golf course irrigation systems.

Elsewhere, the GCSAWA committee has finalised the 2011 Margaret River Conference to be held at The Margaret River Hotel. Glenn Cross and the committee have put together a great three-day programme with some well known Australian supers attending to give some insight into their operations, as well as some WA boys showing us what they have been up to. The conference will be held from 7-10 August and I hope as many people can attend as this is one of the best state conferences around. A big thank you to Rain Bird Australia for being the major sponsor again and I would also like to thank Simplot and Toro for their second tier sponsorship.

The Margaret River conference will also include our AGM where I will be standing down as president. I feel four years is long enough and it's time for someone else to fill this position. It has been a great experience that I have enjoyed throughout my term and I am confident that one of the other committeemen will fill this position with ease. I would like to thank the committee, both past and present, for the commitment and enthusiasm and the membership base for their support. I will remain on committee and continue with the Divots magazine and also provide input where needed.

And finally, as you may know the committee has been discussing for some time changing the GCSAWA logo. Speaking with Neil Adams, who helped design the original logo back in the early days of the association, he agreed we should move on and as a result we have come up with a new design which will be voted on at the AGM. See you in Adelaide.

DARREN WILSON PRESIDENT, GCSAWA

FEELING THE HEAT...

Dec '10: Mean temp 29.3°C, 17.4mm rainfall. Mean for the last 11 days of Dec 2010 was 34°C.

Jan '11: Mean temp 32.5°C, 30.2mm rainfall. Twenty days over 30°C.

Feb '11: Mean temp 34.1°C, 0.4mm rainfall (just two days officially under 30°C (1 Feb – 29.8°C and 5 Feb – 29.6°C). Twenty-seven consecutive days from Feb 6 over 30°C. From 21-28 Feb max temps no lower than 35°C.

Mar '11: Mean temp 31.9°C, 0.0mm rainfall. Twenty-two days over 30°C. Lowest maximum 26.6°C

Apr '11: Mean temp 27.3°C, 19.4mm rainfall.

Source: Bureau of Meteorology

write this report in unfortunate circumstances with our president Brett Chivers being made redundant as superintendent at Keysborough Golf Club due to financial constraints. Brett has supported the industry and the VGCSA for many years, and with his wife Stella have been the driving force behind the improvements in the publication of our quarterly newsletter. Thanks Brett for all you have done for the VGCSA and the time you have spent on the committee.

/GCSA 🗅

The first VGCSA education meeting of the year was held on 21 February at the MCG. Melbourne Cricket Club arenas operation manager Cameron Hodgkins kicked off the meeting with a brief presentation on the management of this fantastic facility.

It was interesting to note that Cameron is obtaining staff with golf course backgrounds to conduct their 'greenkeeping' duties. Maintenance, such as regular aeration and dusting has provided an improved playing surface throughout the year. Strangely, most of the cricket season maintenance is geared towards preparation of the playing surface for the next AFL season. Other speakers on the day included Terry Woodcock who gave an interesting presentation on fungicides and John Neylan who highlighted to us the damage caused by the flood and cyclone affected areas of Queensland. Thank you to Nuturf for their presentation and for sponsoring the day.

The VGCSA country meeting was hosted by Ballarat Golf Club at the start of April. The meeting had a field day theme to it which has received positive feedback from members. Course superintendent Jeff Powell had the course in great condition and was able to take us for a course inspection. Thank you to the eight sponsors who gave presentations on the day.

Our AGM will be held at Victoria Golf Club on 27 May. This is a great opportunity to play golf at one of the country's elite clubs. The Victorian Apprentice of the Year will be announced on the day and on behalf of the committee I wish the finalists all the very best.

STEVEN HEWITT INTERIM PRESIDENT, VGCSA

NSWGCSA 🗭



Vince Church Award winner Roger Chaffey from Manly Golf Club (middle) with fellow NSWGCSA Graduate of the Year finalists t is with great pride that I write my first report as NSWGCSA president. It's an honour to step into this role and fill the shoes of previous superintendents who have developed our association into a successfully entity.

My appointment follows the resignation of Craig Wright who informed the NSWGCSA Board at our February meeting at Newcastle Golf Club that he would be leaving Cabramatta Golf Club and could no longer hold the position as president. Craig had served as a director since 2005 before becoming president in 2008. The NSWGCSA board would like to thank Craig for his time and commitment as a director and wishes him and his family all the best in their future endeavours.

Now that summer is finally finished and green renovations are complete, we can all reflect on what

has been an unusual summer. For most of us it was dry and hot with little or no rain for 29 days straight, whereas clubs on the North Coast experienced rainfall of up to 2000mm for the second year in a row, as well as ERI disease out of control. The only region to experience somewhat normal weather patterns was the South Coast with good rainfall and moderate temperatures. Maybe we can all move south for next summer!

On 11 April the Board held interviews at Northbridge Golf Club for the NSWGCSA Graduate of the Year Award (Vince Church Award). Once again it was a close run race with the eventual winner being Roger Chaffey from Manly Golf Club. Other finalists were Liam Harper (Cammeray GC), Matthew Kellond (Moss Vale GC), Lincoln Stace (Lithgow GC) and David Snell (Armidale GC). Roger attended Kurri Kurri TAFE in the block release format and achieved a distinguished pass and will be a good ambassador for the NSWGCSA in the final of the AGCSA Graduate of the Year Award.

Golf NSW has recently confirmed the NSW Open this year and for the next three years will move from The Vintage Golf Club to Newcastle Golf Club. Good luck to course superintendent Matthew Goodbun.

Upcoming events include the Rube Walkerden Trophy at Concord Golf Club on 2 May and the Hunter Valley Ambrose at Cypress Lakes on 30 May.

CRAIG MOLLOY PRESIDENT, NSWGCSA

TGAA VIC 🕸

he period leading up to the 2011 football season has been particularly wet with dam levels in water catchments on the rise. I am sure most of our members will be finding time for a break after what has been another hectic beginning to a winter sports season.

The TGAA VIC 2011 Regional Seminar was held at the heritage-listed Queen Elizabeth Oval in Bendigo and was well attended by 70 delegates from the surrounding districts and those who travelled from Melbourne. Speakers included Peter Fitzgerald about irrigation auditing, Paul Jackson on environmental sustainability and turfgrass nutrition and John Shannon on cricket pitch issues, while Allan Reid informed everyone about the drumMUSTER programme. Roger Barbetti also gave a talk on renovations to the Queen Elizabeth Oval and the \$14 million development of the Epsom Huntly Reserve.

Members should keep 20 July free when we host the annual Cricket Wicket Seminar at the MCG. This year we have Rodney Hogg as our special guest speaker who will compliment an interesting line-up of speakers. I am sure there will be some thought-provoking presentations and the chance to catch up with colleagues throughout the day.

Another date to put in your diary is the Summer Seminar, which has been replaced this year with a trade day on 23 November at Wesley College (Glen Waverley). We will be holding a combined day with the Turf Producers Association, Irrigation Australia, Storm Water Association and Australian Seed Federation. It's going to be a jam packed day full of presentations, practical demonstrations and a bus tour to see the latest rye seed trials at Mt Scopus Memorial College.

Finally, the TGAA now has a National Sports Turf Graduate Award. State finalists met in Sydney in April for interviews and on behalf of the TGAA VIC committee we congratulate Victoria's inaugural finalist Rebecca Dynon from Tatura/Shepparton Racing Club. Rebecca will now attend the AGCSA conference in Adelaide where the national winner will be named.

DANNY EDMUNDS SECRETARY, TGAA VIC

t has been an exciting time for the sports turf industry with the running of the inaugural National Sports Turf Graduate Award. Thanks to the support and commitment from Toro Australia we are very proud to be part of this award. It is great to acknowledge the hard working students as they complete their apprenticeships.

On 7 April finalists from the various state STA and TGAA were interviewed in Sydney. The most rewarding part of the process was witnessing the high calibre of those coming through and the future of the sports turf industry looks to be in great hands.

All state finalists will attend the 27th Australian Turfgrass Conference in Adelaide where the winner will be announced (the full list of finalists is presented in the conference guide, page 45). The successful person will then get to experience an amazing trip

NZGCSA

n behalf of all our members, we thank the

AGCSA for allowing us to keep our members, along with those of you in Australia, informed about what has been happening over here.

As you will no doubt be aware, Mother Nature has dished out a fair serve to those in the Canterbury region in recent times and like all in the industry our thoughts immediately went to our colleagues when the devastating 22 February earthquake struck. To be hit with another natural disaster while still in the process of cleaning up after the first one back in September is just incomprehensible. While the damage to various golf courses and sports facilities has varied, the impact these events have had on the personal and professional lives of our colleagues is something that those of us on the periphery can only begin to imagine.

Following the earthquake, the governance board of the 2011 NZ Turf Conference met with some urgency about the future of this year's event going ahead. Fortunately they have been able to transfer the conference to Hamilton and retain the same dates. The support of our trade partners in this upheaval, along with the speakers, shows the spirit that encompasses our industry.

Some minor changes to the golf programme have been excellently dealt with by our representative Grant Bunting. His drive and passion for ensuring the NZGCSA is at the forefront of this conference for our members has had its challenges when dealing with some of the other sectors and seems to be becoming more frustrating every time such 'industry' events take place. Like all of our potential revenue streams, the NZGCSA board sees it is imperative that we continue to review and explore new possibilities for the continued success and progress of our association and its members.

to the US to broaden their education of the industry. This award wouldn't be possible without the great support of Toro Australia.

At the time of print we were preparing for the Turf Alive seminar on 17 May. This is an exciting time as STA NSW joins forces with NSW BGA and NSW TGA to bring this event to NSW turf managers. We are all focused on one goal - to educate, unite and promote the turf industry.

Other STA NSW events coming up include the annual workshop 'Alternative methods of pest control' on 6 July and the Regional Seminar at Kurri Kurri TAFE on 16 August which will focus on turf renovation practices. For more details visit www. sportsturf.asn.au

CHRIS CHAPMAN PRESIDENT. STA NSW

On the subject of change, this will be my final report as NZGCSA president as I will not be seeking re-election at this year's AGM. Having now served four terms, following on from involvement as a regional delegate and board member that has covered 13 years, it is time to move aside. We have an enthusiastic board and quality people on the periphery who need to be encouraged, so I leave this role in some capable hands.

I cannot thank the AGCSA, in particular John Neylan and the Board, enough for its support of our association throughout my time as president. The AGCSA has always been willing to offer advice and direction which we are most grateful for. I look forward to continuing the friendships that have been made over the last few years.

Finally, the rebranding and logo change (see above) of the NZGCSA has now been confirmed and will be officially launched at the NZ conference.

ON THE MOVE

A quick wrap up of major course maintenance staff movements from around the country ...

Andy Blacker: From superintendent at Adelaide Shores, SA to superintendent at Port Lincoln Golf Club, SA.

Simon Child: From superintendent Mount Coolum GC, QLD to senior greenkeeper Hyatt Regency Coolum, QLD.

Danny Hack: From assistant superintendent at RACV Healesville Country Club to superintendent Bairnsdale GC, VIC (replaces Noel Williamson).

Steve Johannessen: From Evans Head, NSW to assistant superintendent at Rowes Bay GC in Townsville, QLD.

Nick Launer: From Royal Melbourne GC, VIC to assistant superintendent at Murray Downs G&CC, VIC.

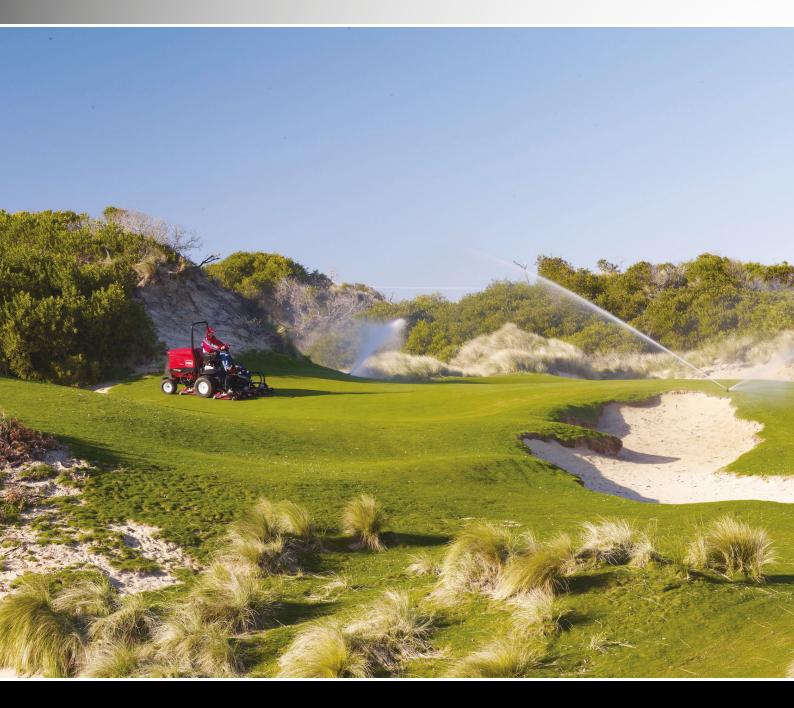
Adam Shields: From Casino GC, NSW to assistant superintendent at Longyard GC, Tamworth, NSW.

Brad Sim: Recently appointed assistant superintendent at The Australian GC, NSW after working past 10 years at courses in New Zealand, UK and Dubai.



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