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VOLUME 24.2 MAR-APR 2022

MANAGEMENT JOURNAL



The long road back

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Editorial

Brett Robinson
Office: (03) 9548 8600
Mobile: 0434 144 779
Email: brett@agcsa.com.au

Advertising

Pam Irvine
Office: (03) 9548 8600
Mobile: 0402 069 489
Email: pam@agcsa.com.au

Art Direction & Design

Jo Corne

Printed By

Southern Impact Pty Ltd



Australian
Sports Turf Managers
Association

Suite 1, Monash Corporate Centre
752 Blackburn Road, Clayton, VIC 3168
P: (03) 9548 8600 F: (03) 9548 8622
E: admin@agcsa.com.au
W: www.agcsa.com.au
ABN 96 053 205 888

ASTMA Board

Peter Loneragan (president), Chris Burgess (treasurer),
David Thomson, Ben Tilley and Damian Hough

Chief Executive Officer

Mark Unwin
Office: (03) 9548 8600
Mobile: 0438 320 919
E: mark@agcsa.com.au

Membership

Allison Jenkins
E: admin@agcsa.com.au

Accounts

Philip Horsburgh
E: philip@agcsa.com.au

Events and Education

Simone Staples
E: simone@agcsa.com.au
Pam Irvine
E: pam@agcsa.com.au

AGCSATech

Bruce Macphee (Senior Agronomist)
E: bruce@agcsa.com.au
Tim Fankhauser (Agronomist)
E: tim@agcsa.com.au

Social Media

Keally Nankervis
E: keally@agcsa.com.au

www.facebook.com/TheASTMA

www.linkedin.com

www.instagram.com/the_astma

@TheASTMA

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COVER STORY
THE LONG ROAD BACK

10

In scenes reminiscent of the devastation in 2011, turf facilities in south east Queensland and northern New South Wales were again smashed by unprecedented floods in late February and early March. Huge rainfall totals saw the Brisbane, Logan, Nerang and Tweed rivers, as well as the region’s network of creeks, inundate golf courses and turf facilities. Among some of those worst affected were Indooroopilly, Brisbane and Meadowbrook golf clubs, while multiple others also experienced their worst flooding in club history. ATM editor Brett Robinson reports on the long road back for superintendents and their teams.

Cover Main Image: Indooroopilly Golf Club shortly after flood waters peaked. **Insets (from left):** The Indooroopilly maintenance facility under water; removing silt off greens at Brisbane Golf Club; Meadowbrook Golf Club’s washed out seashore paspalum green. **Photos:** Dean Hardman, David Mason and Brett Robinson.



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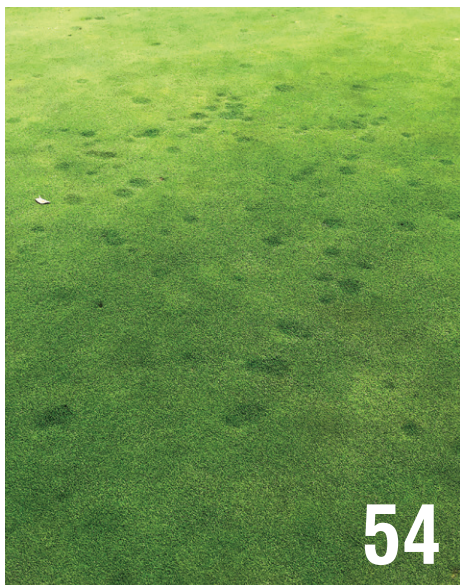
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Putting staff first

As I penned in the last edition, Australian superintendents and turf managers continue to be placed under enormous pressure across multiple facets of their operations. Whether it's attracting and retaining staff, dealing with the many issues that COVID presents, through to rising costs of fuel and raw materials, it is a challenging time for all.

Then, just to further underline the overwhelming nature of the job, in March we witnessed devastating floods again smash the length of the eastern seaboard. Take for instance a facility like Meadowbrook Golf Club, a privately-owned 27-hole facility just south of Brisbane. Superintendent Luke Helm, one of the most passionate supers you'll come across, has had to reinstate his facility an unbelievable 10 times in the past 14 months. Read on in this edition as we take an extensive look at the flood impacts and how facilities have rallied to get back up and operational.

As Australian superintendents and turf managers were reinstating their facilities in March, half a world away their UK counterparts gathered in Harrogate for the British and International Greenkeeping Association's Turf Management Exhibition (BTME), the equivalent of our annual conference. It was the first time in over two years that the UK industry had converged due to COVID and, after hearing of the many challenges that their members were facing, BIGGA chief executive Jim Croxton made an impassioned plea to the wider golf industry. Just as Australia has experienced, the UK has recorded a massive growth in golf participation and membership in recent times and as such Croxton said it was now up to the game of golf to reinvest in golf club staff who make the game possible.

"When the pandemic hit, the industry came together to form a 'wartime cabinet' that supported the game through extremes," stated Croxton. "With fewer high-profile crises facing the sport, the emergency footing has abated. However, there remain a number of serious challenges, such as the supply chain issues for machinery and equipment and the cost and availability of water, fuel and raw materials such as fertilisers and sands. The labour crisis is another major issue that must be addressed to keep the sport healthy.

"For many years the main focus of the game has been growing the number of people playing golf. The pandemic effectively gave us two million extra golfers in the UK and that has brought significant additional revenue into the game. It's now time for clubs to focus on the importance of their workforce, without whom the sport would wither on the vine...

"Our members continue to rise to the challenge that managing a golf course in the 21st Century brings. Today's greenkeepers are better educated than ever before, overcoming the challenges they face each day to present stunning golf courses for their members to enjoy. Greenkeepers have held up their end of the bargain and now it is time for the golf industry to do the same."

Croxton went on to highlight key areas of concern including the conditions that some greenkeepers were expected to work in, meagre salaries (particularly those at the lower end of the wage spectrum and especially in line with the rising costs of living), as well as the incredibly high expectations placed upon greenkeepers and the stress and mental health problems which can often result. Sounds familiar doesn't it and just goes to reinforce that these are global issues for our profession and not a battle we here in Australia are confronting alone.

As Croxton summed up: "Greenkeeping is a wonderful profession with many physical and mental health benefits and a wide range of career opportunities. It's time for golf clubs to put their staff first, invest in their wellbeing and for a framework to be put in place that ensures every facility in the country treats their staff in a respectful and appropriate manner."

With the Australian industry set to gather in Melbourne this June – the ASTMA combining with Golf Management Australia for the first time in the event's history – perhaps the time has never been better for these sorts of issues to be firmly put on the table. Enjoy the read...



Brett Robinson, Editor



Resilience and recovery on display as floods hit hard

As this issue of Australian Turfgrass Management Journal goes to print, many turf managers continue to experience a devastating start to 2022. Extreme rainfall events have led to repeated widespread flooding across large parts of south east Queensland and northern New South Wales, while those on the coast further south haven't been spared the impacts either. Our thoughts go out to the crews dealing with these events, especially those who are having to deal with multiple flood events in as many months.

ASTMA editor **Brett Robinson** visited a number of clubs in Brisbane and the Gold Coast in early March to get an understanding of the impact and widespread nature of the challenges facing superintendents and turf managers. The images and stories from those visits, which are featured prominently in this edition, tell a tremendous story – the challenges faced in the wake of the flood waters receding, the incredible resilience of turf management teams when faced with such adversity and the generous support of the industry to assist colleagues in a time of need.

AGCSATech agronomists **Bruce Macphee** and **Tim Fankhauser** have also been working through assistance calls and advice for members who have been impacted. They have also published information to assist flood-affected facilities get their turf surfaces back into play as soon as possible in addition to highlighting some of the likely long-term implications floods can have agronomically. Recovering from such events is a mammoth undertaking and I encourage clubs and sports turf managers in need of assistance or advice relating to available support measures to contact the association. We are here to help.

CONFERENCE AND EDUCATION

Looking ahead, the Australian Sports Turf Management Conference and Trade Exhibition in Melbourne (20-24 June) is well and truly



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taking shape. This year promises to be a leading event, with the ASTMA co-hosting in conjunction with Golf Management Australia (GMA). Early indications of the prominence of the event and approach to combine education and trade exhibitions is proving to be very popular. We have already seen a record number of Early Bird registrations for both sports turf managers and general managers, while the trade show has virtually sold out some four months ahead of the event.

The conference program this year features a range of local turf managers, industry experts, turf practitioners, updates and workshops relating to research and keynote speakers covering topics such as business management and health and wellbeing. Just recently we announced the first major keynote presenters including NRL supercoach **Craig Bellamy**, Paralympian **Dr Jessica Gallagher**, leadership and communication expert **Dr Louise Mahler** and social researcher and trend forecaster **Michael McQueen**.

Conference week kicks off on the Monday with the hosting of the Toro-sponsored ASTMA Golf Championship. We are delighted to be holding our premier golf event at Huntingdale Golf Club this year and wish to thank the club and long-serving superintendent **Michael Freeman** for their hospitality. The golf championship dovetails into that evening's Syngenta President's Dinner which

includes the National Turf Industry Awards. Nominations for the various award categories are currently open and I encourage all members to nominate those in the industry who they feel are worthy of recognition for their achievements.

Working through the awards, in particular the ASTMA Graduate of the Year nominations, consistently encourages me about the future of our industry, with a host of strong graduates regularly nominated by the state associations. These discussions, though, continue to highlight an area of concern in relation to the volume of apprentices being skilled and the challenges our industry faces in continuing to support, deliver and provide quality education.

Education remains a key priority for the association and supporting the requirement for training and access to developing skills in all areas of Australia. While there are some common issues nationally, there are localised issues and challenges that are prevalent within some states. We continue to work through supporting members and the industry and it is a priority we remain committed to advocate for.

The recent federal Budget announcements, specifically relating to the continued support for apprentices, was another piece of good news for the industry. The government announcing billions in funding to help tradies complete their apprenticeships and to reward employers for hiring them, will assist greatly in addressing the need to continue developing and filling apprenticeship positions across the industry. We continue to be challenged in workforce attrition and staff retention and an increase in the volume of apprenticeships remains a critical component to the long-term viability of the industry.

The association has engaged with the Department of Education, Skills and Employment over the past 18 months to ensure that sports turf management qualifications remain on the Australian Apprenticeship Priority List. Supported by our work on various state and federal apprenticeship advisory panels, we will continue this work to advocate for the retention of the sports turf management apprenticeship on this list as it is revised in the months ahead. We're hoping to have further announcements and updates in relation to this, and on support for education, at the conference in June.

Finally, it has been great to see the return of a number of state association events in recent months. I was fortunate to attend and present at the NSW assistant superintendent day as well as head across to the GCSAWA's Margaret River Conference. It was great to see members of the industry continuing their education and reconnecting with colleagues at these events which are so vital to the health of the industry. 🌱



PHOTO: DEAN HARDMAN/INDOORPILLY GC

Recovering from major flood events is a mammoth undertaking. It is important that sports turf managers reach out for advice and assistance relating to the available support measures that are in place

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Best on ground

ATM showcases some of the best social media images from around the industry in recent months.



INDOORROOPILLY GOLF CLUB

"Our dedicated course staff really do have the best views in the mornings..." (Despite weeks of cleaning up mud and silt after the March floods, Indoorroopilly Golf Club can still turn on a picture perfect autumnal morning, as photographed by assistant superintendent Dean Hardman.)

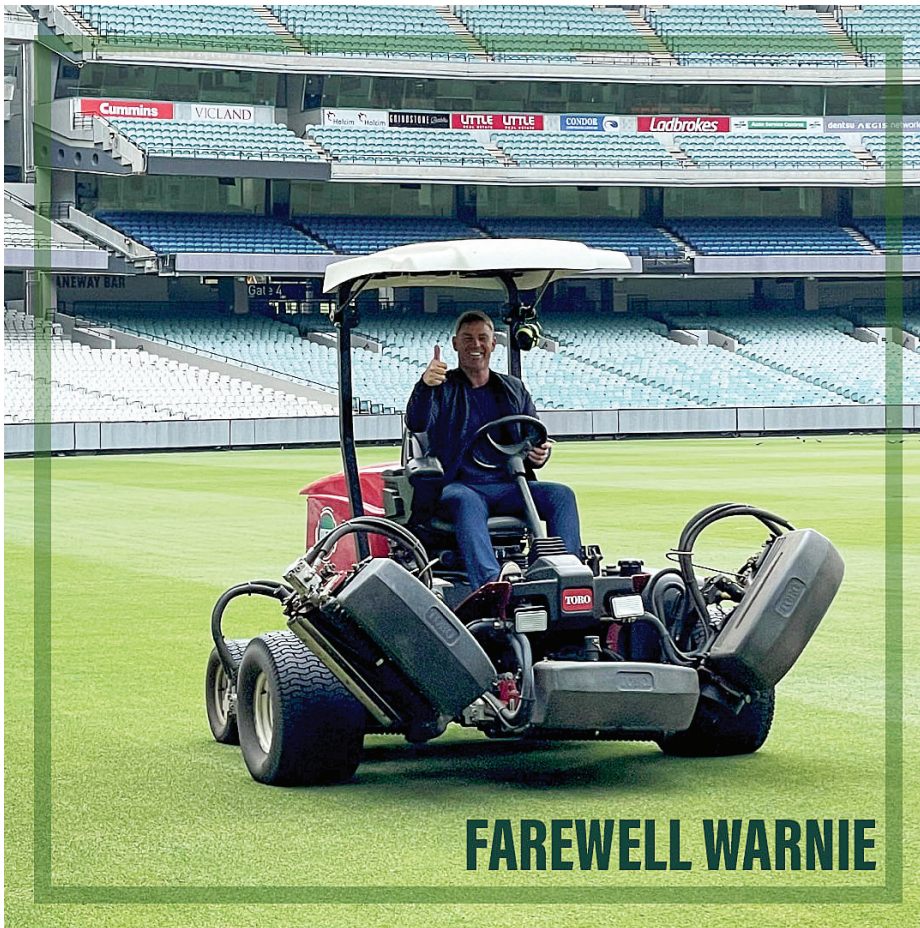


DAVID THOMSON

"A bit wet on the course today..." (Bermagui Country Club superintendent and ASTMA Board member David Thomson swaps his ute for a kayak to get around the course during the early March deluge.)

MIKE O'KEEFFE

"It was a crazy week at TPC Sawgrass. Our interns from Argentina, Mexico, Indonesia and Australia made huge sacrifices to be part of the team who will remember this week for ever. We are so proud of them." (Aussie greenkeepers Leighton Knowles, left, and Jack Hindmarsh, back row second from right, had a ringside seat for Cameron Smith's dramatic triumph at The Players Championship in mid-March.)



f MELBOURNE CRICKET GROUND

"Farewell Warnie". (The MCG, a stage where Shane Keith Warne mesmerised batsmen with his leg spin magic over many years, pays tribute in the days following his untimely death of a heart attack on 4 March. Warne's State Memorial Service was held at the MCG on 30 March where the Great Southern Stand was officially renamed the Shane Warne Stand in his honour. Vale Warnie.)



13TH BEACH GOLF LINKS

"We'd like to thank Steve Hewitt and our dedicated grounds maintenance team. Working from sunrise to dark every day this week, the Vic Open wouldn't have been possible without them." (The crew at 13th Beach get some deserved plaudits after another successful Vic Open.)



f SOUTH LISMORE BC

"The core of our club is strong, it may take time but we will get there in the end." (South Lismore Bowling Club was one of many impacted by the March floods, the club not only having to contend with mud and silt deposits on greens but cars as well.)



in MATHEW GOGGIN

"It's hard to believe that #7mb is only 25 mins outside of Hobart and seven mins from Hobart International Airport. A stunning canvas to work with..." (Construction has started on the new Seven Mile Beach course in Tasmania and looking at the site that architects Michael Clayton and Mike DeVries have to work with, it's no surprise there is talk of it being another world-class Apple Isle gem.)

FLOODS

The long road back

PHOTOS: DEAN HARDMAN AND BRETT ROBINSON



In scenes reminiscent of the devastation in 2011, turf facilities in south east Queensland and northern New South Wales were again smashed by unprecedented floods in late February and early March. Among some of those worst affected were Indooroopilly, Brisbane and Meadowbrook golf clubs, while multiple others experienced their worst flooding in club history. Over the next 20 pages ATM reports on the long road back for superintendents and their teams.



Around 40 per cent of the 36-hole Indooroopilly Golf Club in Brisbane went under during the recent floods. Pictured in the foreground is the cleaned-off green on Blue Course 5, while in the background a Ventrac removes caked on silt from Blue 2 fairway



It all happened so quickly. With rain still hammering down, as it had been for the previous 48 hours, at 6.30pm on Saturday 26 February, Ben Grylewicz made the call. The lower reaches of the 36-hole Indooroopilly Golf Club were already well and truly under, the Brisbane River breaking its banks and spilling a torrent of murky brown water across greens, tees and fairways, just as it had done back in January 2011.

Although water was still 1.2m away from the sheds and the river was at the high tide mark, erring on the side of caution Grylewicz pulled the trigger and started to evacuate the club's maintenance machinery to high ground adjacent to the Indooroopilly clubhouse. Office computers and irrigation satellites were also removed and by later that evening most of the big ticket items had been accounted for.

With the next high tide not due until 7.30am, the plan was to come back at 5am Sunday and spend a couple more hours

getting smaller items, such as hand tools and workshop equipment, to safety as well. Overnight, however, the shed succumbed and by the time the crew had returned the following morning they were greeted by the sight of 6-7 feet of water through the whole facility.

Into his third summer as Indooroopilly course manager since arriving from Royal Canberra in mid-2019, Grylewicz had experienced some heavy rainfall events and minor flooding before, but nothing like this. In terms of the river breaking its banks and the resulting silt, mud and debris which was deposited, this was all new territory for the experienced turf practitioner.

Just like Dave Mason across the river at Brisbane Golf Club, who had only just started in the role that week (*read Mason's story p16-21 – Ed*), you can be told about such events and shown photos, but until you live through it you have no idea of the scale and the arduous road required to get your facility reinstated.



Although at the club now for three summers, it was Indooroopilly superintendent Ben Grylewicz's first experience of a major flood event and one which he has drawn plenty of lessons from

While flood levels were about 700mm lower than 2011, the 2022 flood saw a total of 12 holes and the club's practice facilities significantly impacted

'MUD PROS'

Situated on a bend in the Brisbane River, it was inevitable that Indooroopilly would be inundated again. With around 800mm of rain falling that week in Brisbane, combined with major falls upstream, around 40 per cent of the Indooroopilly property went under, including the maintenance facility and pump shed. As Grylewicz would succinctly describe the situation to those who asked him how the course had fared, the place was "a mess, an absolute mess."

While flood levels were about 700mm lower than 2011, the 2022 event saw a total of 12 holes and the club's practice facilities significantly impacted. Gold Course holes 1, 2, 3 and 9 and Blue Course holes 2, 3 and 5 were the worst affected, with those closest to the river smothered in 5-6 inches of a soupy, grey marine mud. Red Course holes 1, 7, 8 and 9, Blue 4, the club's practice hole, Triggs chipping green and the Long Pocket practice green were all flooded as well, but only with a light film of silt left across the surfaces.

As soon as the greens started popping out once waters receded, the Indooroopilly crew took up arms. Toro Sand Pros – or 'Mud Pros' as senior greenkeeper Dean Hardman would come to call them in days that followed – were used to carefully push the majority of the mud off, before staff came in behind with shovels to finish the job.

Once the greens were exposed they were then hosed off with high pressure water. Although having no irrigation system due to the pumps going under, Grylewicz was fortunate to get his hands on a 10,000-litre water truck fitted with flotation tyres from his contacts at Atlas Golf. With its lower ground pressure, the truck was able to pull right up next to the affected greens and staff were able to use a 2-inch hose fitted with a firefighting nozzle to blast off more silt and mud that had migrated into the turf canopy.

On the fairways, a fleet of up to six positracs pushed the bulk of the heavy silt deposits into the roughs and tree lines, the resulting piles a good metre high in some areas and stretching the full length of some holes. An excavator came in to clean out the canal which runs between holes Blue 2 and Blue 5, while a fleet of dump trucks helped to haul away the muddy material.

A Ventrac unit with power broom attachment was then dispatched to remove the caked on silt and expose as much couchgrass leaf as possible. Already having the prime mover as part of its maintenance fleet, the club had swiftly approved the purchase of the attachment and within a matter of days it was on site and put straight to work. Making multiple passes over the fairways, tees and

green surrounds, it did a power of work in dislodging as much of the remaining silt and mud as possible.

As was the case in 2011, a plethora of debris came in with the flood waters, two items in particular becoming quite the talking point. A 9-metre (28-foot) keel boat 'Miss Freelove' (presumably named after the 1990s hit song by the Hoodoo Gurus) was swept in and unceremoniously came to rest at the base of a large tree behind the green on Gold 2. About 100m away, on the side of Gold 3 fairway, a large pontoon also decided to set anchor. Despite putting calls into the local maritime authority, no one has yet come forward to claim ownership of either.

Whether impacted by the floods directly or the huge amount of rain that fell on the property, all of Indooroopilly's 90-odd bunkers were severely compromised as well. In the weeks after the floods they were simply left as the focus turned to recovering the playing surfaces. Aside from being edged and sprayed for weeds, little maintenance was carried out, but there was a valid reason for Grylewicz's minimalist approach.

In the coming months Indooroopilly is about to embark on the first stage of a major course redesign under the auspices of Ross Perrett and Karrie Webb. The course's bunkers, which have been an issue for some time, will be a major component of the reconstruction works and at the time the floods hit the club was reviewing which direction it wanted to take. As well as their design and number, construction methodology was also being evaluated, with the likelihood of a porous bunker liner product being used throughout. Not surprisingly, the damage caused by the floods has expedited these discussions and Grylewicz is hopeful of a resolution shortly.



The Indooroopilly maintenance facility was inundated, but the majority of machinery was moved to higher ground in time. For comparison, the 2011 floods got up to the roofline of the superintendent's office in the foreground

Being a 36-hole facility and with more than half the course unaffected by the flood, Grylewicz also had the added logistical headache post-flood of juggling maintenance requirements of those holes as well. While the obvious focus was on the flood recovery, basic maintenance practices such as mowing still had to be performed or else the turf would quickly get out of control, especially with the warm and humid weather which prevailed immediately afterwards.

NURSING BACK TO HEALTH

With some of the greens, like Blue 2, under water for more than a week, the immediate priority for Grylewicz and his crew was getting some much-needed sunlight and oxygen back onto the surfaces as quickly as possible. To

ward off any disease flare ups, the week after the greens were cleaned off they were sprayed with a tank mix of Signature and Daconil which was left to dry on the leaf (having no pumps meant they couldn't use products that required watering in).

That was followed a week later by a decent renovation which included scarifying to a depth of 5mm, a verti-cut in two directions at a depth of 1mm and a medium topdress.

On the fairways and roughs where there had been heavy silt deposits, solid tines were used to de-compact areas, while scarifying heads were also set on a Toro 7000 fairway mower at 5mm deep to lightly break up any remaining silt deposits. This material will return into the profile as a crumbed topdress application.



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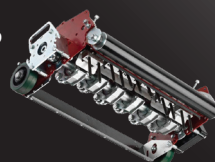


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Indooroopilly's Gold 9 (foreground) and Red 9 greens after flood waters had receded

By late March, the green light was given to open up all 36 holes for member play. As luck would have it, that particular weekend Brisbane copped a further 215mm of rain which wet everything up again and meant heavy machinery couldn't get to certain parts of the course. Thankfully there was no more flooding and stable weather since has allowed the course to dry out and continue recovering.

Indooroopilly's irrigation system finally came back online in the first week of April, with Rain Bird and Planned Irrigation teaming up to get communication back out to the field. Despite a slight delay waiting for satellites to arrive from the US, Grylewicz is now looking forward to resuming his autumn spraying programmes (spring dead spot and pre-emergents) which had to be put on hold.

At the time of writing the crew had also begun to slowly transition back into the maintenance facility and base operations from there once again. Although temporary staff offices were still being operated out of the clubhouse, it was hoped that once office and lunchroom furniture had been delivered a full transition back would shortly occur.

"It has been a very productive last five or six weeks," reflects Grylewicz. "We finalised

the last of our silt and mud removal in the first week of April and now all that is left is some repair work on the haul roads and tracks which need de-compacting and re-levelling. We won't be grassing anything for the time being, rather we'll wait to see what establishes naturally. If nothing comes through then we will consider turfing them out or sprigging.

"All the playing surfaces are fully covered and considering what they went through they are in pretty reasonable condition. We've still got a little bit of warmth in the air which has been nice and we have been pushing them pretty hard with fertiliser and liquid feeds to initiate new growth.

"The greens have come back nicely and have recovered well following the renovation we gave them. You can still see the scarifying lines a little, but we now have a full grass cover across all of them. I'm really encouraged by the way greens will play this winter. They'll have very little thatch in them and we will be able to produce some very firm and fast surfaces for the members over that period."

JUMPING QUICKLY

The manner in which the Indooroopilly turf surfaces have bounced back is a testament

to a number of things. The various recovery strategies and agronomic measures that Grylewicz and his team put in place following the floods have given the 328 greens and Wintergreen/Greenlees Park fairways the best possible chance to make a full recovery.

Coupled with that has been the support received from chief executive Steve Lamerton and the Indooroopilly Board who were able to make quick decisions and approve resources to expedite the clean-up process. A case in point was the purchase of the power broom attachment for the Ventrac. A significant investment, it was approved and delivered to the club within a matter of days and more than paid for itself in the amount of work it got through in the days and weeks that followed.

"From the recovery side of things, I think we did a good job," explains Grylewicz. "We jumped very quickly when it came to making decisions on securing plant, equipment and engaging contractors to assist with the clean-up and I feel we couldn't have done much better in that regard. We did that because we knew that suppliers like Bunnings would run out of stock quickly. We were pretty much in there as the course was still flooding, making sure we had enough rakes, shovels, gumboots and pumps, so that we would be ready to go. It was the same with getting excavators, bobcats, dump trucks and other contractors at the ready.

"Steve and the Board were great and made quick decisions based on our recommendations and didn't muck around. They knew the longer we left things the more expense and delay there was going to be. We were very fortunate too that the club was in a good financial position to be able to make those calls."

PLEASANTLY SURPRISED

Having navigated his way through the first major crisis of his tenure at Indooroopilly, Grylewicz is satisfied there wasn't much more he or the club could've done. From a management perspective they reacted astutely and got the resources needed, while on the ground his crew went above and beyond, especially in those initial weeks.

"The crew have been phenomenal," states Grylewicz. "We really had a big undertaking right from day one. It's amazing when your backs are up against the wall how everyone jumps in and works together as a team. Everyone knew what we had to do and they put in some huge hours, certainly during that critical stage of getting all the turf surfaces cleaned off and exposed. We worked seven days a week for three weeks straight, so I couldn't speak more highly of their efforts. It was definitely a marathon and not a sprint.

Indooroopilly crew members get to work cleaning the green off on hole Blue 5





Just a boat... on a golf course. This yacht was washed down the Brisbane River and onto the course, wedging itself in trees behind the green on Gold 2. A pontoon was also deposited on an adjacent fairway

"Being my first major event of this nature here, personally it was stressful at times. There was a lot of thinking and planning required and ensuring all the little details were ticked off one by one. We prioritised all those things, set ourselves targets and chipped away at them one day at a time.

"Beyond being exhausted during that first three weeks, it was really rewarding to see the

outcomes happen so quickly and to see the course responding and coming back. We got a lot of praise from the membership in regards to how quickly things seemed to turn – from uncovering the surfaces, the turf being yellow in colour and then a week later seeing the surfaces starting to green up and filling back over. Considering how long some of the areas of the course were under water for, I have

been pleasantly surprised with how well they have recovered. It just proved that we had our processes right."

There is, however, one thing that Grylewicz would change if he did have to go through a similar event again: "When it comes to moving equipment, just get things out early. If it means making a premature call, I can live with that. The only time you lose is having to move everything back in again, but it's better than losing equipment and machinery and the hassle and expense that creates afterwards.

"With the exception of that, I think overall we did a pretty good job. It also just reinforces how you can never underestimate the power of Mother Nature." 🌿

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A baptism of ~~fire~~ flood

As far as inductions go, it was one that superintendent David Mason (CSTM) would rather forget. Arriving at Brisbane Golf Club to find his new course 85 per cent under water, including the maintenance facility, it was pretty much a case of where do you begin.

PHOTOS: DAVID MASON AND BRETT ROBINSON WORDS: BRETT ROBINSON

This was the scene that greeted new Brisbane Golf Club superintendent David Mason just days after arriving in the Queensland capital. As it had in 2011, the club's maintenance facility went under nearly up to the roof





Crew members begin the arduous task of cleaning off Brisbane's Champion bermudagrass greens. More than 85 per cent of the course went under including 17 of 23 greens

The rain pretty much started as soon as David Mason (CSTM) hit Coonabarabran, NSW and didn't stop for the next week. Driving up from Melbourne, where he had spent the past six-and-a-half years as superintendent of Metropolitan Golf Club, Mason was embarking on a new adventure. Uprooting his life from COVID-fatigued Melbourne, he was heading to the Sunshine State to start afresh as the new course superintendent of Brisbane Golf Club.

Due to start his new role on Tuesday 1 March, the previous weeks after farewelling Metropolitan had seen Mason and his wife Tash packing up their lives in readiness for the move north. A shipping container with all their contents was already in transit and Mason was now driving his ute the 1700 or so kilometres from Melbourne to Brisbane.

His trip up had been brought forward by a few days on account of the wet weather that was forecast to hit south east Queensland and northern New South Wales in that last week of February. The idea was to miss the worst of the weather, acclimatise before starting his new job and take possession of their new rental property. He would then have a few weeks to familiarise himself with his new club – the course, the turf, the crew – before Tash arrived having completed her work commitments.

Mason arrived in the Queensland capital on Wednesday 23 February and dropped by the club to have his first look around and to meet everyone. Over the course of the next few days he did likewise as the rain continued to tumble down. Coming from Melbourne, where 50mm is considered a major dump, Mason could only marvel at the level of precipitation, the likes of which he had not seen before.

With the rain showing no sign of abating and only getting worse, things started to get a little serious. Discussions started around whether the irrigation pumps should be pulled out and whether machinery should be moved to higher ground. Having been onsite for less than 48 hours, Mason had no reference points to work with and so asked his new crew what they thought. With the exception of his new assistant Peter McNamara, who happened to be away on his honeymoon that week, none of the Brisbane crew had been around for the floods which smashed the course in 2011 (McNamara was working across the river at Indooroopilly back then). The consensus among the staff was that they didn't think that things would get that bad.

Following the 2011 floods, Brisbane's irrigation pumps were set up in such a way that the control panel and pumps could be disconnected and pulled out should floods threaten the course again. With the course completely saturated and no work able to be carried out, Mason assembled the crew mid-morning Friday and together they removed the pump control panel, placed it on a Dean trailer and parked it up inside the maintenance facility. The pumps themselves remained in place. Mason then stayed on site for the rest of the day, continuing to get a feel for the course and the maintenance facility, before heading home about 4.30pm.



Most of Brisbane's machinery fleet was evacuated to higher ground in time, while the clubhouse turned into a makeshift machinery and equipment storage area in the weeks after

It wasn't the torrential rain that woke Mason hours later at 3am on Saturday, rather a phone call from Brisbane chief executive Geoff Kuehner. Mason was told he didn't need to come in – remember, he wasn't officially starting until the following Tuesday – but they wanted to let him know that they had made the decision to move machinery out of the shed to higher ground.

Not surprisingly 30 minutes later Mason was at the course and along with eight other ground and clubhouse staff they started the process of ferrying machines from the maintenance facility up to a vacant section of land adjacent to the 12th tee. The majority of machinery (but not the pump control panel) was moved, but as soon as some machines started to bog and conditions became unsafe, the migration was called off. Whatever machines were left were parked on high ground behind the maintenance facility to the side of the 17th fairway.

For the rest of Saturday, Mason watched in awe as the water came up and up and up. By the afternoon the shed was still dry but access had been cut off. Mason waded across to check on things before leaving the course just on dark, the rain still sheeting down.

Sure enough, coming back in at 5.30am the next day, Mason's worst fears were quickly realised. Overnight the shed had been



Demountables which housed the maintenance staff offices and lunchrooms weren't spared either

consumed by flood water, along with about 85 per cent of the course, including 17 of 23 Champion bermudagrass greens. Not exactly the welcome to Brisbane that Mason had expected or wanted.

"It's the sort of induction I would prefer not to have had," reflects Mason, who was still living out of a suitcase at this point. "It was quite the shock that's for sure. Nothing

could prepare you for it. People can tell you all about it and show you photos, but until you've actually experienced it you just have no idea. The rain was phenomenal. I have never witnessed anything like it in all my 28 years in the turf industry – it just didn't stop."

LOW POINT

From the Wednesday that Mason arrived in Brisbane to the following Monday (a six day period), the Bureau of Meteorology's Brisbane station recorded 792mm of rain, including three consecutive days (Friday to Sunday) of 226mm, 228mm and 223mm. With the Oxley and Moolabin creek systems feeding into the course, it was only a matter of time before it was inundated, the lowest parts of the course remaining under water for the next four days.

The killer though was the maintenance facility and the pump shed. Although levels were about 400mm lower than the 2011 floods, the devastation to those structures and equipment was just as bad. It wasn't until the Wednesday that Mason was able to wade his way through water across to the maintenance complex and survey the carnage.

"I was feeling pretty good up until that stage," recalls Mason. "You just had to try and be positive about it all – there was no point being down in the dumps about it. But after seeing the sheds and the state they were in,

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While flood levels were about 400mm lower than 2011, the damage caused was just as devastating, with lower parts of the course under water for many days

that's probably when I hit my lowest point. I couldn't get into the shed, but I could see the office and lunchroom demountables and they were destroyed. They had floated and tipped slightly so everything inside – filing cabinets, furniture, computers – were all over the place.

"That's when the reality of the situation kicked in and the magnitude of the job that was ahead of us. And I was thinking, if the sheds were like this what was the rest of the course going to be like. I think I went home that night and thought 'What the hell have I got myself into?'. I guess I had to have that low point at some stage, but from then on you just gather yourself and push onwards.

"Once the waters started to recede and you could see the greens and playing surfaces popping back out, and that they weren't too bad, we just went to work and got stuck in. The boys did an amazing job. We also had the golf shop and admin staff helping and we also had member volunteers come in for two days.

"Thankfully we didn't get the massive silt deposits like they had in 2011 and we were able to get the greens cleaned off in pretty quick time. They were a little discoloured and diseased looking, but they handled it pretty well considering."

Aside from the immediate need to tend to the flood-affected turf surfaces, there were plenty of other challenges that confronted Mason and his crew. No electricity and no pumps for starters and no facility to base themselves out of. Temporary offices had to be set up within the bowels of the clubhouse, while the area underneath the clubhouse balcony was turned into a temporary storage area for equipment, machinery and products.

While the majority of Brisbane's machinery had been moved to higher ground, all the little things like hand tools, blowers, rakes, shovels, squeegees and other equipment needed to assist with the clean-up hadn't. In the

days immediately after Mason and his team, together with clubhouse staff, scurried about attempting to source new equipment. Some staff even brought in their own from home.

The local Bunnings at Oxley was closed due to flood damage and with the surrounding area also badly flooded there was heightened demand for most equipment from impacted residents and businesses. Having only just arrived in Brisbane, Mason's knowledge of local suppliers was limited at best and at times he had to rely on some of his old contacts from Melbourne and Sydney for assistance.

The chemical storage shed was another nightmare. Everything had come off the shelves and in some cases lids had been dislodged. In the weeks that followed Mason was able to salvage what he could, but not wanting to risk the unknown had to order in new chemical supplies for the greens. Fuel, too, was initially a problem. Although tethered by chains, the aboveground fuel tanks were lifted up by the water, with the diesel tank coming to a rest against the unleaded tank on a 45-degree angle. Mason and his staff were forced to do multiple service station runs daily to fill up jerry cans in order to keep the generators operating.

Then there was the rubbish. The course backs onto the Brisbane Markets and as was the case in 2011 all manner of debris was



One of many challenges once waters had receded

left deposited around the course as waters receded – wooden pallets, polystyrene boxes, refrigeration panels, wheelie bins, tyres, wheels, oil drums. Even a fridge floated in and wedged itself in a tree.

BIG DECISIONS

The weeks following the floods were a huge learning curve for Mason. It's not often you arrive at a new job and are faced with over a metre of rain in your first six weeks. Indeed, as they were starting to get some semblance of normality, another 132mm fell on the course in late March, wetting up areas again and putting a temporary halt to recovery efforts. Thankfully, the weather since has settled and Mason is now looking forward to the cooler (and historically drier) months ahead where he will get a chance to take stock and get more of a handle on how the turf bounces back and performs under more normal conditions.

Four weeks after the flood, in early April, the crew were finally able to move back into the maintenance facility. Unfortunately the office, locker room and lunchroom demountables were deemed unfit, as the wall and floor inner linings were waterlogged and structurally compromised. That meant all staff amenities had to shift back into the main shed, including Mason's office which for the time being is simply a desk at the far end of the shed. While obviously not ideal, Mason knows it is what it is for the time being, but is hopeful that by being back in the sheds it will bring back a bit of routine for the crew.

One positive in regards to the maintenance facility is that it has given Mason a point of reset. Sheds have a tendency of accumulating stuff over the years and given the last proper clean out probably occurred back after the 2011 floods, the recent inundation has provided another opportunity to clear out a lot of unused equipment and material.

Looking long-term and the club is now in the process of looking at risk mitigation with one item squarely at the top of that list – the location of the maintenance facility. Having been inundated to such an extent twice in 11 years and the cost associated with reinstating it each time, the club has some serious discussions ahead of it. Not surprisingly, Mason has some firm ideas and opinions about the matter and meetings have already been held to determine a way forward.

SURFACE FOCUS

While Mason will play a key role in advising the club of that path, for now his immediate focus is getting to grips with his new turf surfaces and returning the golf course to a level of presentation that he (and the members) are happy with. By no means has it been easy and he is still very much in a learning phase, particularly with the Champion greens which are unique to the club.

"We didn't do too much to the surfaces other than cleaning them off after the flood," explains Mason. "That is probably one thing I've learnt for next time – to be more aggressive in regards to performing some sort of renovation after an event like this which seems to be the common thing up here. I missed that boat unfortunately, so really it has been just about getting the surfaces back and in most cases they're pretty good."

"In those areas which were under water the longest the turf has thinned a bit, but I'm confident we'll get those back before the cooler months. Now that the place has dried out we are back into more of a maintenance mode. The focus now is to try and get as much recovery as we can and make sure that everything is intact and as healthy as possible before growth rates start to slow right down."

"The greens have certainly posed a bit of a challenge for me. After a couple of weeks without cutting they got very puffy and when we did start cutting they scalped a fair bit. They are starting to settle down a bit now as the temperatures have reduced. I'm not overly concerned and it is all part of the learning process going forward."

"Over the next few months I'll be looking at how the turf goes through the cooler months and how the course responds. I've made a few decisions like not to oversow the tees this year,



David Mason (CSTM) certainly won't forget the first month of his tenure as the new superintendent at Brisbane GC

which is not the norm, because I want to see how the couchgrass responds and performs under the cooler conditions."

"We are also going to get some benchmarking done on the greens – thatch levels, grain, playability etc.... That will give us a better understanding of where the greens are at and give us some data to work off so that we can make improvements going forward."

"Looking back it was certainly a baptism of fire and one that I wasn't expecting. I'm sure the poor chairman of greens must have been thinking I was going to walk out! But the club has been very supportive and the crew have done an amazing job given the challenges we've faced. Hopefully now we can start doing what we do best and get back to presenting the place the way it should." 🙏

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PHOTOS: LUKE HELM AND BRETT ROBINSON. WORDS: BRETT ROBINSON

Meadowbrook Golf Club has experienced 10 significant flood events over the past 14 months. While they have been heartbreaking for course superintendent Luke Helm (CSTM) and his crew, it hasn't broken their spirit.

You cannot help but admire Luke Helm (CSTM) and the crew at Meadowbrook Golf Club after what they have endured over the past 14 months. A crew of just six maintaining 27 holes across 88 hectares is challenging enough on its own, but having to contend with the hand that Mother Nature has dealt them in recent times only further amplifies the remarkable resilience they have had to collectively muster.

Helm has experienced the full gamut of conditions in his four-year tenure at Meadowbrook, his first as a fully-fledged course superintendent. Arriving there after seven years at Colonial on the Gold Coast, in his first year he had to nurse the course through an extended period of drought, receiving just 550mm of rain for the year. Since then, however, it has been the exact opposite.

Helm reckons he has now experienced more than 20 major and minor flood events over the past three years, including 10 over the past 14 months. He had thought the worst of them had come last March, however, 12 months on and he and the crew found themselves cleaning up after the course copped one of its worst in its 34-year history.

You'd think having to reinstate your course that many times would be enough for any superintendent to consider perusing the job's vacant column. True to his character, though, Helm has remained upbeat and together with his small yet dedicated crew has never been more determined to bounce back.

Helm regularly keeps members updated on course operations through the Meadowbrook Golf Club Turf Management Facebook page and after their 10th and most recent flood event in late March, he was quick to reassure members they would be pulling out all stops to get the place back to its best.

"Well, what a summer it has been at our club," posted Helm. "For myself, certainly the

most challenging in my career. The floods over the past six months have been devastating for our department, to work so hard to get the course back and then see it washed away again so quickly breaks our heart...

"The support from everyone this summer has been amazing and means the world to myself and the boys. Although we are a little battered and bruised, our determination to provide you with the best golf course we can hasn't diminished at all! We will get through this next chapter together and I'm sure one day look back at what has been quite a season in 2021/22."

AN INLAND OCEAN

A victim of its location, Meadowbrook is one of a number of golf courses that reside on a floodplain within close proximity of the Logan River, just south of Brisbane. Slacks Creek, a tributary of the river, wends its way along the course's eastern boundary. In late February and early March, south east Queensland and northern NSW were smashed by major rainfall events. In Meadowbrook's case they recorded 610mm in three insane days, however, it was the significant falls further up the river catchment which proved the killer.



The floods deposited a giant clump of pampas grass onto Meadowbrook's 22nd green

Crew members Cameron Small (foreground) and Jack Wojcicki begin the laborious task of removing silt deposits from one of Meadowbrook Golf Club's many flooded greens following March's inundation

Helm was actually in Melbourne when the horrid weather struck, supporting his son Brock who was competing at the Australian National Karting Championships. From the highs of watching his lad secure a top-10 finish in the final of the Cadet 12 class, Helm was quickly brought crashing back to earth when he returned to the course on that first Wednesday in March. Walking from the Meadowbrook maintenance facility (thankfully high and dry) and down the path between the clubhouse and pro shop, all he could see was an ocean of water which was lapping at the bottom of the clubhouse steps.

"It was a really weird sight rocking up and just seeing a lake in front of you," recalls Helm. "In past floods you could see some of the higher parts of the course out of the water here and there. This time there was just so much water you couldn't see any of the course. Our owner Tom Linskey has been through them all and says this was by far the highest."

The flood event 12 months earlier had seen a total of 20 holes and 18 greens go completely under. Later in the year and following a very wet back half of 2021, between September and December the course flooded a further six occasions, with anywhere from 10 to 15 holes impacted on each occasion. This latest event, however, surpassed all those by some margin.

Twenty-nine of Meadowbrook's 30 greens went under and, just to twist the knife further, the sole green that didn't get inundated had an outbreak of pythium in the days that followed. At worst, the lowest parts of the course near the creek remained metres deep under water for nine days. The driving range, one of the



"Although we are battered and bruised, our determination to provide members the best golf course possible hasn't diminished." – Meadowbrook superintendent Luke Helm (CSTM)

club's key revenue streams, also went under, as did the new coaching centre and mini-golf complex.

As soon as greens popped out as waters slowly receded, Helm and his crew went straight to work. Pumps, tools and whatever other equipment they needed was loaded into either a boat or on a backhoe and ferried out to the greens to begin the unenviable task of scrapping off all the mud and silt. As soon as the greens were cleaned off, they were aerated and given a follow-up renovation the week after with mini-tines as well as applications of amendments and fresh sand. Fairways, tees and surrounds were attacked with a hired Ventrac unit with power broom attachment which barely got a rest during the five days it was on site.

WASHED AWAY

Damage to three holes in particular were the hardest for Helm to come to terms with. In

recent times he and the crew had embarked on a number of course improvement projects, all of which sustained irreparable damage.

Just weeks before the flood, the fairway on the 7th hole, which resides on the lowest part of the course next to the creek, had been re-levelled and sprigged with couchgrass. Reconstruction work had also just started on the green to lift it above minor flood level height. Drainage had just gone in and sand and gravel had been stockpiled and were ready to be spread. Neither green, which was due to sprigged the following week, nor fairway stood a chance when waters spilled over the adjacent levee bank.

Likewise the 10th and 13th greens. The 10th had just been reconstructed and sprigged a few weeks earlier, while on the 13th Helm was in the process of establishing a new seashore paspalum green. About four weeks earlier the crew had reconstructed and sprigged the green and it had taken nicely.

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The late February/early March flood was the worst in Meadowbrook's history, with 29 greens going under and water lapping at the steps of the clubhouse. Pictured is the 9th green (TifEagle) being reinstated



The recently re-levelled and sprigged fairway of Meadowbrook's 7th hole didn't stand a chance



About four weeks before the flood, Helm had reconstructed the 13th green and sprigged it with seashore paspalum. Under water for nine days, the juvenile turf couldn't withstand the inundation and had to be replanted

Sadly the juvenile turf was compromised and despite a few rhizomes showing a bit of life in the weeks after, ultimately the green had to be re-sprigged.

"It was quite disheartening," says Helm. "It was pretty hard seeing all those improvement works we were doing get laid to waste. That seashore paspalum green was our first one. It was all striped up and looking beautiful, but because it was so young it didn't stand a chance. We also had a member come in and re-do all the cart paths just before Christmas after our last major flood – they were all washed out again.

"That was the other hard thing to take. It was probably about three weeks before this major one where I thought we had finally got the course back to a level where I was happy after those floods we had late last year. Then we get whacked again – not once, but three times.

"As we were cleaning everything up that first week of March, on the Tuesday we went back under again after Beaudesert had another 75mm. It usually takes about a day for the effects of rainfall upstream to come down the river and impact us. So there we were on the Monday, a nice sunny day, cleaning off mud on the 6th green and next thing we know water starts coming up over the top of the levee banks. Within three hours five greens were back under! Then, in late March, it happened again – the whole lower half of the course, including six greens, went under and 18 holes were cut off.

"The big concern now is having enough time to recover those worst-affected greens before winter sets in. Fingers crossed that last flood in late March is the end of the rain and we can get some sunny weather and good conditions before our growth starts to slow down."

HORSEPOWER AND MANPOWER

Having contended with multiple floods, there's probably not too much more that Helm and his crew could glean from these recent events. But as is always the case in the turf industry you never stop learning and Helm is quick to highlight a few things that they'll do differently should the inevitable happen again.

"Every time you clean up you always find a better way or a new approach," says Helm. "This time we hired a Ventrac with a power broom attachment and without that thing I don't know what we would have done. It definitely saved us. We are a big place and to be able to clean off all that mud – from fairways, tees and surrounds – with one machine in five days was just incredible. Hopefully we can add one to our fleet soon as you can see the value it has – it basically paid for itself in the time it was here.

"We definitely need more squeegees too. We have 12 but could have done with

30. Because the flood impacted so many residences and businesses around the local area, there was a run on those sorts of things at Bunnings and hardware stores.

"Because of the magnitude of this event, this time we got a lot more volunteers in and that made it so much easier. Normally you get a couple, but this time we had a much larger contingent. We had four teams of six guys and they helped us to smash it out so quick which made a huge difference. It just helped to take the weight off the crew – it just wasn't all on us to get the whole place back. So going forward, the second we get a flood we'll be straight on social media to try and get as many numbers in as we can.

"Aside from that there wasn't much more that we could do. With the weather that was forecast, we knew what was coming and knew what we had to do. We got our products out when we needed to and then just waited for it to hit."

Above all, however, for Helm the events of recent months have again reinforced the importance of having a resilient mindset, maintaining a positive outlook and making sure his staff were looked after throughout. Whether it was giving them some time off or putting on a BBQ and a few beers as a thank you for their hard work, showing appreciation for the efforts of his team was paramount.



Meadowbrook's Grant Chappel uses a hired Ventrac with power broom to clear off silt deposits from the driving range. All fairways, surrounds, tees and range were cleaned off inside five days

"It is hard and at times you find it difficult to keep morale up," reflects Helm. "We are only a small team, so I try to treat them well. We are a pretty tight-knit group and we get along really well. As soon as it started raining I knew what we were in for. Straight away I gave the guys a few days off because I knew I was going to need them as soon as the waters receded. I pulled them in and told them to have a couple of days off, but to be ready to come back in knowing what we were likely to face.

"For me, I've been here long enough now to know that it's just the reality of this place. As soon as you drive out that gate you have to switch off otherwise you'd go crazy. But as soon as you drive back in, it's game on. While it is hard to have to keep doing it, it's our job. Fortunately I'm lucky to have a really great crew and they do a remarkable job."

Editor's note: For more photos and to check out Luke Helm's posts, search 'Meadowbrook Golf Club Turf Management' on Facebook. 📸

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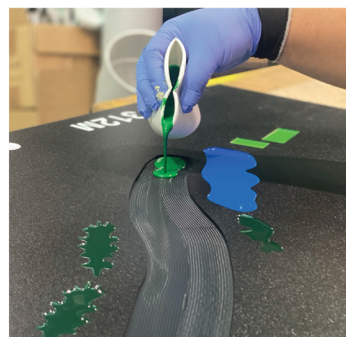
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Cleaning up



AGCSATech senior agronomist Bruce Macphee looks at some of the key agronomic considerations following flood events.

Recent months have seen some dramatic footage of the widespread rains and resultant floods impacting communities along Australia's eastern seaboard. Many golf courses, sporting grounds, racetracks and turf farms have been inundated by flood waters, with some having only just recovered from previous flooding over the past 12 months.

Such facilities will be experiencing varying degrees of damage and this article is designed to provide a summary of potential problems likely to be faced and solutions which may assist turf managers getting their facilities back into play with minimal long-term issues.

SPORTSFIELDS

As with all sports turf facilities, there is no 'one size fits all' solution. Each venue will have to be treated individually and the solutions will be wide and varied dependent on the level of damage, period of inundation and silt deposits left behind. There are many issues which can affect how long a turf surface may sit prior to getting some much-needed attention. Access to power, clean water and equipment may limit what can be achieved when flood waters subside.

As with all disasters, assessing the level of damage and coming up with a recovery program is a priority. Where there has been minimal flooding, a simple verti-drain to assist with the movement of water and the re-introduction of oxygen into the profile may be all that is required. Sportsfields which have been flooded and where large deposits of silt and debris are left behind will take significantly more effort to return the surface to pre-flood conditions.

Removal of silt and debris deposits smothering turf should be a priority. Turf facilities with a sand-based profile have the potential to be greatly affected with a layer of silt building up within the turf canopy, effectively sealing off the surface. Long-term there will be issues with infiltration and aeration, ultimately leading to a poor-quality surface unless action is taken to remove or limit the effects of the silt layer.

Where possible, as much of the silt layer should be physically removed as possible. On a large-scale sportsfield there are fewer options for removal of silt from the canopy such as blasting with water, which can be highly effective on a smaller scale such as a golf green. Dislodging the silt and either blowing, vacuuming or brushing out of the

canopy will be the preferred options. Each venue may have a preferred option which is effective in their circumstances. It may be a case of try it and see with the equipment you have at your disposal or utilising external equipment and labour to assist.

The key areas to address first should be the high traffic areas such as goals and centre corridors followed by outfields where time may not allow an intense clean up to occur. The following options could be tried on a large scale clean up:

- Removal of bulk silt and debris using a posi-track or front-end loader.
- Power broom or asphalt road sweeper to brush debris out of the canopy.
- If the surface has dried, a vacuum or tow behind blower may be effective at moving silt out of the canopy.
- Scarifying or a light rake may loosen the dry silt allowing it to be blown or brushed from the surface.
- Additional hollow coring with large diameter tines (5/8") and removal of the cores will be required to physically break up the layers on the surface.
- Topdressing with sand matching that of the profile and back filling holes will assist with improving infiltration and aeration.



PHOTO: DEAN HARDMAN/INDOOROPILLY GC

Depending on location and proximity to waterways, golf courses can experience varying degrees of flood damage, from light inundation through to the major deposits of silt which heavily contaminate turf surfaces and bunkers

Where there has been a distinct layer form on the surface, works will be required as soon as possible to limit the long-term damage or performance of that surface as the silt layer is often difficult to remove.

Experience has shown that the following problems have been consistently experienced after flooding, including:

- Increased incidence of root and leaf lesion diseases such as pythium and rhizoctonia;
- Softening of the surface during wet weather periods, increased damage from ball marks;
- Reduced infiltration/drainage rate due to silt layer;
- Increased incidence of dry patch during summer;
- Increased incidence of black layer due to silt sealing the surface;
- Difficulty in producing a high-quality surface; and
- Increased weed populations due to weed seed being carried onto surfaces in floodwaters.

The biggest challenge in many instances is effectively tackling the silt layer deposited on fine turf surfaces. There are a wide range of options which can assist in removing a large percentage of the silt layer, however, nothing is completely effective and greens which have experienced a significant layer will require an ongoing program to break up and remove it.

The following program is recommended to be implemented immediately after water has subsided enough to gain access to the greens.

- Trial pressure blasting the silt layer off affected greens with a hose and fish mouth nozzle held on a 30 degree angle to the

surface, working from the centre of the green out to the edges in all directions. This may assist in moving a large portion of material out of the turf canopy.

- When the green surface is dry, verti-cut or scarify just into the surface to break up the silt layer.
- Blow or power broom scarifyings and silt off green, once again working from the centre of the green out to the edge in all directions.
- Core greens using 1/2" - 5/8" tines to assist in silt layer removal. Lightly topdress after coring.
- A preventative application of a broad-spectrum fungicide should be made immediately after renovations to assist in reducing potential disease outbreaks associated with increased stress.
- Greens not affected by flood water may also benefit with hollow coring, as this will help to provide a uniform playing surface across all greens.
- Applications of turf growth regulator may also assist with managing unwanted growth over the coming months.

FAIRWAYS

As with greens, the level of damage will vary greatly dependent on topography and extent of flooding. The main problem observed on fairways during previous flood events was the deposits of silt smothering turf. Removal of bulk layers of sand and silt smothering turf should be a priority. Bunker rakes with a blade on the front can be very effective along with front-end loaders and posi-tracks etc.

As observed elsewhere, weeds are a major problem on most flooded golf courses. It would be expected that there will also have been a large seed population deposited with the silt and that weed germination is likely to continue occurring for some months. This will

Progress can be checked by taking a vertical sample of the profile and observing the effectiveness of your program or the extent of silt layers present within the canopy.

GOLF COURSES

Depending on location and proximity to waterways, golf courses can expect to experience varying degrees of damage. This can be light inundation of playing surfaces with water through to strong flows of water scouring turf and leaving behind debris, including layers of silt deposited into the turf profile which can have a long-lasting negative effect.

GREENS

Each course and green location will vary in the level of damage experienced. Greens that are inundated with water for a short period of time with little silt or debris may require very little other than time to dry out. Greens which have been in the path of water flows and silt laden water can result in layers of silt deposited on the green surface which can be observed when looking at the profile with a hole changer.

Where there has been significant silt deposits left on greens, works will be required as soon as possible to remove it to limit long-term damage to the surface



PHOTO: DEAN HARDMAN/INDOOROPILLY GC



PHOTO: GCSAQ/EMERALD LAKES

When it comes to reinstating turf surfaces after flood events, there is no one solution which will be suitable for every situation. Utilise the resources – manpower and machinery – that you have at your disposal

require an extensive pre- and post-emergent weed spraying program to control introduced weeds.

Sections of fairway that have been inundated for long periods may start to deteriorate, particularly if very hot weather is experienced immediately after a flood event. Disease and heat stress on a plant with a damaged root system sitting in saturated soil can be the tipping point and areas of fairway which are low lying will need to be monitored closely. In some instances, replanting may be required.

The following works should be implemented to assist with recovery:

- Where possible, the layer of silt should be washed off with the assistance of a fire pump and a hose with a fish mouth nozzle.
- When dry, turf should be scarified and material blown.
- Dragging a steel mat or brushes over dry turf can loosen silt before being blown.
- Affected areas should be cored to assist with removal of the silt layer.

- Verti-draining of affected areas will also assist with moving water and introducing oxygen back into the profile.

TEES

Tees affected by silt deposits will require similar treatments to greens and fairways. Where required, removal of any bulk silt build up should be a priority to uncover turf. Water or a blower could also be utilised to assist with silt removal from tee surfaces. Other options include:

- Scarify tees in two directions to help break up silt layer;
- Blow silt from surface;
- Core tees with ½ inch tines.
- Trial of a power broom to sweep silt and debris from surface.

BUNKERS

The damage to bunkers is quite often extensive where water has flowed through a course. Sand is often scoured out of bunkers and deposited on the adjacent turf surfaces



and layers of silt are left behind, contaminating what sand remains within the bunker.

Where possible silt deposits can be scrapped from the sand and potentially it can be re-used. Physically removing silt deposits before pushing sand around can salvage large volumes of sand for re-use, both within bunkers and from turf areas. While time consuming, it is recommended to remove by hand approximately 50mm of contaminated sand from each affected bunker and replenish with fresh clean sand, which can then be blended in to the existing material.

PRIORITY REQUIREMENTS

Having witnessed the impacts of various flood events on golf courses around the country, the priorities for turf surfaces should be:

- Removal of silt layer on affected fine turf areas such as greens.
- Weed control in fairways, tees and greens surrounds. Once turf has recovered, some post control may be required. Getting a suitable pre-emergent herbicide on and maintaining a program will be beneficial in reducing the number of seeds emerging over the following 12 months.
- Renovation of greens in the spring including scarifying, hollow coring and sanding.
- Renovation of fairways (coring to break up silt layer).

FINAL THOUGHTS

As mentioned above, there is no one solution which will be suitable for every situation. Turf managers are a resourceful bunch and think outside the box. Utilise what you have at your disposal. What other local industries can assist you with equipment?

Power brooms mounted on the front of a Ventrac, posi-trac and used for road sweeping can be highly effective at removing debris from the turf canopy. The cost of engaging a local contractor may free your staff up for much needed fine detail work while the larger areas affected are being treated efficiently using outside contractors.

It is also extremely worthwhile speaking to others in your area for support and to get ideas on what has worked or what hasn't worked. Documenting all of your recovery efforts and the lessons learned is also important and can be looked back upon if similar events arise in the future.

Editor's Note: If you require any advice on flood recovery or wish to discuss aspects of this article, contact AGCSATech agronomists Bruce Macphee or Tim Fankhauser on (03) 9548 8600 or email bruce@agcsa.com.au or tim@agcsa.com.au.

Using a power broom attachment is one of the most effective ways of removing silt deposits from fairways

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Above: Wet weather conspired to make preparations extremely difficult for the Oaks Cypress Lakes crew. Fairways only received their first cut (at 20mm) in two weeks on the Saturday afternoon of the tournament

Below: With the course saturated, greens surrounds could only be cut with pedestrian rotary mowers and whipper snippers



TPS show goes on

Throughout all the horrid weather that struck the eastern seaboard in early March, Oaks Cypress Lakes Resort and Bonnie Doon GC somehow managed to host two PGA Tour of Australasia events.

The murmurings started on Monday. "Surely we won't be playing. I'm telling you, there's no way we're playing this golf tournament."

Just a day earlier the PGA Tour of Australasia's TPS Sydney event at Bonnie Doon Golf Club had to be reduced to a 54-hole event due to incessant rain. As the players made their way up the M1, with rain still sheeting down, many had thoughts that the next event on the Tour schedule – the TPS Hunter Valley at Oaks Cypress Lakes Resort – would befall a similar fate, if not be pulled altogether.

Those who know course superintendent Craig Molloy will attest he is a very upbeat bloke, but even he was having doubts as the first of the players pulled into the Cypress Lakes car park.

Up until four weeks before the tournament things had been ticking along nicely and the place was in great condition for its TPS debut. Only an outbreak of Argentine stem weevil, which was quickly brought under control, had given him cause for concern to that point, but with wet weather setting in across the state it would soon provide a new and unwanted headache.

Over 17 days in February, the Hunter Valley course received 219mm of rain. While that may not seem like a lot, it was 150mm above its usual monthly average. Compounding that, as summer officially clicked across to autumn, the first nine days of March saw the course cop a further 168mm. With the tournament due to start on 10 March it wasn't exactly ideal.

Other than hand mowing tees and greens, nothing else (fairways, roughs and surrounds) had been cut as the ground by that stage was well and truly saturated. Cypress Lakes' many large and steep-faced bunkers had been washed out multiple times as well, while the rough was at knee height. The week prior to the tournament, the front nine holes were closed to carts with a 'walk-only' policy enforced to minimise damage. Carts were allowed on the back nine but with restricted GPS access to pathways only.

On the Saturday prior to tournament, Molloy was finally able to get out on course and apply a preventive fungicide, insecticide and growth regulator to the greens. Luckily they got it out in enough time for the product to dry on the leaf as a late afternoon storm dropped another 8mm. Confident that the greens would be under control for the tournament, the following day (6 March) the crew started hand mowing and whipper snipping green surrounds. However, another 29mm of rain would see bunkers washed out yet again and the inevitable decision was made to cancel Monday's first practice round.

Having reinstated the bunkers, hand mown and rolled greens twice and cut green surrounds for a second time with rotary push mowers, it was hoped that Tuesday's practice round would be able to proceed. Another late afternoon storm of 18mm quickly put that out of the question.



The Oaks Cypress Lakes Resort crew with TPS Hunter Valley tournament host Peter O'Malley

After heading out again Tuesday morning and pushing up bunkers and preparing the course as best they could, Molloy met with tournament staff from the PGA and WPGA where it was decided to cancel the Wednesday Pro-Am. Molloy was confident that if the course didn't receive any further rain, round one would be able to tee off as planned on Thursday, provided that he and his crew had the time to prepare the course on Wednesday.

True to form, those hopes were dashed as well. That night saw a downpour of 21mm in an hour at 6pm, while overnight a further 32mm fell. On Wednesday, the call was made to cancel the first round and reduce the tournament to 54 holes starting Friday, with a cut on Saturday after 36 holes. By doing that the tournament would still count towards the Tour's Order of Merit.

By the time Thursday rolled around the rain had thankfully abated and with the wind starting to pick up and dry out the course things started to look a little more promising. Tour officials set about instituting local rules and modifying the course for play. Shares in white spray paint soared as 'ground under repair' areas were marked out in the most affected areas of the golf course (especially landing areas), while the par four 12th was modified to a par three for the first two rounds. Still at this point, neither roughs nor fairways had received a cut.

Having had no practice rounds, tournament officials permitted the players to walk the course on Thursday, ironically as it was bathed in sunshine. Many opted to walk sans shoes, preferring feet covered in mud which splattered up their legs than a last-minute clean-up job on their golf shoes. Even as late as 5pm on Thursday a large contingent of players were still convinced they wouldn't be teeing it up the following day.

Sure enough, however, come 7.30am Friday the tournament started and slowly but surely the mood began to change. Players were granted preferred lies through the green, but the fear that balls would be lost – embedded in the soft ground – were ultimately



Cypress Lakes' many large and steep-faced bunkers were badly washed out and had to be reinstated multiple times in the tournament lead-up

PHOTO: AUSTRALIAN GOLF MEDIA



PHOTO: AUSTRALIAN GOLF MEDIA

Superintendent Craig Molloy takes care of the one percenters during morning course set up

unfounded. Players in the afternoon groups went to bed fearing an 18-hole fight with par, yet turned on their phones to see that Momoka Kobori and Bryden Macpherson had both posted opening rounds of five-under 64.

With the first two rounds out of the way and the course drying out nicely, Molloy was confident that come Saturday afternoon he could get mowers back out on the course. Tournament officials granted the crew access to the course at 5pm and for the first time in two weeks they were able to mow fairways at 20mm, finishing up at 11pm. Where possible, all rough from fairway to tree line was also mown at 100mm, while areas that were too wet were cut with whipper snippers. Tees were hand mown and greens were single rolled. Come the final round on Sunday, the crew

were able to do a full course prep – greens, bunkers, collars, fairways and rough perimeter – and the 12th hole was converted back to a par four.

As if to reward all the hard work to get the course up and prepared, the tournament finished in thrilling fashion with a three-hole playoff between eventual winner Aaron Pike and Kiwi female pro Kobori (TPS events feature both men and women competing in the same field for the same prize purse and one trophy). An enthralling final day saw the lead change hands on a number of occasions, but it was always Pike and Kobori in the top two positions, ultimately finishing tied at eight-under and three clear of the field. After squaring the first two playoff holes, it was a laser-like approach to two feet at the third extra

hole that earned Pike the title and the \$36,000 winner's cheque.

Following the event, Molloy and his crew were lauded for their efforts in managing to present a golf course under such challenging conditions. Australian pro Blake Collyer was one of many to take to social media to express their gratitude. On Twitter he posted: *"Sometimes the hard work done when no one is watching goes unseen... To the course staff at Cypress Lakes and the PGA Tour of Australasia officials, without your hard work and long hours on the course preparing, this tournament wouldn't have gone ahead with the weather thrown at us. Thank you for all your hard work in trying conditions and presenting the course so well!"*

"Given everything that was thrown at us, the tournament was a real success," reflects Molloy. "All up we had 101mm the week of the tournament and more than 270mm in the weeks leading up to it. Without the dedication from the course and landscape team I don't know how the event would have happened. It was a massive effort from all concerned, including the PGA and WPGA team."

**It was a wet and soggy week at Cypress Lakes**

BONNIE DOON DELIVERS DESPITE DELUGE

Just as the team at Oaks Cypress Lakes Resort were challenged by the weather for the inaugural TPS Hunter Valley, so too was the crew at Bonnie Doon Golf Club (pictured) which hosted the TPS Sydney event the week earlier. From the Tuesday through to Sunday, when the tournament was officially reduced to a 54-hole event, Bonnie Doon received a remarkable 512mm of rain.

To get three rounds completed despite such precipitation was remarkable and a testament to the advantages of having a pure sand profile. The course held up admirably until the Sunday afternoon when a second delay due to heavy showers made it impossible to complete the final round. It wasn't the course but time constraints that convinced PGA Tour of Australasia officials to abandon the final round at 3.30pm, with the leading groups only through three holes when the decision was made.

Tied with Brendan Jones at 15-under at the start of the day, Jarryd Felton battled away to establish a two-stroke lead in



horrendous conditions, but was suddenly thrust into a playoff when scores reverted to the three-round totals. Felton would go on to birdie the first playoff hole to collect his fourth PGA Tour of Australasia title.

"The lead up to the tournament was interesting to say the least," recalls Bonnie Doon course superintendent Cameron Smith (CSTM). "We saw the rain coming in the forecast about three weeks out and changed a lot of our programs as a result. We pretty much had no opportunity to get any foliar/Primo applications in the 10 days before the first round, so we had to go with fairly high

rates of Primo, the last being applied on the Monday the week before.

"We applied penetrant wetting agents through the irrigation system during the beginning of the rain so we could pull water away as quickly as we could. Greens had multiple water moving applications during the week prior to the tournament and they came up trumps. It seems like a weird thing to irrigate during rain, but I believe this aided us dramatically to allow our sand profile to show what it really could do.

"Up until the first round we had 412mm over seven days and then further rain throughout the four days of the tournament. Despite all that we only had two bunkers GUR which were on the reclaimed land section of the course. We were able to mow all short cut areas throughout the tournament with only a few small areas slightly holding water. It was an immense test on the crew but they excelled in every way and I was super proud to be leading such a great bunch of legends."



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REDEVELOPMENTS

The new-look Royal Auckland and Grange Golf Club is a 27-hole Nicklaus Design comprising three separate nine hole courses – Middlemore, Tamaki and Grange. Pictured is the par three 2nd on the Middlemore course.

A living Legacy

In 2015, two of New Zealand's premier golfing establishments – Royal Auckland and Grange – merged to form the Royal Auckland and Grange Golf Club. Director of agronomy Mark Hooker looks back at the subsequent construction of the club's new 27-hole Nicklaus Design masterpiece which opened this summer.



ROYAL AUCKLAND
AND GRANGE
— GOLF CLUB —





Following extensive trials, Pure Distinction creeping bentgrass was chosen for the new RAGGC greens and to date has been a huge success. Pictured is the 9th green on the Grange course

February 2022 saw the completion of a five-year redevelopment project at Royal Auckland and Grange Golf Club (RAGGC) in Auckland, New Zealand. It was an all-encompassing project that included the amalgamation of two of Auckland's oldest golf clubs – Royal Auckland Golf Club (aka 'Middlemore') and Grange Golf Club – and the commissioning of Nicklaus Design to route a new 27-hole layout. The sale of surplus land helped to fund the NZ\$70 million dollar project, during which time 18 holes were continually maintained for members.

The project's origins date back to 2015 when both clubs voted unanimously

to amalgamate and start a complete redevelopment called 'Project Legacy'. Members all agreed that the close proximity of the clubs (located across the Tamaki estuary from each other), the land size and membership base provided an opportunity to future-proof and modernise the club. Both clubs had a relationship that went back as far as 1894 and between them shared a rich golfing history, hosting a total of eight New Zealand Opens.

Once amalgamated, the club developed a Project Control Group which contained a number of members with a vast array of professional skills required for input into various aspects of the project. That was

followed in 2016 by the commissioning of Nicklaus Design and the appointment of senior design associate Chris Cochran as lead architect. Chris would undertake a number of visits to New Zealand to develop a Masterplan, which included the layout of the new 27 holes and amenities and identifying areas of surplus land across the existing courses which could be sold to help fund the project.

The overarching design philosophy was to develop facilities and services that were comparable to the best metropolitan clubs in Australasia. The architect was to utilise the rolling nature of the Grange land, the access to mangrove wetland areas on the Tamaki estuary corridor and the beauty of the established parkland of the Middlemore course. The end result has provided the club with three contrasting yet equally challenging courses, with the ability to rotate courses with similar yardage.

GREEN LIGHT

In the spring of 2017 the Grange Golf Club closed its doors for the last time and the membership stream relocated to the Middlemore course at Royal Auckland to continue playing. The first stage of the development was to construct the initial



Around 11,000m² of bunkers were constructed during the course redevelopment. Better Billy Bunker was selected as the product to seal the bunker base gravel, with 2800 tonnes of bunker sand imported from Invercargill over a two year period

13 holes on the Grange property and the new bridge which would ultimately provide access across the Tamaki estuary to the new clubhouse on the Middlemore property.

In 2018, the construction of the new clubhouse started which required further hole closures on the Middlemore course. Temporary greens were constructed by the agronomy team to retain 18 (shorter) holes for the members on a land area of about 30 hectares. The closure of holes on the eastern side of the Middlemore course provided access for the golf course construction team to start work on five new holes (in addition to the 13 holes on the Grange property) which would ultimately be the first 18 opened for play in late 2019.

After opening the new 'Tamaki' and 'Grange' nines, the remainder of the Middlemore course was closed and construction of the final nine holes and practice facilities got underway. Despite COVID-enforced interruptions in 2020 and again in 2021, where our specialist construction shapers departed New Zealand, our agronomy team continued forward in two separate teams. One team continued to maintain and develop the 18 holes in play, while the other group continued with construction and grow-in related activities on the Middlemore course.

In December 2021, construction related projects on the Middlemore property were completed and the focus for the agronomy team switched to final grow-in and turf management preparation ahead of the grand opening in early February 2022.

TURFGRASS SELECTION AND GREENS CONSTRUCTION

As far back as 2013 a number of turf trials were undertaken to help identify grass selection for greens, tees and fairways and to also evaluate



In addition to using Windsorgreen couchgrass on the fairways, the club fully drained and sand capped (200mm) them to ensure the course is playable year-round

the performance of approved rootzone sands. Over the course of about five years, a number of creeping and colonial (browntop) bentgrasses were trialled in a research green on the Middlemore course.

The varieties were subject to various nutrient trials, wetting agent trials and herbicide applications for the prevention and management of *Poa annua*. Performance of the turf was closely monitored through both objective and subjective assessment and, by 2017, the club had selected the creeping bentgrass cultivar 'Pure Distinction' for both greens and tees surfaces.

During this time various rootzone sands from around the upper North Island of New Zealand were also evaluated to source a product that met USGA construction specifications and to ensure there was a consistent supply of sand and availability of volumes. A sand supplier south of Auckland was eventually approved and this sand was used for the construction of greens, tees and also fairways (and continues to be utilised for topdressing). Over the duration of the project, RAGGC procured over NZ\$2 million worth of sand, with about 63,000 tonnes used for fairways, tees and greens construction.

Greens were constructed using a modified USGA technique. Laboratory assessments of the rootzone sand showed ideal construction depths to be 300mm and we determined not to amend the sand. Auckland's high rainfall volumes mean that we don't need to retain moisture in the rootzone with peat. This technique formed part of the strategy to prevent *Poa annua* establishment.

Tees and fairways were both constructed with 200mm of unamended sand. The slightly shallower depth of sand over the tee blocks reduced drought pressure during the establishment grow-in phase and they continue to perform well.

Given the Middlemore course had such great historical success with Windsorgreen couchgrass in the fairways – not to mention the added advantage of having about eight hectares of couch sod on hand – it was a fairly easy decision to continue this species for the new course fairways. One major difference was the commitment by the club to fully drain and sand cap (200mm) all fairways to ensure the course is playable year-round.

For all other areas of the course (maintained and unmaintained rough), a blend of fine fescue cultivars (two creeping red

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Pure Distinction has also been used on all tees. Pictured from the tee is the 9th hole of the Middlemore course

fescues, one hard fescue and one Chewing's fescue) were selected. We worked closely with a New Zealand seed merchant company to develop this blend which provides the rough with an excellent range of environmental biodiversity.

IRRIGATION SYSTEM

A Rain Bird IC irrigation system was selected and installed for Project Legacy. With 18 holes under construction, 18 holes in play and the main irrigation reservoir needing to be emptied, de-silted, deepened and reshaped, the installation of an irrigation system proved to be one of the biggest challenges during the project.

The main water source for irrigation is stormwater runoff from the surrounding township. However, facing a drought over the summers of 2019, 2020 and 2021 and having emptied the lake, two 50,000L water tanks were used with artesian bore connections. This significantly restricted water availability for the grow-in during the first two summers.

In the third summer the lake was back up and operational, although we now faced water requirements for 18 holes in play (and ultimately still under grow-in) and nine holes which had just been planted and required regular irrigation throughout the day. Over the summer of 2020/21, the Tamaki and Grange courses were sacrificed to a degree to allow for the establishment and grow-in of Middlemore. The benefit of having couch fairways (which received very little irrigation) was plain to see.

POA ANNUA PREVENTION

The overarching objective with the turfgrass selection processes at RAGGC (outside the greens and tees) was to future-proof our agronomic systems with regards to the prevention of *Poa annua* infestation while still providing world-class playing conditions for members and guests. The selection of couch for fairways and greens surrounds and fine fescue for rough establishment allows for

multiple pre-emergent and post-emergent herbicide options. The strategy thus far has been successful.

Fairways are treated with a number of pre-emergent herbicides through the year, rotating four different chemical groups. *Poa annua* establishment in the couch is treated with either hand weeding, foam dabbing with glyphosate or boom spraying with selective post-emergent herbicides.

In the fine fescue rough areas (grown in native clay soils), *Poa annua* pressure is the greatest. In these areas our greatest success has been with post-emergent herbicides (haloxyfop) and continual drill seeding in autumn and spring to boost grass population.

In our creeping bentgrass areas (greens and tees), our entire agronomy team is responsible for vigilant hand weeding. This has been our strategy since sowing our first green in February 2018 and it continues today with excellent success. Our attitude is that if you are vigilant with hand weeding *Poa annua* from day one, you can most certainly keep surfaces clean. The greatest pressure period is the first year while the greens were growing in prior to surfaces developing a fine, dense surface canopy.

In addition to hand weeding, there are also other processes we employ to promote agronomic conditions that encourage the bentgrass over *Poa annua*. These include:



Adding a unique touch to the new layout, bespoke course furniture was constructed using macrocarpa timber sourced from the property

Fertility regime: Greens and tees are treated with the same fertility regime. Surfaces receive about 180kg actual N/ha/yr along with about 110kg of actual K. We put very little (if any) phosphate on our greens unless deficiencies occur.

Organic matter management: We monitor organic matter levels quarterly with results dictating thatch removal processes. Our target organic matter levels in the top 40mm is 4-6 per cent by volume. The objective is to ensure the greens do not retain excessive moisture in the surface.

SubAir: In a first for New Zealand golf, SubAir was installed in all greens on the property. A factor in approving this was the high rainfall volumes Auckland receives annually (average is around 1200mm) and the fact that SubAir would help maintain excellent air-water ratios in the rootzone every day of the year, thereby promoting bentgrass health and performance.

Gauging the success of SubAir (along with all of our other management regimes) can be quite subjective. However, the facts remain;

- We very rarely apply fungicides to our bentgrass surfaces (approximately 2-3 applications per year and only as a preventative application in most instances);
- We don't have any *Poa annua* issues;
- The Pure Distinction retains root depths >200mm, even in our oldest greens; and
- We are able to maintain surfaces with limited overhead irrigation (mostly hand watering slope areas) given the turf is healthy and rooted so deeply.

Growth regulation: Greens and tees are treated with paclobutrazol for 10 months of the year on a growing degree day application model. The growth regulator helps to maintain clipping yield rates and putting surfaces, while at the same time helping to highlight any individual *Poa annua* plants that might have germinated in the canopy. Over the hot summer months of January and February we look to switch out growth regulators to trinexapac-ethyl to change up chemistries on the bent.

Irrigation management: Having managed *Poa annua* greens at both the old Royal Auckland and Grange sites, where regular overhead irrigation combined with daily hand watering was required, it was critical that our agronomy team quickly understood the differences with creeping bentgrass management.

Average moisture targets with our old *Poa annua* greens in the top 75mm was 18-23 per cent volumetric moisture. In our new greens we have found the average moisture contents can be managed well below 15 per cent. The objective for our team is to manage dry surfaces – creating an environment that works

well for deep-rooted bent and conditions that are not suitable for *Poa annua* to thrive in.

BUNKER CONSTRUCTION

In addition to our cultivar and construction sand trials, in 2015 a bunker trial project was also undertaken with two objectives in mind. First, we installed a fairly new bunker base material and needed to assess its performance. Second, we needed to source a sand for the new bunkers.

A number of sands from throughout the North Island of New Zealand were sourced and tested for suitability by an accredited laboratory. Initially, four sands were shortlisted and a bunker was constructed at Middlemore with four separate compartments for members to practice from and ultimately help evaluate playability properties. In 2018 we selected one of the sands to move forward with and in 2019 placed this sand into a newly constructed bunker on the Grange property.

Interestingly, at the eleventh hour, the club decided that while the sand playability was excellent, it didn't provide the course with a 'wow' factor in terms of colour. A new search was therefore undertaken to source a sand that was both white in colour and also met with USGA bunker sand physical characteristics.

After some time we found such a sand, but the issue was that it was located right at



Trial grass paths installed in various areas of the course last year have been a success and will be further developed in 2022. The RAGGC roughs are a blend of four fine fescue cultivars

the bottom of the South Island of New Zealand – Invercargill. Initially, 20 tonnes of sand was transported to Auckland and the sand was placed in a bunker. The sand was quickly approved. It provided the aesthetic look the club was after and it was given the green light in terms of playability from a number of notable golfers at RAGGC.

Over the course of Project Legacy about 11,000m² of bunkers were constructed. Better Billy Bunker was selected as the product to seal the bunker base gravel and we imported about 2800 tonnes of sand over a period of two years.

LANDSCAPING

Once the new course routing was approved and resource consent applications started, in 2016 the club commissioned an external tree consultant to carry out an audit of all trees on the property as part of our resource consent application. The survey highlighted 2340 trees on the property and provided information around trees to be removed for the project (a total of about 800). The report also provided information around tree health and future management requirements.

During the construction phase about 100 trees were saved and relocated to a new area

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on the property with a large tree spade. This technique proved very successful, providing instant impact to the property in a number of areas. In addition to this, we soon discovered that a number of very old/large Monterey cypress (*macrocarpa*) needed to be removed. Some were of age where they were becoming dangerous and others were within the new golf corridors.

Macrocarpa is excellent timber for furniture so the club hired a mobile timber mill to harvest timber from the trees. The timber was set aside to dry while our talented staff developed a number of designs for the likes of tee markers, rubbish bins, hole number plinths, hazard posts, directional signage and driving range furniture (see photo page 38). Having constructed bespoke furniture unique to RAGGC is very special and using timber from the property takes it to the next level.

HR MANAGEMENT

The amalgamation of two golf clubs into one club can bring a certain level of angst to some. The merging of two maintenance teams can be a major challenge for any organisation and this was no different for us at RAGGC as the redevelopment unfolded. There were some members of staff that were extremely passionate about the old property and they didn't want to be a part of any redevelopment. Others started the journey with us but moved on at varying stages of the project.

The nature of a golf course construction project that continues for over five years and involves a team of over 20 is that you will unfortunately lose people. This was compounded by the fact that we essentially worked in two separate pods at RAGGC at all times. One team focused on the development and grow-in of the Grange and Tamaki courses, while the other maintained 18 holes in play for our membership. Then



The RAGGC agronomy team headed by director of agronomy Mark Hooker (middle, front row) and superintendents Andre Arthur (left of Hooker) and Lance Shaw (right of Hooker)

halfway through the project, once the Tamaki and Grange courses opened, the team on the Middlemore side had their turn for construction.

Working in two pods, while essential for our project, impacted professional and personal relationships between peers – and is something we continue to work on today. It has been challenging. Our team tries hard to carry out regular social activities together (for instance we have an annual fishing trip) and we regularly speak about our agronomy vision and objectives in monthly meetings. Ultimately, we have developed a very strong team, one that we are all proud to be a part of.

With the opening of the Middlemore course and all 27 holes now open, our team has become one again for the first time in over five years. For our two superintendents – Lance Shaw and Andre Arthur, who are both former graduates of Jacobsen's Future Turf Managers' Initiative – the time has now come to hone in on agronomics as we strive to set turf management standards that others look up to.

Looking back on what has transpired here over the past five years, I am extremely proud of what our team has achieved. Our two

teams, led by Lance and Andre, have achieved something very special that is only going to get better and better with time. Our head mechanic Bayley Pearson-Hoani and his assistant also deserve a special mention having managed the fleet of equipment across two properties, overseen the relocation into temporary facilities and assisted in the development of a number of legislative requirements for the likes of recycle washdown facilities, agrichemical storage and a fuel station. They also played a key role in the design and manufacture of our bespoke course furniture.

FUTURE GOALS

With the Middlemore course now open, it has provided the agronomy team an opportunity to step back to the Tamaki and Grange courses which opened in late 2019 and rectify areas that we now have a better understanding of. Having the third course open means we can rotate traffic more which has helped with any holes that still need some grow-in related work or any other areas that need altering.

We have earmarked work around course access paths – mostly drainage related work. We have also identified the need for grass (shortcut) paths and having observed where members walk we know the best locations for these. Work will be required to excavate these, install drainage and, in some instances, add irrigation before sodding them with couch.

We are also in the process of finalising our maintenance and agronomy complex, which will hopefully be completed in the next 2-3 years. This will involve setting up a new workshop, an additional machinery storage area and an agrichemical store.

While we are pleased our membership are enjoying the challenges of the new property, the club has aspirations of hosting a notable golf event in the next 5-10 years. While this is certainly a long-term goal, we will continue to evaluate the course for any minor improvements and fine-tune our maintenance practices as we move forward. 🌱



Middlemore hole 1 taken from the 2nd tee showing the different turf varieties being used on tees (bentgrass), in the roughs (fescue) and on the fairways (couch)



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Rain Bird normally stage their international awards ceremony each February in the USA, at the Golf Industry Show. This year however, the awards ceremony was live streamed, with Living Turf sweeping the pool in terms of awards won.

The **first** award for Living Turf was '**The Topflight Award**', for outstanding representation by a distributor in their region. Only a handful from Rain Bird's global distribution network received this recognition. The **second** award was for the '**International Salesperson of the year**', and was won by **Tyson Riley**, from Living Turf WA. This award recognised the individual sales person (globally) who "moved the needle" the most in their region.

Then, from over 50 Rain Bird distributors around the world, a judging panel awarded Living Turf with the prestigious '**Ed Shoemaker award**', for '**International Distributor of the year**'.

Guy Nichols, General Manager for Rain Bird Australia, says, "We have done a good thing for the Aussie market, in appointing Living Turf as National Distributor for Golf Products. This recognition from Rain Bird International validates the service Living Turf are providing to irrigation customers, who appear to be voting, in return, with their business".

CEO for Living Turf, Rob Cooper, responded, "Our irrigation team have really united around a common purpose this past 2 years - to advocate for Rain Bird Products and Technology, then back that up with quality service and support".

When asked what brought about such success, Mac Ross replied, "It is Rain Bird's technology, particularly the IC system, that has captured the imagination of our market. It is the dominant field control system in the golf and racing market, due to its simplicity, expandability and reliability". "The future however, is the new Cirrus Pro central control system, to be released in mid-2022. Cirrus Pro will provide total mobile control, meaning you can securely adjust your irrigation in real-time wherever you are, on any device".

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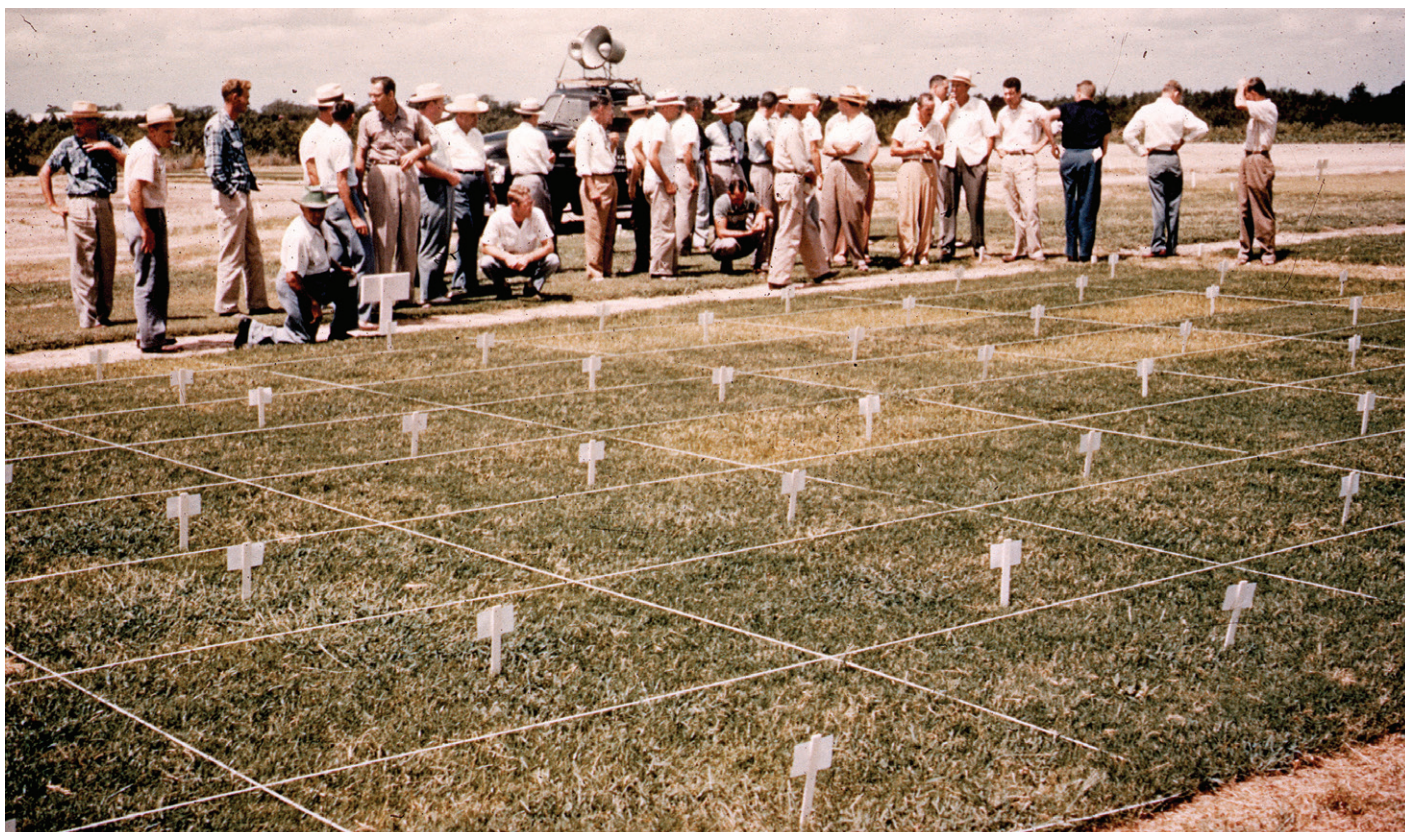
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Back through the archives

I was recently researching information on the salinity tolerance of creeping bentgrass and came across some information on Seaside bentgrass which was the first bentgrass that I studied as a turfgrass agronomist. I was surprised to note that Seaside bentgrass was selected over 95 years ago and has been the source of parent material for some of the improved cultivars that many golf course greenkeepers would be familiar with.

It got me thinking about the progression and advancements in the turf industry over my nearly 40 years working in turf and more importantly what were the origins of the many things that are now taken for granted. Whether it has been the development of new turfgrass cultivars or better understanding of turfgrass diseases, profile construction and plant protection chemicals, as I get older I believe even more fervently in understanding the history of the industry. This affords a better understanding of where the industry is currently and, more importantly, to avoid the problems of the past.

*ATM expert columnist John Neylan
takes a look back at turfgrass
development through the years.*

The Turfgrass Information File (TGIF) is a great resource for those that are interested in researching information on all aspects of turf management. Members of the Australian Sports Turf Managers Association have free access to the TGIF through the ASTMA website and I encourage all to take the time to log in and view the resources available.

In this instance I selected the USGA Green Section Record (<https://gsr.lib.msu.edu/>), which included what was known as the Bulletin of the Green Section of the U.S. Golf Association, as my main reference source. These documents go back to 1921 and provide a fascinating back story to the management of turf in golf. I have taken a look back from 1921 to the early 1960s and due to the amount of information have restricted this article to 'turfgrass development'.

BENTGRASS

Bentgrass (*Agrostis* sp.) is most often considered to be the premium grass for golf greens and over the past 100 years there has been considerable advancement in its development. The improvements in bentgrass have been through the diligent efforts of agronomists, plant breeders and greenkeepers and includes both seeded and vegetative types.

There are several articles discussing the iconic 'South German mixed bent' which was described as the most desirable seed for the golf course (Hillman, 1921). This early bentgrass mix was sourced from Europe and as most would be aware is most likely the basis of the Suttons Mix used at Royal Melbourne Golf Club (RMGC). The article highlights the origins of the grass and how it probably evolved and eventually would provide the source of parent material for future improved cultivars.

In the years prior to World War I it was traded under various names such as 'Agrostis stolonifera', 'Creeping bent', 'German bent'

Left: Field day attendees view turf fertility research plots at Texas A&M University in 1952

and various combinations of these names. The seed was imported from Europe, sometimes from Germany, but more frequently from Holland, Belgium or England. The origin of the seed, however, is southern Germany. Immediately we can see that purity of strain was probably unlikely and that with a 'shot gun mix' there would certainly be a species/cultivar that would survive under the climatic and management conditions that prevailed.

Hillman (1921) discussed seed purity and the various unwanted seeds such as redtop bent (*Agrostis alba*) which was used as a substitute for creeping bentgrass. There were four *Agrostis* species identified including *A. alba*, *A. tenuis*, *A. canina* (Velvet bent) and *A. stolonifera*, with the creeping bent being in a very small proportion of the mix. Seed of *A. tenuis* was determined as the most abundant ingredient of the South German mixed bent seed and generally constituted 75 per cent or more of the actual seed. The other species appearing in quantity was the Velvet bent (up to 50 per cent) and because it had a creeping habit probably gave the mix its name.

In an article written in 1922 (Anonymous, 1922) the author highlights that the German bent is gathered from wild native grasses. It was noted that if a putting green is sown to South German mixed bent, after five years' growth about half of the turf would be composed of Velvet bent and Carpet bent (*A. stolonifera*) because these two grasses form circular patches which increase year by year, while the *A. tenuis* plants do not enlarge perceptibly.

This is certainly characteristic of the original Suttons greens at RMGC from which



US superintendent Arthur Anderson points out Colonial bentgrass on a green at Brae Burn CC, Mass. in 1953

course superintendent at the time Jim Porter selected the best of to go into a breeding program. This variation or segregation is apparent today in old Pennncross greens and many of the more 'modern' cultivars such as Penn A1/A4 and Penn G2.

Because of the perceived issues with seed availability and purity, the first discussions around the vegetative propagation of putting green grasses were described as being simple and would make clubs independent of bent seed supplies. In developing the theme around vegetative grasses, the USGA Green Section selected and compared about 100 strains of bent grown vegetatively of which most were discarded (Anonymous, 1924).

A number of greenkeepers in various parts of the country also made selections of which some were promising. Interestingly we start to hear about the 'first turf disease' in brown patch which affected many of these selections. Another key point, which is absolutely relevant today, is that it was recommended that at

least three years of testing is required before deciding on a particular strain of bent. The best of these vegetative types included Arlington, Congressional, Cohansey and Washington (Radko et.al. 1964) and Snow (1982) noted the popularity and use of an Arlington/Congressional mix into the late 1970s/early 1980s.

Odland (1930) discusses the early bent seed production in the USA and the competition from seed supplies from Germany and, more interestingly, New Zealand. The early bent selection and breeding programs appear to have commenced at the Rhode Island Agricultural Experiment Station during the late 1920s.

As a young turfgrass agronomist, Seaside bent, Palustris bent and Highland bent (*A. tenuis*) were among the early bent cultivars that I became familiar with. Seaside bent was an early selection that occurred both in Europe and in America, mostly in marsh lands and on beaches along the coast (Anonymous, 1925).

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Turf professionals view research plots, including several bentgrass cultivars, at Los Angeles CC in 1953

Seed was harvested from several locations in Canada, Washington and Oregon. Again, we see that the harvesting of bentgrass seed was not necessarily from a single strain but from local, well-performing ecotypes.

The USGA Green Section had test plots at the Arlington Farm and tested various strains over several years. Apart from some strains being susceptible to brown patch, they were noted as being excellent turf-formers. Until around 1964, Seaside bent was perhaps the most widely distributed grass used for putting greens in the United States (Radko, et.al. 1964) and was the only creeping bentgrass of which seed was available until 1954 when Pennncross was released.

Seaside bent is a mixture of many creeping bent types and because of this heterogeneity, some of the plants in the population would likely be adapted to almost any set of geographic, climatic and management conditions that maybe imposed. The individual plants which were best adapted are the ones which persist. An older planting of Seaside would take on a mottled appearance

because of the development of individual plants.

Pennncross is a synthetic variety created through a polycross between three plant selections made from a Seaside bentgrass population (Radko, et.al. 1964). If we look at the newer bentgrass cultivars over the past 30 years, many of the parent plants can be tracked back to the individual plants/patches that developed in many Pennncross greens.

The ultimate test for any grass as a putting surface is how good a putting surface it forms. Much of the ratings on grasses are even today visual assessments of the agronomic characteristics and rarely do we see replicated trials assessing the putting quality of new grasses.

Monteith and Welton (1932) recognised that ratings were based on the agronomy of the new grasses and while instructive about how the grasses respond to different climates, soils and greenkeeping practices, the final test was how well they putted. The USGA Green Section invited 10 professional golfers to assess different species and cultivars as a

putting surface. Interestingly Velvet bent was considered by all the golfers as their number one choice.

HYBRID BERMUDAGRASS

The hybrid bermudagrasses (*Cynodon dactylon* x *Cynodon transvaalensis*), including Tifton 328 (Tifgreen), Tifdwarf and more recently TifEagle, have been the staple of putting greens and bowling greens in northern Australia for many years. The earliest reporting of the research into improved bermudagrasses for putting greens being undertaken at the Georgia Coastal Plain Experiment Station is around 1946 (Anonymous, 1946).

At that time Dr. Glenn Burton undertook a collection of naturally-occurring superior strains of bermudagrass and tested them for their qualities as a turf. In reviewing the literature, one of the main drivers for this research was to find a superior bermudagrass that had better characteristics when transitioning in the spring from a ryegrass oversow back to pure bermudagrass.

There were some 49 plugs from golf courses and 42 improved seeded bermudagrasses in the early trials of which there were two that had superior qualities as a golfing surface (Robinson and Burton, 1950). Even though the best selections surpassed other bermuda types, none of them obtained the fineness in strain approaching that of bent.

The latter problem was approached by hybridising Tifton No. 57, Tifton No. 55 and several of the best selections from golf courses with a very fine-leaved bermuda (*Cynodon transvaalensis*). The hybridisation produced 89 hybrid plants of which Tiffine was selected and released in 1953 (Robinson and Latham, 1956).

Tifgreen (Tifton 328) was one of the hybrid plants resulting from a cross between a selection from the 4th green at the Charlotte Country Club (taken in 1946) and *C. transvaalensis*. At the time of its selection, it was evaluated both agronomically and as a putting surface by professional golfers. It was eventually released around 1965 and is still in common use today in Australia.

ZOYSIAGRASS

Zoysiagrass is a relatively new grass to the Australian turf industry and to date has only been used in a limited number of site-specific circumstances.

Interestingly, zoysia was first mentioned around 1921 (Anonymous, 1921) and 1924 (Piper, 1924), with early collections undertaken around 1906 by Frank N. Meyer (Snow, 1982). In a review paper by Patton (2017), he notes that early collections from Asia were made in the late 1890s. Piper (1924) mentions Korean Lawn Grass (*Zoysia japonica*) and Manila grass (*Zoysia matrella*) in a dissertation on the value



Attendees listen to a lecturer on the turf research plots at Tifton, Georgia in 1953



From left: Velvet bentgrass patches showing greater drought tolerance than creeping bent at Edison CC, New York in 1950; Penncross (left) and Highland bent plots at East Lake GC, Georgia in 1950; and nitrogen fertiliser test plots at Virginia CC, Long Beach, California in 1960

of warm-season grasses on golf courses in the warmer/tropical regions.

In several papers it is noted that the main deficiency with zoysia was its slow growth and establishment and slow recovery from wear. These early documents also highlight the value of zoysia being its wear tolerance, excellent drought tolerance and good performance in the shade.

I find it interesting that zoysia has been of interest to the turf industry for as long as bentgrass and is clearly due to its suitability for warmer regions. The slow growth and establishment rate has always been seen as the most significant deficiency.

There was an extensive collection and evaluation of zoysiagrasses undertaken by Engelke at Texas A&M in the 1980's (Engelke,

1989) in the search for more genetic diversity and there was ongoing breeding programs and the release of new cultivars. The degree of uptake has been difficult to quantify though it does seem to be relatively limited.

In the 2000s there was a resurgence of interest in zoysia in the USA for use on golf course fairways in the transition zone. Again, this has been in response to the availability of water for irrigation and the need for low water use and drought tolerant grasses for the transition zone.

The cultivar 'Zeon' (known as Sir Grange here in Australia) was released in 1996 and was bred from the collections made in the 1980s. This example alone highlights the importance of these grass collections no matter how old they are.

TODAY

The area of plant breeding is quite amazing and takes many years of selection, crossing, evaluation of seedlings and then testing as a golfing surface before a new grass hits the market. I find it fascinating that there is parent material used today that has its origins back to these first turfgrass scientists and greenkeepers that were searching for grasses that were better adapted to local conditions to provide improved playing surfaces.

In some ways the drivers today are not that much different in that we are searching for grasses that require less water, have improved drought tolerance, while providing a uniform surface that is fit for purpose. At times though I suspect that surface quality overrides the importance of improved environmental

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The AGCSA hybrid bermuda collection plots at Lakelands Golf Club on the Gold Coast in the early 2000s

advantages such as low water use and drought tolerance.

Segregation and patches in both bentgrass and Tifton 328 greens has been a source of interest as we contemplate why certain 'off-types' grow well in a particular environment or are affected by diseases and weed invasion compared to other adjacent patches.

In an early project at the AGCSA, bentgrass and hybrid bermudagrass clones were collected from over 500 golf greens, propagated and evaluated as a potential putting surface (Neylan and Peart, 2004). The bentgrass collection yielded a very high quality bentgrass selection that was as good if not better than seeded cultivars such as Penn A1, Penn G2 and 007 (Peart and Geary, 2012).

This clone was selected from an old 'Suttons' green at Royal Adelaide Golf Club and had extremely high density, was a slower creeper and formed a very high quality putting surface. This is not unlike the best of the bentgrasses available today. The problem was it did not produce seed.

The question then was could we use it as a vegetatively propagated grass? Trials indicated that it could be readily propagated but there was minimal interest because seed producers need relatively high yielding grasses. Interestingly, some years after we offered the collection to the seed industry, we did receive an inquiry from a plant breeder looking for more germplasm – too late unfortunately!

There was also a collection of hybrid bermudagrass clones established at Lakelands Golf Club (Neylan and Peart, 2004) where the clones were assessed, the best of them grown in large plots and then further assessed both agronomically and as a putting surface. These trials also produced cultivars that had superior

characteristics to Tifton 328 and comparable to Tifdwarf and TifEagle. Because of the relatively limited market for hybrid bermudagrass in Australia there was no commercial interest in what were potentially superior and better adapted cultivars.

I think that it is always important to understand where we have come from as an industry and the basic tenets of what is trying to be achieved hasn't really changed over the past 120 years. The search for better adapted grasses is always high on the agenda and Peter McMaugh AM has driven this in Australia and has proven that we can do it as well as anyone in the world.

REFERENCES

- Anonymous. 1922.** *South German Mixed Bent Seed. Bulletin of the Green Section of the U. S. Golf Association. February 1922.*
- Anonymous. 1924.** *How to Select and Compare Vegetative Strains of Creeping Bent. Bulletin of the Green Section of the U. S. Golf Association. December 1924.*
- Anonymous. 1925.** *Creeping Bent and Seaside Bent. Bulletin of the Green Section of the U. S. Golf Association. April 1925.*
- Anonymous. 1946.** *Bermudagrass Selections. Timely Turf Topics. May/June 1946.*
- Engelke, M.C., and J.J. Murray. 1989.** *Zoysiagrass breeding and cultivar development. In: H. Takatoh., editor, Proceedings of the 6th International Turfgrass Research Conference, Tokyo, Japan. 31 July–5 Aug. 1989. Jap. Soc. of Turfgrass Sci., Tokyo. p. 423–426.*
- Hillman, F. H. 1921.** *South German Mixed Bent Seed Described. Bulletin of the Green Section of the U. S. Golf Association. March 1921.*
- Monteith, J. Jr. and Welton, K. 1932.** *Putting Tests Upon Bent Grasses. Bulletin of the*

Green Section of the U. S. Golf Association. December 1932.

Neylan, J. and Peart, A. (2004). *The collection and evaluation of Bentgrass (Agrostis spp.) and Couchgrass (Cynodon dactylon x Cynodon transvaalensis) ecotypes in old putting greens. HAL Project TU 1001 (March 2004).*

Odland, T.E. 1930. *Bent Grass Seed Production In Rhode Island. Bulletin of the Green Section of the U. S. Golf Association. November 1930.*

Patton, A. J., Schwartz, B.M. and Kenworthy, K.E. 2017. *Zoysiagrass (Zoysia spp.) History, Utilization, and Improvement in the United States: A Review. Crop Sci. 57:1–36 (2017).*

Peart, A. and Geary, J. 2012. *Evaluation of new Bentgrass (Agrostis spp.) cultivars compared to Australian vegetative selections. HAL Project TU 08002 (March 2012)*

Robinson, B. P. and Burton, G. W. 1950. *Breeding Bermudagrass for Turf. USGA Journal: April 1950.*

Robinson, B. P. and Latham, J. M. 1956. *Tifgreen – An improved turf Bermuda Grass. USGA Journal and Turf Management: April 1956.*

Radko, A. M., Moncreiff, J.B., Record, L. and Shuey, G.B. 1964. *Putting green grasses and their management – panel discussion. USGA Green Section Record. March 1964.*

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The AGCSA bentgrass collection plots at Kingston Heath Golf Club in the early 2000s

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Over the years

Following on from John Neylan's look back on the history of turfgrass development, Peter McMaugh AM reflects on the development and trends in bentgrass breeding and research.

One of the challenges that the editor gave me when he invited me to write a regular column for this magazine was to look into the past history of the science and practice of turfgrass management and to see how far we have come in the past 80 or so years and look at where we are going to be in maybe the next 20 years.

When I look at my record as a prophet, it is appallingly bad! I wrote an article 30 years ago which, as I read it today, makes me cringe. It was titled '*The Influence of Overseas Breeding Programmes*'. It makes very interesting reading because some of the topics I covered have not advanced today nearly as far as others, while some have changed completely or been abandoned altogether.

It is fascinating reading the names of the people working as plant breeders then. There were a lot more of both them and the companies for which they worked at that time.

While this is nostalgic and a lovely trip down memory lane for me, it doesn't show any ideas into the future that are today's reality. Let us look at a few of these.

The subtitle '*Golf Greens/Putting Surfaces*' is still very apt. But the subject matter? Thinking about bentgrasses, I wrote about an Irish selection and breeding programme based on using herbicide tolerance to select superior strains for *Poa annua* control. It looked big then but it is non-existent now. That doesn't mean that it was a bad idea. It just means that it has gone into the bottom drawer and will probably never come out again.

Much the same can be said about another programme based on selection for disease resistance; brilliant, but to the best of my knowledge not now routinely used. This work was done by Dr Jeff Krans, who Jim Beard described as the best student he ever had. Jeff went on to Mississippi State University where he carried out one of the most intriguing experiments I have ever seen.

He took a conventional Petri dish made of plastic and cut out a large square in the bottom. He did this to another dish so that he had a matching pair which he could join together. Into the bottom one he put a PDA agar gel which he inoculated with rhizoctonia. He placed this gel onto a micropore filter supported on a mesh between the two plates. On the other side he placed a nutrient agar with bentgrass callus growing on it. He then observed the callus dying, not from any fungal infection, which could not get through the micropore filter, but from the toxin produced by the fungus which could. The conclusion... rhizoctonia kills by a toxin, not invasion. This illustrates what a great lateral thinker he was.

Another great piece of lateral observation was in an experiment I viewed run by Dr Joe Vargas at Michigan in 1984. He was growing bentgrass that had been modified with genetic resistance to the herbicide Basta using gene gun technology. It was a hot humid summer as normal on the east coast of the USA and



When you get a total change in the dynamic of a species, such as the challenge that the ultra-dwarf bentgrasses have brought, then you need a total rethink of how you treat them from day one if you are going to stay on top of them

disease was rampant in the control plots. However, there was none in the genetically modified (GMO) treated plots.

What this says about the genetic changes that caused this is extremely hard to speculate



Like all other innovations that come into the industry, the new ultra-dwarf bents have their place, but definitely not everywhere. If you don't have the resources or the skills to look after them long-term, you should think twice

about, as this programme didn't proceed further to the best of my knowledge. It certainly did not produce any commercial result in the market place. Scientifically this is a most interesting piece of work because it is an indicator that the biological distinction between biological poisons as herbicides or fungicides may well be meaningless.

This raises the question of how important GMOs are in plant breeding and where the technologies are today as compared with yesteryear. You very rarely today see any discussion of the shotgun approach that the gene gun was. This technique was based on hope. You fired gold particles coated with DNA into plant callus and hoped the DNA would incorporate into the plant. The yield was low.

Today the new technology is all about gene editing via a technique called CRISPR. When I was at the Botany School at Sydney

University there was a student originally from South Australia who was doing a PhD in plant genetics with Dr Spencer Smith-White (Spiney). Dr Jim Peacock went on to become famous for his invention of gene shears, the forerunner technique to CRISPR, and became head of CSIRO Plant Industry.

One of the big objections of the anti-GMO sector, is that these techniques alter the genome of the plant and that this can and does in some cases create ecological or ethical problems. Now a new method of altering RNA rather than DNA, that works on the same principles as CRISPR, has been developed. This does not alter the genome, but rather provides a method of manipulating its expression that is not necessarily permanent.

This new technique looks at controlling the genes that produce proteins needed by

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the plant to function. It takes away a lot of the concerns that people have about GMOs and while it isn't yet widely used, I expect that within a few years it will be a major tool in the plant breeder's armoury. This will be able to be used across all turfgrass species and will probably get its first usage wherever the commercial rewards are greatest.

This makes it very interesting in the area of bentgrass breeding. While this genera is very important for golf, its proportion of the market compared to ryegrass, Kentucky bluegrass and tall fescue is miniscule. Today, the new kids on the block, the ultra-dwarf creeping bents, dominate the market. Thirty years ago I was talking mostly about Pennncross and what people were doing to improve it. I was also reporting that Dr Joe Duich had retired. Well, I'm not too sure about that in view of the ultra-dwarf bents.

If we return to Pennncross, it is still favoured strongly by some of the older superintendents, especially those on low budget courses with none to one or two staff. It is tough. What I was reporting were programmes about improving the heat tolerance, disease tolerance and vigour of recovery after damage from disease. Also in the frame was work in Japan where mutation breeding was being used to improve Pennncross bentgrasses.

The heat tolerance aspects were being worked on at Texas A&M Dallas under the direction of Dr Milt Engelke and Dr Virginia Lehman. They had used heated growing beds to shake out their survivors and had several lines with an '88' identification tag near commercial release. Two of these were released as Crenshaw and Cato. A similar programme from Rutgers gave us L93, a heat tolerant type.

I have already reported the work of Jeff Krans at Mississippi State. At the State University of Georgia, plant pathologist Dr Lee Burpee was working with bentgrass survivors in heavily damaged disease areas to build populations with a high repair rate. Again nothing to see now. At Rutgers Dr Mike Wilson was trying to introduce endophytes into bentgrass. This too has yielded no commercial results. In Japan they were reporting success using irradiation mutation to produce superior bents from Pennncross; I haven't heard about anything that has had commercial success out of that programme.

Meanwhile the most notable collection of bents of all types by Dr Dick Scogely (who is still alive and kicking) at Rhode Island was virtually abandoned by the bean counters. What was then a great programme is now a shell of its former self. It does, however, interest me that Dr Richard Hull is still there working in plant physiology.

It is interesting to look back and learn on the history of creeping bents. The majority



One of the most respected plant breeders in the business Dr Leah Brilman

of the seed of bentgrasses that went into the USA in the early days of golf were the so called South German bentgrasses (**see John Neylan's column previous pages for more on this – Ed**). These produced greens that were truly 'piebald ponies'.

Under the early USA scientists who were mostly connected to the USDA, such as Drs Piper and Oakley, a great deal of their work was in selecting superior individual clones of creeping bent and vegetatively multiplying them. You had almost 20 varieties you could choose between for how you wanted your greens to be. This was prior to World War II. Creeping bents are very largely native to North America. If you want further reading on this, there is a good chapter in Agronomy Monograph No.54 published by ASA, CSSA and SSSA in 2013.

If you look at Dr Beard's Turfgrass Science and Culture, you will see that even in 1973 he was still firmly locked into these older bentgrasses. Pennncross, which was released in 1954, hardly gets a mention. Not that Jim was noted for heaping praise on others.

When you look at the breeding of Pennncross, it was an open field poly cross of three different parent lines, which means that while you might see relative uniformity in a newly sown green, you were going to see increasing segregation over time with the 'piebald pony' look to greens notably developing after about the eighth year. Where this became an increasing problem was in the areas of high summer humidity when disease increasingly takes its toll.

This was exacerbated by the breakdown of the certification of Pennncross a few years into its production. This resulted in the withdrawal of all Pennncross material and replanting of the seed fields with new parent stock. It was because of the inherent genetic variation in Pennncross that the Japanese programmes, that I have mentioned previously, were able to achieve almost immediate new lines of promise.

It has always amazed me that the emphasis that Dr Bert Musser brought to the practice of seeding rather than vegetative propagation has dominated the industry to this day. Back before Pennncross, championed in Australia especially by Vince Church, and even after it became dominant, I tried very hard to persuade curators to take clones which were perennially good performers in their greens and vegetatively propagate them into sufficient nursery stock to plant out a full green. Although I got a handful of start-ups I never saw one taken to completion.

This has even been the case in more recent years where because it needs time and attention to detail there has been no desire to follow it through. This is not the only facet of golf course management where I have witnessed this. When the going to find a solution gets a bit tough, I have seen more episodes of throwing in the towel than I have of persistence. I can only cite once again how I admired Ray Strachan for his persistence – it was a trait that we both shared. It is also the one which has brought me most reward.

It was also one which Bert Musser had in his long career in turf in the USA and the fact that bentgrass breeding programmes in the USA university systems have been for the vast majority of my career dominated by Penn State. This doesn't mean that there haven't been great varieties of bentgrasses delivered by private commercial breeding programmes and the outstanding figure there is that of the indomitable lady Dr Leah Brilman. Today the world of plant breeding is now being dominated by big, big companies. It will be interesting to see if big means better in terms of varieties.

There is one thing that is certain in turfgrass management. When you get a total change in the dynamic of a species, such as the challenge that the ultra-dwarf bentgrasses have brought us, then you have to have a total rethink of how you treat them from day one if you are going to stay on top of them.

Like all other innovations that come into the industry they have their place, but that place is definitely not everywhere. If you don't have the resources or the skills to look after them long-term then you should shut the book on them. We can all have dreams, but before turning them into reality give yourself a big pinch to see if they are only daydreams. 🙏

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Fairy rings are caused by the pathogen basidiomycetes. The wide variation of fairy ring is because there are over 50 species of basidiomycetes fungi that cause them

Through the ring-er

After a particularly difficult summer for WA turf managers, John Forrest looks at the increased prevalence of fairy ring as well as some incidences of thatch collapse not seen before.

Fairy rings sound very mysterious and early signs or symptoms can often be difficult to read. In some texts it is said to be more prevalent when moisture levels are high. That's certainly not the case in Western Australia as the heat is slowly dropping off and areas that are a little hungry are having green patches starting to grow and stand out.

To look across the winter and summer and now autumn, it is clear what the catalyst may be – July and October were moist leading into WA's hot dry summer. Recent 2021 seasonal patterns align with the theory that fairy ring is more pronounced during a hot dry summer after a moist period. This season it appears to be a variation of cases, with some very small rings or part circles with pronounced dying rings or patches, while others are large and more than 10 metres wide. First the green ring then fruiting bodies appear without turf dying. It is confusing and some further investigation is required.

WHAT IS FAIRY RING?

Fairy rings are caused by a pathogen known as basidiomycetes, a fungus that produces sexual spores known as basidiospores. The

wide variation of fairy ring is because there are over 50 species of basidiomycetes fungi that cause them. The fruiting bodies (called basidiocarps) can be highly visible in the form of mushrooms and puffballs, with these structures containing the spores that enable the fungi to spread under the right conditions.

Pathogens are a microorganism that cause diseases. Part of the fungi is mycelium, a root-like structure consisting of a mass of branching thread-like hyphae which is a long branching, filamentous structure that plays an important role as the main mode of vegetative growth.

Therefore, the removal of the toadstools, puffballs or mushrooms reduces the number of infecting spores in the immediate environment, unless of course they have already been releasing. Removal is best at the early stage of development.

Couch (1995) outlined that fairy ring disease can be classified into two different groups – edaphic and lectophilic. Edaphic fairy rings are produced by fungi that multiply and spread in the soil, while lectophilic fairy rings are a result of fungi that multiply and spread in thatch and leaf litter. Couch (1995) believed mycelium could spread to a depth of 600-900mm. Short mown areas, such as

golf greens, are more likely to be affected by lectophilic fairy rings.

Basidiomycetes fungi are saprophytic, obtaining their food from decaying dead organic matter including wood, leaf litter and thatch. Parasitic fungi are different in the fact they require a living host.

TYPES OF RINGS

In Tani and Beard's 1997 publication *Color Atlas of Turfgrass Diseases*, they list three different types of rings:

- **Type 1:** Rings exhibit a zone of dead or severely injured grass, one or two zones of darker green, stimulated grass and basidiocarps (fruiting bodies).
- **Type 2:** Rings exhibit a single ring of darker green, stimulated grass and may or may not produce basidiocarps.
- **Type 3:** Rings appear occasionally as a circular arrangement of basidiocarps and have no visible effect on grass growth.

In most cases attention is drawn to the rings by green, actively growing grass and on many occasions on sports turf this is masked by the application of fertiliser. It is not until the dead or severely injured grass appears that concern is elevated.

Why the lush green growth when we have a saprotrophic fungus that feeds on dead organic matter? As the fungi spread laterally, they decompose organic matter in the turf environment. It is mainly thatch and during this process nitrogen is released. Older mycelium in the rings die and become an extra source of nitrogen, further enhancing the flush of growth.

Smiley, Dernoeden and Clarke (2005) in the *Compendium of Turfgrass Diseases* outline six possible causes:

- Ammonia accumulation occurring from the decomposing of organic matter.
- Soil biology increases where there is a source of nitrogen and when a population increases to a point where all the nitrogen is depleted below the threshold to sustain plant life.
- Fungi may produce toxic levels of hydrogen cyanide, a by-product of the combustion of nitrogen and carbon containing substances, with several fungi identified as cyanogenic. One of these is a species of basidiomycetes fungi called *Marasmius oreades*.
- Side-effects of the fungi may impact on the normal growth of the plant.
- Degradation of organic matter or older mycelium releases substances that create hydrophobic soil conditions. This can be clearly observed when a series of plugs are taken from a Type 1 fairy ring. If a plug is taken from the middle of the dead or dying grass and one from either side of the affected ring, comparisons can be seen. Plugs to the side will be moist and the plug from the ring will be very dry. In hot conditions grass health suffers quickly with no moisture around the roots. If nothing is done water continues to track down either side of the ring. Higher amounts of water on either side of the hydrophobic ring adds to the flush of colour and growth.
- Weakened grass within the rings is susceptible to any adverse conditions.

CLEAN SITE

Construction sites need to be free of any wood or debris that can create an environment suitable for basidiomycetes mycelium development. It also shows the importance of using quality compost if it is to be used on turf surfaces. Knowledge of the maturity and material used to manufacture the product is important, as are the nutrient levels to allow for calculations on rates to be made. Ask to see what is in the product as there have been many cases of facilities getting a cheap source with lumps of wood in among the compost.

This past summer saw an outbreak of thatch collapse on two bentgrass greens here in WA, the first time that the disease has been noted there

NUTRITION

Many of the fairy rings that can be observed here in WA at present start with a green flush and may not be clearly in a circle or arc. Low nutrition plays a part. During hot weather, nobody wants to push turf along and plan for an application pre-winter before cooler days and slowing of warm-season grass growth, therefore nutrition can be low. The term 'masking' is used when fertiliser applications are applied to get enough growth to match the stimulated growth of the fairy ring.

EARLY IDENTIFICATION

Taking plugs is a suitable method to identify low moisture and while localised dry spots are very similar they are not always caused by basidiomycetes. Early stages of development can be treated with similar practices. Wetting agents are a sound practice and injection certainly helps. Along with wetting agent applications, hollow-tining with small diameter tines set at close spacings is best to help water to penetrate and, as always, the more holes you can punch the better.

THATCH COLLAPSE

Thatch collapse is a condition caused by a basidiomycetes fungi *Sphaerobolus stellatus*. Recently an outbreak has been observed on two bentgrass greens here in WA, the first time that the disease has been brought to our attention. It appears as a slight green patch then starts to collapse, creating a sunken area on the green surface that has a major impact on ball roll (see photo below).

As with other basidiomycetes fungi, it decomposes the organic matter, in particular the lignin. Lignin is a substance found in vascular plants and is largely a supportive structure. When a plant material is broken down by microbes, there is a hard to break down material (lignin) that plays a substantial role in humus accumulation (the dark organic

matter just below the surface). Baetsen (2013) measured organic matter reduction of 28 per cent and 21 per cent after turf had been inoculated with *S. stellatus* for six weeks. *S. stellatus* is found in wood mulch and is known as white rot.

Unfortunately control for thatch collapse is not available therefore early identification is important and removal of impacted turf is needed. At the early stages a hole changer size is large enough to remove infected turf.

Once again, the extraordinary weather conditions we have seen here in WA have created environmental conditions that help in the development of diseases that are not generally seen. Good nutrition, use of wetting agents and cultural practices to assist water penetration need to be enacted as preventives which are always more effective than curative practices.

REFERENCES

- Baetsen, A. 2013.** *Confirmation of Sphaerobolus Stellatus as a Casual Organism Of Thatch Collapse of Turfgrasses. A Thesis in Agronomy, The Pennsylvania State University.*
- R.W. Smiley, P.H. Dernoeden and B.B. Clarke (2005):** *Compendium of Turfgrass Diseases, Third Edition. APS Press.*
- Couch, H.B 1995.** *Diseases of turf grasses. Kreiger Publishing. Malabar.*
- Fidanza, M. 2003.** *Combination Treatments for Fairy Ring Prove Effective. Turfgrass Trends. www.turfgrasstrend.com.*
- Fidanza, M., Colbaugh, P. and Davis, S. 2000.** *Fairy Ring Biology and Management in Turfgrass. Turf Diseases. Turfgrass Trends.*
- Nelson, S. 2008.** *Fairy Rings: Toadstools, Stinkhorns, and Puffballs. Department of Plant and Environmental. University of Hawaii at Manoa.*
- Tani, T. and Beard, J.B. 1997.** *Color Atlas of Turfgrass Diseases - Characteristics and Control. John Riley and Sons Inc. ㄿ*





The power of failure

Experiencing failure is an inevitable part of everyday life. But as management expert Ben Gibson writes, learning from such experiences will ultimately lead you down the path to success.

It is pretty scary how much of our self-perception and success comes from how we think, see and talk about ourselves. How we perceive our actions, their impact and utilise the learnings can determine if we enjoy leading a great team and achieving our goals or not.

If we can get our line of thinking right and see all of our experiences (both positive and negative) as valuable learning to be used to continually improve, we can influence our mindset to shift gears and look at supposed 'failures' as opportunities. It is how we choose to deal with situations that can shape their impact over our mindset and future success.

In the last few years I have heard so many stories of challenge, misadventure and misfortune across the turf industry and am blown away by the resilience, character and determination shown to overcome. These moments in our life define us.

When you hit a wall, hurdles or big challenges, dig deep and use it to shape who you are – your leadership, empathy and understanding when working with others. Just remember that everyone has a story that got them where they are today.

EMBRACING AND OVERCOMING ADVERSITY

I know for me, when things are humming along business is good, the family and team are happy and I am surfing well. Things just feel simple and clear. It seems fewer hurdles appear, people are more open and relatable and life in general seems to support me and my goals.

I have always found I learn more when the chips are down and I face adversity or unexpected challenges. Similarly, I often find I have learned as much from my poor managers and leaders as I do from my good ones – at times what not to do and definitely how not to treat people. Adversity provides testing moments that instigate change, shift mindset, force us to get out of our comfort zone and reassess our ideas and beliefs.

"As a leader, you should learn and extract more from your failures than your successes," expounds Royal Randwick Racecourse manager Michael Wood. "While you should always enjoy and acknowledge your team and its wins, in order to grow it's improving on those failures that will inevitably make you a better person and leader."

Steve Jobs was famously fired in 1986 from Apple, a company he founded in 1976, then used the break to found an animation studio that became Pixar Films, which is currently valued at approximately \$USD14billion. Incredibly, Jobs was then called back to Apple in 1997. Apple actually bought Jobs' new technology company NeXT for \$USD497million and got him as a part of the package in an effort to save the dwindling business that was rapidly losing home computer market share to Microsoft and IBM.

What followed was truly a technology revolution with Jobs being attributed with the development of the MP3 and portable music in the iPod, then subsequently the iPhone and iPad, which unequivocally changed the way we communicate, work and enjoy entertainment.

Jobs claimed his challenges and perceived 'failures' as his most valuable learning experiences and believed a lot of his development work would not have occurred without the thought process and 'reset' that followed them.

World champion surfer Mark 'Occy' Occhilupo has an inspiring story of meteoric success, the lowest of lows and then incredible



PHOTO: ETIAMMOS/ADOBE STOCK.COM

grit and determination to return to win a world championship. Occy rose to fame at the young age of 16 and was one of the youngest in the world (still to this day) to actually compete on the world tour. He had a really unique and distinct style of 'power surfing' that took the surfing world by storm. Yet the fame, riches and temptations of the world tour took its toll on young Occy and he spiralled into a world of alcohol and drug abuse.

He retired from the world tour at just 22 and after more than a decade of failed comebacks, substance abuse, binges, poor health choices and "too much time on the couch, fried chicken and beer", he had gained more than 30 kilograms and topped out close to 110kg, a lot for someone of his stature. Something had to change.

What followed was an inspiring journey of self-discovery, recovery and reconnecting with friends and training partners. His shift in mindset came from an inspiring trip with sponsor Billabong and friends to Western Australia. The plan was to do nothing but surf and reset, far away from big city temptations. It was a huge success and just what the doctor ordered. The trip was the trigger for change

and getting back on track. Sixteen years after first stepping onto the world tour, Occy historically won the World Surfing Title in 1999. He continued to enjoy another six years on the world tour and in 2005 he retired more than 22 years after first stepping onto the circuit.

Occy's comeback is arguably one of the most remarkable in world sport and stands testament to the power of mindset and our ability to use our failures and lows to build resilience, character and success. (As an aside, I was lucky enough to meet Occy briefly as a very excited 16-year-old. I got a poster signed and a 30-second chat with the Aussie legend at the 1996 Rip Curl Pro at Bells Beach in Victoria!)

The power and learning that come from failure are indisputable. The key is your self-awareness to connect with the challenges and identify the opportunities for improvement that come from them.

VULNERABILITY

It is important to clarify and demystify the idea of vulnerability and how we can be genuine and show vulnerability to build connections, improve relationships and help develop

others. Historically, being vulnerable has been defined as "capable of being physically or emotionally wounded and being open to attack or damage." For years the idea of being vulnerable at work was a no-no and aligned with weakness and a lack of leadership, confidence and strength.

Let's start by clarifying how we can employ vulnerability at work to help our team, develop staff and improve the connections we have with our culture. For starters, being vulnerable at work does not imply...

- That we need to cry on our team's shoulders and tell them every personal problem we've ever had;
 - That we must be 'best mates' with everybody; or
 - That we portray indecision or a lack of professionalism;
- Ways to be vulnerable at work include:
- Taking accountability when things go wrong;
 - Being open to admitting what you don't know and asking for help when you need it;
 - Sharing experiences – both good and bad – from your life to benefit others;
 - Using empathy and develop awareness;
 - Not shying away from tough conversations; and
 - Being authentic and genuine.

Your team will see it instantly if you try too hard to be vulnerable at work. Never...

- Use vulnerability to try to elicit pity;
- Use it blatantly to try to fast-track a relationship (only share when appropriate); or
- Take your conversations too far and make others uncomfortable.

Sharing the failures in your career or experience has also been shown to overcome occasional feelings of animosity or resentment from staff in your team, particularly if they wish they had achieved your position or held your role.

Harvard Business School assistant professor Alison Wood Brooks highlights the power of vulnerability and being human... "If you have achieved success in your career and hold a position of leadership or authority, your achievements are obvious," she notes. "It is more real and inspiring for others to learn about your mistakes. This creates connection, breaks down barriers and lets them know that you are genuine."

Are these experiences actually 'failures'? Much better referred to as 'valuable experience'. Just remember they are only a failure if you keep doing it over and over again and don't learn from it! 🙌



Not content with collecting the ASTMA Excellence in Golf Course Management Award at last year's Australian Sports Turf Management Conference, Oaks Cypress Lakes Resort superintendent Craig Molloy (CSTM) and his team have again been honoured. The renowned Hunter Valley course collected one of the major gongs at the Sports Environment Alliance 'SEACHanger' Awards which were held at the MCG in March.

The Sports Environment Alliance (SEA) – of which the Australian Sports Turf Managers Association is a member – was established with a purpose of protecting and enhancing the environment of Australasia by promoting sustainability, sustainable development, regeneration and use of resources.

Oaks Cypress Lakes was the recipient in the non-member category for its innovative and sustainable solutions for golf course maintenance systems, recycling and reusing over 30 million litres of wastewater and reducing water consumption by 18 per cent.

In collecting the award, Oaks Cypress Lakes beat home a wide range of sporting organisations and facilities and it complemented the Bayer-sponsored ASTMA Excellence in Golf Course Management Award that Molloy won at the 2021 conference on the Gold Coast. To give an indication of the stature and size of other organisations involved in the awards, the Australian Grand Prix Corporation, which puts on one of the largest sporting spectacles in the country each year, took out the SEA member category.

"It was nice to be recognised by an industry outside of golf for the work that we are doing," says Molloy, who also successfully led his team to prepare the course for the inaugural TPS Hunter Valley tournament recently. "We're enhancing and improving the environment and the award is a great recognition of that."

A member of the turf industry for 26 years, when Molloy arrived at Cypress Lakes in 2013 he was immediately faced by a crisis of water, with the only solution to purchase 120 million litres at a cost of \$76,000. In 2016 the bunkers on the golf course were reconstructed so that up to 5mm of rainfall would generate 12 million litres of water to feed into the irrigation storage that boasts a total capacity of 180 megalitres. But it was the ability to use treated effluent water from the resort and transfer it to the golf course that provided a water source that would otherwise simply be flushed down the drain.

"It was the first site I had worked on with effluent water and in 2013 when I started here water was an issue," Molloy explains. "We just had to come up with something. In 2013 it was so dry here. It wasn't drought conditions but it was really hot and we just didn't have enough



Green gong

Hunter Valley's Oaks Cypress Lakes Resort has been honoured for its water management and sustainability initiatives.

water to be able to produce decent surfaces. Without water we didn't have a golf course and we weren't able to succeed.

"To improve the property we had to be able to manage our water better. The last two years we haven't had to use any of the water

that we buy in. Not one drop. We've been self-reliant in our own practices."

The resort is now beginning to see the financial rewards that come from a sustainable management plan and have set their sights on positively impacting the environment even further. "Now we're starting to see some financial benefits of what we're doing and it's about trying to be as carbon neutral as possible," says Molloy. "That will be the next step, to reduce our carbon footprint even further."

As if to back up the benefits of taking such an approach to their operations, in the weeks after receiving the SEA award the resort was contacted by a multinational company which was planning to stage a five-week corporate event in May. One of reasons the company wanted to have the event at the resort was because of the many sustainable practices that are currently in operation there.

Throughout the event, the resort will be sharing its sustainability story, while the food and beverage department will be using biodegradable plates and cutlery made from used coffee beans, single-use water bottles and no plastic wrapped food.



Oaks Cypress Lakes superintendent Craig Molloy and Claire Wardley (Australian Grand Prix Corporation) collect their SEACHanger Awards



Instigated out of necessity, the water management plan implemented in 2017 at Oaks Cypress Lakes Resort was recognised at the recent SEA Awards

PHOTOS: OAKS CYPRESS LAKES. WORDS: TONY WEBB/BRETT ROBINSON



Molloy and his team at Oaks Cypress Lakes have committed to an innovation mindset to embed a culture of best practice experimentation and creativity

include the need to do more with less, to meet and exceed golfer and management expectations, to keep people safe and the environment protected, and to adapt to, and mitigate, the impacts of climate change.

"Golf course maintenance systems need to change to become more resilient, more equitable and future-proofed. At Cypress Lakes, we work hard every day to find practical ways to achieve this. It involves system innovation, which I call the 'big shift' because it involves a set of actions that have shifted our operating systems onto a pathway to excellence.

"For any golf course without a target, plan and sustainability pathway, there will

be increasing challenges, not only on environmental grounds, but also on whether our economic and business model will be future-viable. Here at Oaks Cypress Lakes we have committed our team to an innovation mindset to embed a culture of best practice experimentation and creativity.

"Through our excellence programs we have created something that is new and every day I encourage my team to change established ways of course maintenance, enabling our operations to adapt and thrive. Innovation in the golf sector can be a frustrating pursuit and frequently fails, but we have actioned a detailed innovation success strategy that is delivering significant results."

Molloy sees the many initiatives taken at the resort as an opportunity for other golf courses to examine their own practices and vision, particularly in an era when resources and staff are growing ever scarcer.

"The golf course maintenance sector is facing critical challenges," Molloy says. "They

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Expecting flawless performance from human beings working in complex, high-stress sports turf environments is unrealistic. It is therefore essential to have effective environment, health and safety programs in place



The burden of harm

Unsafe care resulting in unnecessary harm continues to inflict a considerable toll on people, society and the planet. Based on previous and recent evidence, harm resulting from sports turf maintenance operations remains a major environmental, health and safety issue with the true burden being continually under-reported.

The true burden – morbidity, mortality, disability, cost, pain, distress of workplace and work-related environment, incidents and injuries – are significant. Yet, because of under-reporting they are underestimated by many decision-makers.

This underestimation affects the way decision-makers view both the burden of harm and the value of investing in worker and environment protection. A simple burden assessment will include the individual worker, the worker's family, the community in which the workplace is located, the employer, society as a whole, the business brand and management's risk appetite. It will also take a broader view of the work-relatedness of disease, injury and pollution and assess the entire impact of the working-life continuum, concept of 'well-being' and the overall sustainability of the business.

PREVENTABLE INCIDENT

The sports turf sector needs to do more to improve burden estimates and burden

A recent WorkSafe Victoria ruling following the death of a groundsman has again highlighted the importance of investing in adequate WH&S systems writes compliance expert Terry Muir.

outcomes. The death of a groundsman from a chainsaw incident in 2018 and the recent conviction and fining of his employer is of relevance here and begs the question – how did we get here and why the obvious burden of harm was so significantly underestimated.

In this case, the employer was fined \$90,000 for failing to provide or maintain safe systems of work and another \$50,000 for failing to provide information, instruction, training or supervision. This was after the employee was found with a fatal head wound, lying next to a large eucalyptus branch, with inadequate PPE and two chainsaws nearby, one of which was still running.

Simple interventions like procedures, training, risk assessments and communication could have avoided this preventable incident. The burden of harm could have been minimised if preventable factors were

appropriately considered and actioned. This incident was influenced by inadequate burden estimations by the employer. This limited the ability of decision-makers to initiate and prioritise targeted interventions and resulted in a death because of the inability to evaluate the effectiveness of the existing and required interventions. The importance of estimating true burden is to use it to plan investments in environment, health and safety interventions and to prompt decision-makers to allocate funds for such investments. On this occasion the employer failed.

The burden of harm is multidimensional and has an impact not only on the worker and their family, but also the employer, the community and society as a whole. Had these factors been truly considered, a more accurate and detailed accounting and consideration of burden would have eventuated and the fatal incident may not have eventuated.

DOLLARS AND SENSE

So, let's crunch the financial numbers of this fatal workplace incident and the costs of implementing simple harm prevention measures. The direct costs are the health system resources needed to ameliorate the effects and consequences of the harm to the worker. This includes medical care and attention that would not otherwise have been needed had the worker not been harmed in the first place.

The direct expenses of this accident and resulting injuries or any environmental clean-up are fairly straightforward. These are the numbers directly represented in accounting features and therefore recognised as impacting on your business profitability. They also include medical, hospital and rehabilitation expenses, and workers compensation payments. These direct costs are obvious and can be high, but they are only a portion of the total cost the company pays as a result of the incident.

The indirect costs, or hidden costs, cover all other downstream consequences of the unsafe care. Based on a human capital approach, these costs comprise:

- Lost time of workers and those that rendered assistance;
- Lost productivity;
- Incident investigation and reporting time;
- Staffing issues;
- Welfare payments or financial compensation; and
- Brand and reputational damage.

Indirect costs can also include the lost wages and decreased productivity of co-workers who are often described as the 'second victims' of unsafe care.

Let's unpack this and look at the economics of the fine for the fatal chainsaw incident. We can do this by examining the level of sales the business must achieve to pay for the cost of a workplace incident and fine and maintain their existing profit margin.

Many will view the total financial fine for the workplace fatality of \$140,000 as low. If we calculate its impact on the profitability of the business and include the indirect costs of the incident, the true costs and the cost burden is staggering.

To simplify it, we have included just the direct cost of the fine at \$140,000. The indirect costs of this incident are calculated at

HAZARD IDENTIFICATION & REPORT	
PURPOSE AND SCOPE	
The procedure has been developed as a guide to ensure the hazard is understood, what potential hazards may be encountered, how to find effective ways to report and manage those hazards.	
DEFINITION	
Identifying hazards involves finding all of the things and situations that could cause harm to people. Hazards generally arise from three aspects of work: The physical work environment. The equipment, materials and substances used. The work tasks and how they are performed.	
PROCEDURE	
All staff need to be aware of the hazard reporting procedure.	
If a hazard is identified, staff must complete a Hazard Report as soon as possible.	
A detailed description of the hazard needs to be provided for controlling the hazard.	
Contractors and volunteers must report all hazards to the Metropolitan Golf Club management. After a hazard report is received, the Coordinator will then complete a Hazard Report.	
The Metropolitan Golf Club management, after reviewing the Hazard Reports and conducting a risk assessment, will then implement controls to manage the hazards.	

Simple interventions can avoid preventable incidents

\$154,000 for a combined direct and indirect cost of \$294,000. If we assume the business is operating on a five per cent profit margin, then the revenue required to offset the loss of \$294,000 is \$5,880,000. This is the estimated additional sales needed to maintain this company's five per cent profit margin.

Now let's examine a \$1500 fine for a small chemical spill event in your chemical store. The direct cost is \$1500 and the indirect costs of this incident are calculated at \$6750 for a combined direct and indirect cost of \$8250. If your business is operating on an annual five per cent profit margin, the total profitability impact on the business is \$165,000. This represents the sales required to pay for the

fine and to maintain your five per cent profit margin. This certainly makes the cost of that \$50 spill procedure, a \$200 spill kit and some training look like a great investment.

SYSTEMS INVESTMENT

The best way to address your burden of harm and minimise its impact is to implement an effective environment, health and safety program to reduce the likelihood of incidents, prosecutions and fines in the first place. The cost of implementation or improvement of your risk management systems will quickly be recouped in reduced injuries, often with a high return on investment.

To err is human and expecting flawless performance from human beings working in complex, high-stress sports turf environments is unrealistic. The burden imposed by occupational injury and illness encompasses numerous areas of personal and public life. It also includes the economic component of loss which as we all know assists decision making. If the burden of harm is fully understood, safeguarding processes can be actioned.

Currently, many decision-makers are not widely aware of the burden of work-related injury, illness, distress and environmental pollution events. Therefore, they have not moved to support the need to address these issues in a comprehensive way, even though existing partial estimates of the burden – particularly economic ones – related to work and work-related hazards have shown it to be significant.

If the sports turf industry can develop a more comprehensive understanding of the true burden of harm, it may well influence decision-makers to commit to the appropriate investment priorities and spend a fraction of what they'll save – in lives and money. Don't give up... it's a safe investment. 🌱



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Murray Downs G&CC, NSW

For the past two years Terry Dewhurst has been cutting his teeth in his first superintendent posting at Murray Downs Golf and Country Club.

Superintendent: Terry Dewhurst (32).

Family: Wife Melisa, son Emilio (two months).

Period as a superintendent: Two years.

Association involvement: ASTMA, VGCSA.

Turf management career: Apprenticeship Murray Downs starting in 2007; The Ohio Program 2011-12; assistant superintendent 2013-14 Robert Trent Jones GC, USA; assistant superintendent 2018-19 Murray Downs; superintendent 2020-present Murray Downs.

Qualifications: Certificate 3 Horticulture (Turf Management).

Major hobbies/past-times outside of turf management: Outside of the golf course Melisa and I bought a 180 hectare farm two years ago just out of Swan Hill that I work in conjunction with my dad's farm.

Where in Australia is Murray Downs G&CC? Murray Downs is located across the Murray

River from Swan Hill which is about four hours north of Melbourne. It is a major agricultural region. Murray Downs also owns the Swan Hill Club and Spoons Riverside Café, so we are much more than just the golf course.

Tell us a bit about your background, how you started out in the turf industry and who some of your early mentors were. I was born in Swan Hill and grew up on an irrigation farm where we ran cattle. I finished Year 12 and had little idea of what I wanted to do. An apprenticeship opportunity came up at Murray Downs, I applied and got the position to work under then superintendent Andrew Abbott. Being off a farm I was comfortable on any bit of equipment and quickly found a passion for the industry.

My apprenticeship under Andy was very hands on and he was a fantastic teacher by leaving me to figure a lot of things out by

myself. I'm sure I made many mistakes, but it really made me think about what and how I was doing things. It's an approach I try to use with the apprentices that are now under me. I want my guys to be always looking for things to do and coming to me with ideas for their next job rather than just going through the motions.

Towards the end of your apprenticeship, in 2011 you headed off to the US and The Ohio Program. Where were you placed and what did you gain from your time over there? My first placement was at Robert Trent Jones Golf Club in Virginia. RTJ had a fantastic intern program and we worked directly alongside the assistants which provided a great opportunity to see a whole new level of greenkeeping. During my time there I was also able to volunteer at the 2011 US Open at Congressional Country Club. From there I went



Last year Murray Downs celebrated its 30th year and over that time has cemented itself as one of the best courses along the Murray. Pictured is the 5th hole



to the Blue Monster course at Doral (Miami) in preparation for the World Golf Championship. I was at Doral just before Donald Trump took over and gave it a complete overhaul.

My final placement was at Quail Hollow in Charlotte, North Carolina under Jeff Kent. Quail Hollow was a high-pressure environment and I was one of 10 interns there. Jeff ran a tight ship but was a master at his craft. I was lucky to be involved in the 2012 Wells Fargo Championship, which was Jeff's last at Quail Hollow. It was great to be part of such a well-run tournament and I got the plum job of changing the back nine pins for tournament week – I have never felt so much pressure cutting a straight pin!

Murray Downs is on the NSW side of the Murray River from Swan Hill, four hours north of Melbourne



Murray Downs superintendent Terry Dewhurst (left) with apprentices (from left) Darren Wardle, Josh Stanyer (front, kneeling), Oscar Hier and Ben Hallam

Obviously The Ohio Program is a well-worn route for many aspiring greenkeepers to take. How beneficial was it for your career?

Like many others before me, I cannot speak highly enough of the program. To get the opportunities I had is something I am very grateful to program director Mike O'Keeffe for and I don't think I'd be where I am today without that experience. It was like another apprenticeship – lots of work and long hours, but the results spoke for themselves. To drive around these perfectly manicured courses everyday was something I really enjoyed. It helped me develop a passion for detail, something that I try to replicate here at Murray Downs the best I can.

For those looking to undertake an Ohio internship, what advice would you give them? It's not only great from a professional

perspective, but also for your personal development. It's not easy to pack up your life and move to the other side of the world, but it was definitely rewarding and a great thing to have on your CV. It's a different world of greenkeeping over there, especially in regards to the resources at their disposal, so take it all in as much as you can and enjoy the ride!

Talk about the path you took to eventually being appointed superintendent at Murray Downs? After The Ohio Program, in 2012 I returned to Murray Downs to finish the last six months of my apprenticeship. I then went travelling and in that time got an assistant superintendent role back at RTJ between 2013 and 2014. That role taught me how to manage staff, as basically the role of the assistants was to solely manage the crew and not do as much labour. Once again it was a great experience,





In addition to the championship golf course, Dewhurst and his crew also maintain three Tifdwarf bowling greens for the club's 750 sporting members

but I decided the US wasn't for me long-term, so rather than doing another visa I went travelling through South and Central America. I floated in and out of the industry for a while. My wife is from Guatemala so I was living there back and forth until her visa came through.

I returned to Australia and started as assistant superintendent at Murray Downs in 2018. In 2020, around the same time that COVID struck, I stood in as superintendent while the club advertised for a new superintendent. I didn't really want the job at the time as we had just bought the farm and I was happy sitting back as the assistant. However, with applications getting pulled twice because of COVID restrictions, I decided to put my hat in the ring and give it a go. I'm glad I did as I am really enjoying it so far and can't thank enough the Board for backing me in.

Last year Murray Downs celebrated its 30th year and over that time has cemented itself as one of the best courses along the Murray. Give us a quick overview of the course – is it an easy/hard facility to manage? Murray Downs is a Ted Parslow-

designed course, renowned as one of the top Murray courses. It's a well-designed course for all handicappers, with large undulating greens and fairways, challenging bunkers and lots of water hazards. Like all golf courses we certainly have our challenges but I'm not too bad off. I have a great team of 10 that is enough to get the extra things done here and there rather than just trying to keep up. Having plenty of water and not having to worry about running out in summer is nice. A progressive and supportive Board and committees allows us to just tick along nicely.

What course management changes have you made since taking over as superintendent? Since starting I've spent a lot of time moving and adding irrigation to areas. When I came back as assistant I found myself hand watering exactly the same spots as I did as an apprentice, so I've been measuring out distance and moving a lot of greens heads to get better coverage. Last summer it proved very beneficial. It might seem a bit tedious moving a head 2-3 metres, but it really did seem to make a difference.



I can't take credit for this, but when I took over we had five carries cut down to short cut height, so from tee to green it was all cut at 10mm. The members seemed to like it as a topped tee shot didn't get lost in thick rough, while the ladies got a bit more run out of their drives. Also with cart traffic there were worn tracks through the carries anyway. We made the decision to cut the carries down on all holes, thus eliminating mowing tees as a separate job. Now we mow everything together at the one height.

I also started spraying pre-emergent and insecticides wall-to-wall. It doesn't seem to add too much to the overall cost of anything and if anything it is a lot easier to maintain.

Outline any course projects that you have undertaken recently or are currently undertaking? Our gardener Chris has started working on a tree replacement program with the aim of planting around 100 new trees each year. The course is over 30 years old now and we have been losing a lot of the original trees in recent years. We are trying to get ahead and have new trees establishing. We have focussed on planting local native trees and shrubs that are better suited and can survive our unique climate.

Over the past two summer we have also focussed on eliminating couchgrass from our greens, painting any spots that come up and plugging them out. We did the centres of the greens last year and are going for the encroachment around the edges this year. It's not a great job and a bit daunting, but it must be done before it gets too big that plugs can't replace.

How has COVID-19 impacted your operations and the club? It was a challenging time, but I guess because I only started as superintendent around the time COVID first hit I haven't really known any different. We just rolled with the challenges as they came. I was lucky to have a well-stocked chemical shed, so even when money got tight I was still able to put my applications out. JobKeeper was a lifesaver but I did have to stand most of my guys down for periods of time over the last two winters.

Overall how has the club fared through it? As a regional club that relies a lot on travelling golfers, did it hit the bottom line hard? The club did get through it, but with border closures and the main town being in Victoria and very little infrastructure on the NSW side, it was extremely frustrating navigating the ever-changing rules. With Victorians not allowed to come to NSW, it left

Over the past two years all tee carries have been cut down and from tee to green all short cut Wintergreen couchgrass is now maintained at 10mm

us with the doors closed for long periods of time. Like many Murray courses we rely on tourism so it wasn't a great year or two, but we are optimistic that's in the past now. We have had lots of guests coming back recently and it's good to have them back and to hear their positive feedback about the course.

What was the most difficult aspect to deal with from your perspective? How did your crew fare? The hardest part was just the uncertainty of it all. Rule changes would happen then change the next week – one week the course would be closed, then open, then closed again, then only local NSW residents could play. It was very difficult to plan anything. I couldn't get any winter projects done as I couldn't plan on having any of the guys in to do them, so we just sat idle for a while which was frustrating.

Were there any positives to come out of COVID? It was nice to see the course and turf surfaces take a breath with less play for periods of time.

Water is obviously a critical issue for any golf course. How does Murray Downs fare in the water management stakes? I'm fortunate that years ago the club purchased a large amount of high security river water,



The past two summers Dewhurst has focussed on eliminating couchgrass from the Murray Down greens

so water is one thing I honestly don't have to worry about. The Murray River always has pretty good quality water continually flowing past. With that though comes the expectation of not having any dry areas, so we have about 60 hoses with knockers on the course from November to April. I'm continually adding

areas of automatic irrigation to keep reducing the areas we need to drag hoses around, but it's a good problem to have. In 2018 we got a full set of course pumps and this year we upgraded our river pump.

The weather and climate is always a great leveller. How has Mother Nature treated the course in recent times? I can't complain about the climate. I know to expect heat in the summer, but compared to the extremes I experienced in the US I'll take hot and dry any day of the week over insane humidity and snow in the winter! We get the odd storm that will bring some branches down and I'd love more rain, but weather is the one thing I cannot control.

The one product I couldn't manage my course without is... I have two – growth regulators and wetting agents.

What have you got in your shed? Predominately Toro throughout. I got a new John Deere 75hp tractor and Peruzzo verticutter last year so we can scarify fairways in play. We use Mules as our utility vehicles as well as a couple of golf carts, although the boys probably use them more to play golf in. Our fleet is aging but Jamie our mechanic does a fantastic job of keeping them out there



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week after week. I would love another 3575 fairway mower given the way we now cut all our couch surfaces.

Best advice you have received about being a superintendent/greenkeeper and who gave it to you? "If in doubt, do nothing." – S. Furlong.

What do you think is the most challenging aspect of a superintendent's role today?

Expectations only ever seem to go up and naturally we as superintendents want to keep improving every aspect of the course, but often little notice is given to the challenges we face to provide these improvements. I bet not many course budgets have risen at the same rate as fertiliser, machinery and fuel prices

have over the last year, yet we still manage to progress the course. We just need to keep thinking outside of the box to get more out of less. Getting staff is another challenge – I'd be lucky to get two applicants for any position advertised at the present time.



The Murray Downs greens complexes are large and comprise 1.7 hectares of Pennecross bentgrass and 0.5ha of fescue collars

Murray Downs is a Ted Parslow-designed course, renowned for its large undulating greens and fairways, challenging bunkers and plenty of water hazards. Pictured is the 17th

What have you worked on personally in recent years to improve your skills as a superintendent? Only being in charge for the past two years I've been busy just learning how to run a golf course. It is certainly a big step from assistant to superintendent. People management in general would be the thing I've struggled with the most, so I take any opportunity I can to improve my skills in this area.

What gives you the most job satisfaction and what has been the most pleasing moment during your time at Murray Downs?

Tournament days that we have spent a month getting ready for would be the most satisfying for me. To watch everything fall into place and all the boys jumping in to help each other out to make the course as good as we can get it, it's a good feeling to see it all unfold.

Being a superintendent can be an unforgiving role but one that is ultimately rewarding. What keeps you coming back every day? I love the challenge. Golf courses are so responsive to the work that gets put into them. It's satisfying to drive around and seeing all the little improvements we do as a team and the difference they make.🌱

AT A GLANCE – MURRAY DOWNS G&CC, NSW

Course specs: Par 72, 6200m 18-holes plus three Tifdwarf bowling greens. We have quite large green complexes – 1.7 hectares of Pennecross bentgrass, 0.5ha of fescue collars and 34ha of mown Wintergreen couch (23ha short cut and 11ha of rough).

Members/rounds: Sporting membership 750/35,000 rounds.

Major tournaments/events: The Murray Open is our biggest event, which is now a qualifier for the NSW Open. We have that for the next few years. We also held the NSW Men's Senior Amateur in 2019. As far as club events go, the Golden Putter is one of our biggest in June, as well as a run of tournaments in January. We are hosting the VGCSA Country Meeting across two days in early August.

Staff structure: We have a crew of 10 – Terry Dewhurst (superintendent), Pat Caldwell (assistant), Jamie Sutton (mechanic), Chris McKenzie (gardener), apprentices Ben Hallam (1st year), Darren Wardle and Oscar Hier (2nd year) and Josh Stanyer (4th year), Graeme Cox (bowls curator) and Leigh Mathews (labourer). My assistant Pat started

his apprenticeship here in 2002 and has never left. He knows exactly where every single valve box is and his course knowledge is second to none. We don't have any volunteers as a club policy.

Climate/rainfall: Swan Hill's climate is pretty good for grass without too many extremes apart from some summertime heat. We know to expect heat from December to March and it's not uncommon for week-long periods of 40-plus in January and February. They can be a drag but with the right prep we can ride them out. It's also cold enough in winter for the couch to go dormant. Average rainfall is just 350mm per year.

Terrain/soil types: Murray Downs was built over the natural river clay with a sandy rise through the course and has been shaped to be quite undulating.

Water sources/irrigation system: We pump out of the Murray River into our main dam on the 12th then pump onto the course. We have a hydraulic irrigation system on the course and last year we were able to update the control system to Toro Lynx.

Cutting heights/regimes: We cut greens at

3.2mm 3-4 times a week. All short cut couch is at 10mm, rough at 50mm.

Renovations: Greens are renovated a minimum once per year, usually in September. I have them booked in for next March as well. The couch surfaces we do in house when I can as much as possible, but it can be tough to get over such a big area with our gear.

Major disease pressures: Disease pressure isn't too bad compared to other areas in the country due to our pretty dry climate. I don't really run a preventive program, but definitely have sprays in the shed ready to go. It's an uneasy line to walk at times, but the money I save can be better spent on other areas of the course. Fairy ring I do spray for preventively and that's working to reduce the severity of it in summer.

Anthraxnose and some patch diseases pop up now and then, but since taking over I've been focusing on getting my soil and plant health to a good place. That's helping to promote a stronger bentgrass that can handle the pressures of our climate and I feel like we are heading in the right direction.

ASTMA CERTIFICATION PROGRAM

The ASTMA congratulates the following sports turf managers who have achieved certification and can proudly use the **‘Certified Sports Turf Manager’ (CSTM)** designation after their names...

Tim Allen The National Golf, Belgium	Adam Fry Kooyonga GC, SA	John Nelson Grafton District GC, NSW
Dean Bailey Rosanna GC, Vic	Ryan Fury Killara GC, NSW	James Newell Magenta Shores G&CC, NSW
Shane Baker Mosman Park GC, WA	Jake Gibbs Elanora GC, ACT	Kelvin Nicholson Palmer Coolum Resort, Qld
Brett Balloch Anglesea GC, Vic	Danny Hack Wellington Shire, Vic	Matthew Oliver QSAC, Qld
Ed Barraclough Cardinia Beacons Hills GC, Vic	Cameron Hall Kew GC, Vic	Shaun Page Southern GC, Vic
Mark Bateman Koorringal GC, Vic	Gareth Hammond Terrey Hills GC, NSW	Luke Partridge Manly GC, NSW
Tim Bayard Evergreen Turf, Vic	Brendan Hansard Kew CC, NSW	Mick Pascoe Noosa GC, Qld
Duncan Begley Horizons Golf Resort, NSW	Nick Harris Wentworth Club, UK	Ben Payne Peninsula-Kingswood CGC, Vic
Nathan Bennett The Royal Adelaide GC, SA	Marcus Hartup Vattanac Golf, Cambodia	Michael Pearce RACV Torquay GC, Vic
John Berthon St Georges Basin CC, NSW	Mitch Hayes Living Turf, Qld	Jeff Powell Ballarat GC, Vic
Paul Bevan GTS, Qld	Matthew Heeps Evergreen Turf, Vic	Keegan Powell The Sands Torquay, Vic
Shane Bisseker Whitsunday Council, Qld	Luke Helm Meadowbrook GC, Qld	Luke Primus Deakin University, Vic
Robert Bloom Pelican Waters, Qld	Tony Hemming Optus Stadium, WA	Scott Prince Evergreen Turf Vic
Andrew Boyle GTS, Vic	Kirsty Herring Mackay Regional Council, Qld	Shaun Pritchard PEGS, Vic
Justin Bradbury Camden GC, NSW	Tim Hoskinson Cairns GC, Qld	Justin Rankin Kooindah Waters GC, NSW
Nathan Bradbury Eastlake GC, NSW	Ian Howell Bonnie Doon GC, NSW	Peter Rasmussen STRI, Hong Kong
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Chris Burgess Yarrawonga Mulwala GC, Vic	Nick Kinley Hartfield CC, WA	Wesley Saunders Dunblane New GC, UK
Greg Burgess Northern GC, Vic	Dylan Knight Gisborne GC, Vic	Robert Savedra Wesley College, Vic
Jacob Burrige Victoria GC, Vic	Blaine Knox Palm Meadows GC, Qld	Travis Scott Riversdale GC, Vic
Jason Bushell Rowes Bay GC, Qld	Lance Knox Busselton GC, WA	Bill Shuck Evergreen Turf, Vic
Aaron Cachia Toronto CC, NSW	Steve Lalor Townsville GC, Qld	Cameron Smith Bonnie Doon GC, NSW
Brad Carey Riversdale GC, Vic	Kane Latham Elanora CC, NSW	Gary Smith Commercial Albury GC, NSW
Patrick Casey Kalgoorlie GC, WA	Nick Launer Keysborough GC, Vic	Jacob Smith The Coast GC, NS
David Cassidy The Cut, WA	Ben Lavender Newington College, NSW	Thomas Smith STRI Australia
Brian Cattell Wagga Wagga CC, NSW	Jason Lavender Beenleigh RSL & GC, Qld	Mathew Soles Royal Perth GC, WA
Peter Cawsey Eastwood GC, Vic	Dean Lenertz St Michael's GC, NSW	Clinton Southorn Troon International
Paul Chalmers St Aloysius College, NSW	Dean Lewis Thurgoona CC, NSW	John Spraggs Royal Wellington GC, NZ
Brenton Clarke Warrnambool GC, Vic	Josh Leyland Box Hill GC, Vic	Daniel Stack Windaroo Lakes GC, Qld
Dan Cook The Australian GC, NSW	Nathan Lindsay Hamilton Island GC, Qld	Kenji Steele Riverway Stadium, Qld
Lincoln Coombes RACV Royal Pines, Qld	Peter Lonergan CTHGC, NSW	Lee Strutt Les Bordes International, France
Phillip Cooper GTS, NSW	Ben Lucas Tocumwal GC, NSW	David Sutherland The Ridge GC, NSW
Dion Cope Redland Bay GC, Qld	Toby Lumsden ICC Academy, UAE	Lee Sutherland St Michael's GC, NSW
Mick Cornish Cazaly's Stadium, Qld	Bruce Macphee ASTMA, Vic	Shay Tasker Carnarvon GC, NSW
Shaun Cross Byron Bay GC, NSW	Stephen Mallyon Renworr, NSW	Aaron Taylor Cronulla GC, NSW
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Peter Fitzgerald Belmont GC, NSW	Kieran Meurant BISP, NSW	Rob Weiks Hoiana Shores GC, Vietnam
Aaron Fluke NSWGC, NSW	Jack Micans Elanora GC, NSW	Shannon White Baileys Fertilisers, WA
Matthew Foerander Keysborough GC, Vic	Braydan Millar Rowes Bay GC, Qld	George Widdowson Geelong GC, Vic
Jason Foster Riverway Stadium, Qld	Ben Mills Hawks Nest GC, NSW	Darren Wilson Wembley GC, WA
Jason Foulis HG Turf, Vic	Craig Molloy Cypress Lakes Resort, NSW	Issac Wojewodka Camden GC, NSW
Patrick Fraser Landscape Solutions, NSW	Colin Morrison AIMU P/L, Vic	Tim Wright K&B Adams, Vic
Peter Fraser Hervey Bay G&CC, Qld	Damien Murrell Easts Leisure & GC, NSW	Matthew Young Moonee Valley CC, Vic

For more information on the ASTMA Certification Program visit www.agcsa.com.au

BAYER'S ENVIRONMENTAL SCIENCE PROFESSIONAL BUSINESS ACQUIRED BY CINVEN

Bayer announced in mid-March that it has entered into a definitive agreement with global investment firm Cinven regarding the sale of the company's Environmental Science (ES) Professional business for \$US2.6 billion. Bayer had announced its decision to divest the business in February 2021, with the transaction expected to close in the second half of 2022.



"This divestment represents a very attractive purchase price and allows us to focus on our core agricultural business and the successful implementation of our Crop Science Division growth strategy," says Rodrigo Santos, Member of the Board of Management of Bayer AG and President of the Crop Science Division.

Environmental Science Professional is a global leader offering environmental solutions to control pests, diseases and weeds in non-agricultural areas such as vector control, professional pest management, vegetation management, forestry, and turf and ornamentals. In 2021, the business had approximately 800 employees supporting operations and sales in more than 100 countries, including Australia.

"Driven by a shared belief in people and purpose, Cinven will enable the Environmental Science Professional business to advance towards its vision of healthy environments for everyone, everywhere," says Santos. "We are convinced by Cinven's focus and its commitment to the long-term growth potential for the business and its people."

Adds Pontus Pettersson, partner and head of industrial at Cinven: "Bayer's Environmental Science Professional business is a global leader in a highly attractive and critical industry. We plan to build on the strong foundations established by Bayer by significantly investing in it."

"As a long-established global investment firm, Cinven is well positioned to continue to drive innovation and accelerate growth at Environmental Science Professional, including the delivery of digital and data-enabled solutions, as well as make the business more agile in responding to the unique needs of its markets and customers."

THOMAS JOINS BAYER



In further Bayer news, the company has announced the appointment of **Grant Thomas** (pictured) to the role of territory business development manager (Turf and Ornamentals) NSW/ACT with the Environmental Science business unit based in Sydney.

Thomas comes to Bayer with over 20 years' experience working in the turf management industry. He holds a Graduate Diploma Agriculture (Turf Management) from the University of Sydney and has a blend of experience across practical, technical and commercial roles. Over the last six years Thomas has worked with Nuturf as a product manager and agronomic services manager, followed by a role in territory sales. Thomas will join Bayer's turf team and work closely with Jyri Kaapro, James Royal, Craig Burleigh and Wayne Ryder.

"I am extremely happy to join the Turf and Ornamental team at Bayer," says Thomas. "I look forward to commencing this new and exciting role, as well as supporting agent representatives and turf managers throughout NSW and the ACT."

Adds national sales and marketing manager James Royal: "We are very happy to welcome Grant to Bayer and to have a dedicated representative in NSW and the ACT once again. Grant will provide close and personal customer service to our agents and end-users." Thomas starts his new role on 26 April.

TEE UP WITH TURFHOUND



The Turfhound Teeline modular system allows for ease of replacement or reconfiguration of high traffic zones

Golf ranges and practice facilities are taking a whole new look with the introduction of Turfhound Teeline, supplied and installed by ASTMA Silver Partner Country Club International (CCI).

"This unique product is steadily taking the place in a quantum leap forward from traditional tee line turf," says CCI's national sales director John McCafferty. "Having first-hand observed the short time frames in which the traditional carpeted Teeline degrades, CCI knew there had to be a better solution."

Turfhound comes direct from the USA and is a modular system with a rubber backing that absorbs the club impact with superior feel. The designated patented tee slots ensure that regardless of the age of the mat, teeing the ball during practice is always available.

The Turfhound modular system allows for ease of replacement or reconfiguration of high traffic zones and in terms of playability

gives the golfer the choice to hit from fairway or rough length turf. With various depth sizes available, Turfhound can be fitted to existing slabs with ease should clubs be looking to upgrade from older generation Teeline strips. **For more information contact Country Club International on 1300 138 804 or visit www.countryclub.com.au.**

RAIN BIRD AWARDS LIVING TURF



ASTMA Silver Partner Living Turf has received a number of major awards at Rain Bird's Global Awards Ceremony held recently. In 2019, Rain Bird Australia changed their Australian distribution model and appointed Living Turf as a master distributor of their products, and two years on that partnership has been recognised.

Rain Bird normally stages its international awards ceremony each February at the Golf Industry Show. This year, however, the awards ceremony was live streamed, with Living Turf picking up three major awards:

- Top Flight Award for outstanding representation by a distributor in their region.
- International Salesperson of the Year awarded to Tyson Riley (Living Turf WA).
- Ed Shoemaker Award for International Distributor of the Year – 2021' (beating home 50 Rain Bird distributors globally).

Notes Guy Nichols, general manager for Rain Bird Australia: "We have done a good thing for the Aussie market in appointing Living Turf as national distributor for golf products. This recognition from Rain Bird International validates the service Living Turf are providing to irrigation customers, who appear to be voting, in return, with their business."

EGAN TAKES ON NEW GTS ROLE

ASTMA Bronze Partner Greenway Turf Solutions has appointed **David Egan** to the role of technical field agent in South Australia. Egan has a long history in the turf industry that includes time as a contractor, golf course superintendent, head curator at AMMI Stadium and for the previous 10 years as outfield manager at Adelaide Oval.

"David's extensive knowledge of sports turf management and passion for the industry makes him a great fit for the GTS team," says GTS South Australian manager Andrew Manthorpe. Adds Egan: "I am looking forward to challenging myself and assisting South Australian turf managers in producing high quality playing surfaces". Egan can be contacted on 0448 299 119 or email davide@greenwayturf.com.au.

DUAL ACTION TRIBECA HITS AUSTRALIAN MARKET



Turf Culture has recently launched Tribeca fungicide into the Australian turf market. Tribeca (APVMA approval No. 89902) is a suspension concentrate containing 127g/L fludioxonil and 194g/L triticonazole. Tribeca gives broad spectrum control of eight major fungal diseases such as anthracnose, brown patch, dollar spot, fusarium, helminthosporium, take-all patch, spring dead spot and couchgrass decline.

Tribeca attacks and controls turf diseases at multiple stages of their development due to its dual active constituents and dual mode of action capabilities. Regardless of the

disease stage (early, developing, or full blown), Tribeca is a protective and curative, contact and systemic, killing disease and giving plant protection both inside and outside.

Tribeca applies more than double the fludioxonil per hectare than any other product in the Australian turf market. Fludioxonil is an extremely effective contact fungicide, providing an aggressive defence to protect the leaf and stop the disease spreading. Triticonazole gives significant new growth protection through systemic movement (xylem systemic) when absorbed in leaves, crowns and through roots which can be redistributed through dispersion to all tissues.

For more information about Tribeca and to download the label, SDS and technical sheet, visit www.turfculture.com.au.

EMERALD LABEL UPDATE



ASTMA Bronze Partner Colin Campbell Chemicals has announced an update to the label for its fungicide Emerald (a.i. 500g/L fluazinam).

Emerald can now be used across all turf surfaces (except residential) with only a small re-entry period (when spray has dried). This brings Emerald in line with golf course

requirements and means that turf managers at race tracks, bowling greens, sportsfields or any other commercial turf can apply Emerald for broad spectrum disease control.

For more information on Emerald visit <https://bit.ly/emeraldurf>

DAVEY, GREEN TURF AND SUNDEW SIGN ON AS NEW ASTMA BRONZE PARTNERS

The Australian Sports Turf Managers Association (ASTMA) is delighted to welcome Davey Water Products, Green Turf and Sundew Turf Care Solutions as new Bronze Partners for 2022. All three companies have shown their support of the association and its activities, with their partnerships encompassing the likes of trade membership, advertising, conference sponsorship and exhibition space at this year's Australian Sports Turf Management Conference in Melbourne (20-24 June).

DAVEY WATER PRODUCTS



Established in 1934, Davey Water Products designs, manufactures and distributes products for water conservation, treatment, filtration, transfer and pools and spas. From the smallest household pump to complex, custom multi-pump systems, Davey has the inhouse competence and capacity to deliver.

For the sports turf and irrigation sector, this includes single and multi-pump pressure systems, diesel-driven and electric pump-sets, bore pumps, specialist filtration and intelligent control and monitoring to suit. Davey's Monsoon IQ control system and online portal allows for remote monitoring and control of the pump system from anywhere in the world.

"Davey Water Products is proud to be a sponsor of the Australian Sports Turf Managers Association and principal partner of the Australian Sports Turf Management Conference for 2022," says Davey national channel manager – commercial Mark Anderson. "At Davey we recognise the importance such organisations play in creating environments for networking, collaboration and knowledge sharing. We look forward to supporting the continued growth of this network."

For more information on Davey Water Products visit www.davey.com.au, email sales@davey.com.au or call the Support Centre on 1300 369 100.

GREEN TURF



Green Turf was established in 2009 and collectively brings together experience in construction of turf wickets, tennis courts, sports ovals and reserves, combined with knowledge of horticulture and the agricultural sector. The company has an expanding client base throughout Victoria and interstate. All Green Turf machinery is updated on a regular basis for maximum efficiency and the company also takes pride in its research and development contribution to the turf industry.

Green Turf is headed by managing director Michael Green who is complemented by sales manager David Ward, construction manager Vince Lamanda and operations and renovations manager Matt Dowlan.

For more information visit www.greenturf.com.au.

SUNDEW TURF CARE SOLUTIONS



Sundew Solutions is a family-owned 100 per cent Australian pesticides solutions research and development company established in February 2009. Initially Sundew's focus was the pest control segment where it is a major supplier to pest management professionals

across the country. Since 2009 Sundew has expanded into many other local and overseas market segments including professional turf care solutions.

Presently Sundew offers four pesticides to turf care professionals:

- **ANTagonistPRO:** Suspension concentrate, broad spectrum insecticide with polymer enhanced bifenthrin technology (also approved for red imported fire and yellow crazy ants).
- **BeetleBETA:** Betacyfluthrin suspension concentrate broad spectrum insecticide (over 35 pest claims including armyworm, crickets, stem weevil etc).
- **SAS PRO:** Granular fipronil insecticide for ants and stem weevil (also approved for red imported fire and yellow crazy ants).
- **TaserPRO:** Bendiocarb insecticide for African black beetle and nuisance earth worm control.

For more information on Sundew products visit www.sundewsolutions.com.au or contact chief executive David Priddy at david@sundewsolutions.com.au.

BECOME A PARTNER

In addition to the new partners, the ASTMA is also grateful for the continuing support of its many existing partners who have also recently committed for a further 12 months. They include:

- Platinum Partner Toro Australia;
- Gold Partner Syngenta;
- Silver Partners Country Club International and John Deere; and
- Bronze Partners Adama, Brown Brothers, FieldQuip, Hunter, ICL and PGG Wrightson Turf.

To find out more information about how your company can become an ASTMA Partner, contact the association's partnerships co-ordinator Pam Irvine on (03) 9548 8600 or email pam@agcsa.com.au.

GCSAWA

Our thoughts go out to those guys on the east coast, mainly in Queensland and NSW, who battled the floods over the summer. There were some unbelievable photos, footage and stories that we in Perth just could never comprehend. I felt bad as in my last ATM report I talked about our 'tough' summer with high temperatures and no rain. And I think the same day the email version was sent out the floods hit! There's no way I could complain about our weather when I see that. Give me 40 degrees and no rain over two metres of rain any day. Hopefully all those courses and staff affected have recovered with not too much turf damage or damage at home.

In what seemed like the biggest build up ever reorganising it twice, we finally held our Margaret River Conference in early April. Over 70 people attended the three-day conference to see two presentations each from **Phil Beal** (ex-The Australian GC), **Luke Partridge** (Manly GC) and **Liam O'Keefe** (Flemington). There were also talks from veteran meteorologist **Neil Bennett**, **Jyri Kaapro** (Bayer), **Nadeem Zreikat** (Colin Campbell Chemicals), **Mark Unwin** (ASTMA), local Apprentice of the Year **Jon Christmass**, Wembley GC general manager **Josh Madden**, **Brenton Kay** on the Port Kennedy construction and many others.

A big thanks also to **Ben Gibson** who spent twice as much time travelling to Margaret River then he actually spent in Margaret River.

The WA Golf Industry Awards night was again affected by recent COVID restrictions and has been rescheduled for 15 July. While in Margaret River we announced our major winners. The GCSAWA congratulates **Lance Knox** (Busselton GC) who won the Afgri Superintendent of the Year Award and **Jon Christmass** (Lakelands CC) who took home the Afgri Apprentice of the Year Award.

Jon was an integral part of the Lakelands team as they completed a full course renovation project over his four years, including 23 greens, new tees, re-routing of the course, new bunkers, realigning main lines and laterals, as well as a brand new clubhouse and surrounds. All course work was done completely in-house.

Lance has been at Busselton for four years and has had a very busy and productive last 18 months. This included building a new maintenance facility, construction and extension of a number of greens, new bunkers and nursery. Lance's commitment to the industry is a benefit to the south-west based clubs as he regularly organises catch ups with all the surrounding course staff and managers.

After being cancelled last year, the WA swing of the PGA Tour is back on. **Pat Casey** is hosting the postponed 2021 WA PGA Championship at Kalgoorlie Golf Course in mid-April. A number of Perth based guys head up there for the week to help out which is a great experience for them. Kalgoorlie then hosts the 2022 event in its regular timeslot six months later in October. Both these events are being televised this year which is exciting for the staff and will be good to watch for everyone to see as it's an amazing layout and course.

Royal Fremantle (**Jason Kelly**) is hosting the postponed 2021 WA Open in late April. Good luck to both Jason and Pat and their teams for their respective events. May is Pro-Am season in WA with tournaments being held from Dunsborough to Broome, so we wish those superintendents hosting events good luck.

There looks to be some great numbers heading over to Melbourne for the conference from WA, after what has been a tough period travel-wise for many over the past few years. I look forward to seeing you all there.

SHANE BAKER
PRESIDENT, GCSAWA

TURF AUSTRALIA

Once again the turf production industry finds itself in challenging times with floods in both Queensland and New South Wales. For the farms impacted by the 2022 floods, the challenges are immense. Just as many farms in New South Wales were picking up the pieces from last year's flood, the worst-case scenario occurred again. The clean-up will continue for some time for the growers and I encourage all golf and sports turf managers to be patient with their regular suppliers that have been flood affected and work closely with them as they work hard to get their paddocks up and running again.

Throughout the floods Turf Australia has been working closely with a number of government departments, Ministers and organisations to provide information on the impact that the floods have had on the industry. This has been at both state and federal level and when detailing the onflow effects to the wider industry we address the impact this could have on the sports turf and golf industries, as well as landscaping etc. This paints a lot bigger picture of the industry and the importance of natural turf.

On a lighter note, it was great to once again have a physical event with our NxGen conference held at the end of February. This is such an important program supporting the

future leaders of the turf production industry and we have missed that ability to network in recent years due to COVID. It was a great few days of learning from presenters and each other.

Recently Turf Australia, Turf NSW and Sports Turf Association NSW joined forces to support a project to battle the misinformation on the usage hours for natural turf sportsfields compared to synthetic ones. **Dr Mick Battam** (AgEnviro Solutions) undertook a study of over 1000 Sydney council sportsfields to analyse the actual usage of sportsfields compared to the data used when making decisions on natural or synthetic.

The study found that councils in Sydney significantly overestimated the use of fields. By looking at booked use and not actual use, councils are not getting an accurate picture of usage. This leads to misdirection of funds to surfaces that are expensive, perishable and environmentally damaging. The full report is available on the Turf Australia website www.turfaustralia.com.au and an executive summary will be published in an upcoming edition of Australian Turfgrass Management.

JENNY ZADRO
MARKET DEVELOPMENT
MANAGER, TURF AUSTRALIA

STA VIC

Our first event in a while – the Seminar/Field Day held at Pakenham Racing Club on 5 April – was massively supported by our loyal sponsors. The industry is very appreciative of the work you do. A huge thank you to ADE Turf Equipment, the major sponsor of the day. The event was well attended with lots of new faces. The track was awash with equipment, demonstrations and displays, an ideal environment for networking.

The Sports Turf Seminar will return to the MCG on 19 July 2022. The program is well advanced and will be posted along with registration details shortly. The plan is to hold the Pitch Preparation Day in September 2022. This is a key event for so many and a great opportunity to gain hands on experience. Details to come.

COMMITTEE, STA VICTORIA

ON THE MOVE...

MARLON JOHNSTON: From assistant superintendent Terry Hills G&CC, NSW to assistant superintendent The Australian GC, NSW.

GARRY KUNZ: From assistant superintendent Byron Bay GC, NSW to Teven Valley GC, NSW.

To say that the past two months has been a challenging time for turf managers across NSW would be an understatement! Having received just on 1100mm until the end of March in the Sydney Basin alone is staggering considering the total for 2021 was 1350mm. Bowling clubs in the Northern Rivers and Mid-North Coast have been hardest hit across this time with already struggling clubs unfortunately facing the possibility of not being able to re-open again as the damage has been so severe.

With all of the damage around NSW, it was a positive for clubs and greenkeepers to finally be able to host the NSW Pennant finals in late March. These clubs were scattered across the state with some grades managing to play through without delay and some having to spend time waiting for greens to be playable again after further rain. Congratulations to all involved including those greenkeepers playing in the finals.

The NSWPGA State Championship week is fast approaching. South Tamworth will be the host venue again from 1-6 May. After a great turnout of 50 members last year, I think a much-needed break away from our own clubs this year will see another large turnout. Nominations close on Friday 22 April and information for the week can be found at www.nswbga.com.au.

The 2022 NSWPGA State Conference will be back on this year after last year's COVID cancellation. Bankstown Sports Club will be the venue for the two-day conference and a date in August will be confirmed shortly with 22-23 August the most likely. More information and registration forms will be available soon.

To all members take care during these difficult times and be sure to reach out to one another if help is needed.

JOHN FLAHERTY
SECRETARY, NSWPGA

YARRA YARRA AND KINGSTON HEATH HOST OPENING VGCSA EDUCATION MEETING OF 2022

The VGCSA kicked off its 2022 events schedule with a visit to two of Melbourne's premier Sandbelt clubs in early March – Yarra Yarra and Kingston Heath. More than 100 VGCSA members and industry representatives attended the two-course meeting, which also included presentations from sponsors John Deere and The Toolbox Team.

Assistant superintendent **Chris Allen** received a late call up to lead the course walk at Yarra Yarra after superintendent **Clint Raven** was forced out due to COVID. Allen discussed the significant restoration works which have been undertaken over the past two-and-a-half years which has dramatically transformed the course.

Multiple greens have been altered and what was once a densely treed layout is now very open and provides some incredible vistas across the property. Twelve holes have been completed to date with greens either lifted and relayed or in some cases completely rebuilt. In the coming year the team hopes to finish the remaining four greens – 9, 16, 17 and 18. All the new greens were built with a modified California profile with 500mm of sand. All new greens had Rain Bird IC wire installed so they can be tapped into the mainline in the future.

After the Yarra Yarra visit, the meeting then moved to Kingston Heath where, after a presentation from **Ben Gibson** (The Toolbox Team), host superintendent **Hayden Mead** took the group on a walk-through of the new par three course which is in the early stages of construction.

Designed by Mike Cocking of Ogilvy Cocking Mead, the par three course is situated on a 5-6 hectare parcel of old market garden land adjacent to Kingston Heath's championship course 12th hole. The club purchased the land in the 1980s and in recent times it has housed various nurseries of Wintergreen and Santa Ana couchgrass and



Kingston Heath superintendent Hayden Mead leads VGCSA members on a walk-through of the new par three course currently under construction

A1 bentgrass. A par three course had been mooted for some time and was finally put to a vote in August 2021, with members voting 84 per cent in favour.

After a delay with permits, construction began in early January with the OCM team in the rough shaping phase at present. Due to the later than planned start date, the club has given Mead the all clear to solid turf (with maxi-rolls) the Santa Ana couchgrass areas instead of sprigging. The course will boast a number of double greens which will be seeded in May.

Although the greens on Kingston Heath's championship course are A1 bentgrass, Pure Distinction has been chosen as the new variety for the short course. One of the double greens – 3 and 6 – will be sown with both Pure Distinction and A1 to compare the two varieties and provide some data should any changes be considered for the championship course greens in future years.

Like the championship course, the greens and fairway turf will be irrigated using separate systems. A sulphur burner is used to treat bore water which is then used on the greens only. Non-treated bore water is used to irrigate all other couch surfaces. Around two hectares of heathland plants will also be planted throughout the par three course which the club is expecting will attract upwards of 15,000 rounds a year.

–Brett Robinson

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THEODORE 'TED' BOLTONG (1945-2022)

One of the real characters of the Victorian turf management profession, former Active Safety business owner Ted Boltong, passed away on Tuesday 22 February after a long battle with dementia. He was 76.

A passionate advocate for WH&S as well as a sharp businessman, Boltong's wonderful, witty and quirky personality endeared him to many in the Victorian turf industry for more than 30 years. He and Active Safety were long-standing trade members of the VGCSA, TGAA/STA Victoria and the AGCSA/ASTMA. He was a regular attendee at annual conferences and trade exhibitions, state education meetings and golf days and would guarantee to raise a smile from all those who he spoke to. Between 2005 and 2008 he also served on the committee of the TGAA Victoria and was a member of Riversdale Golf Club for 16 years.

Following his passing, many superintendents and turf managers across Victoria paid tribute to Boltong, a Vietnam Veteran, who was remembered for not only being a gun salesman but a gentleman who had a profound empathy for people.

"I like so many other superintendents have such great memories of Ted," says The National Golf Club's course manager Leigh Yanner. "He was an absolute gentleman and helped me progress through my career, especially as a young superintendent starting out.

"There was no question that Ted was a sharp salesman, but alternately he had you in mind and wanted to make sure that he provided exceptional service. I remember he always answered the phone 'Ted at your service.' He was a leader in the field of WH&S even before it had become a major part of our everyday work culture.

"Ted's biggest strength was that he always checked in on the individual and made sure things were okay with you. He knew what to say to take your mind off the negatives and focus on the positives. Ted always made it his business to say hello and make you laugh at any turf-related event."

Former Commonwealth Golf Club superintendent and now Living Turf rep Mark Prosser shared similar sentiments: "Ted was a social butterfly and a true legend of the VGCSA. He was known by everyone in the turf industry, not just management, as he had an incredible ability to remember all the staff's names on site. It showed a massive sign of respect and inclusiveness. Ted's deliveries were always opened promptly as there would always be a bag or two of lollies that had found their way into the packaging."

Boltong was a passionate advocate of WH&S



Paul Locke, superintendent of Freeway Golf Club, remembers how Ted's visits to the maintenance facility were always a highlight for him and the staff: "He lit the place up! He included everyone in the conversation and always made a huge effort to remember everyone's name. Ted's visits would consist of a box of pastries for the boys and some friendly banter. The pastries were no doubt covered in the price he sold a pair of gloves for, but it didn't matter. Teddy loved this industry and he was a huge part of it. He never missed a chance to brag about his hole in one or the next golf trip and which super he was playing with. Teddy was a great friend and will be very missed."

Boltong was indeed ever the showman. WH&S has never been the most interesting of topics, but he always had a knack of making his talks memorable. ASTMA events and education manager Simone Staples recalls some of the presentations Boltong gave at VGCSA and TGAA/STA Victoria meetings over the years: "Ted would literally come

dressed to impress," recalls Staples. "If it was a presentation on spraying he'd turn up in full PPE, or if it was something to do with fire safety he would wear a firefighter's jacket. They always drew a laugh while at the same time delivering a very serious message."

In his later years, Boltong became a golfing fanatic and took to it with the same passion and enthusiasm he did with his work. Up until his passing, he was a proud member at Riversdale Golf Club and over the years was a regular fixture at industry golf days. He wasn't hard to spot either, often resplendent in a pair of bright orange trousers which were a nod to his Dutch heritage.

Current-day Riversdale superintendent Travis Scott says Ted's regular visits to their maintenance facility after his rounds will be missed, as will his ability to make everyone laugh: "Ted was one of a kind, an industry stalwart. Many of us have grown through the industry with Ted and I have great memories of VGCSA and AGCSA events where, as a young up and coming turf manager, Ted would be there to guide you, introduce you to fellow members and ensure you felt comfortable. He could bring the room together with great stories and laughter. He was dedicated to serving the turf industry and if there was ever something you needed Ted would always find it, even if it did cost you extra.

"I was fortunate enough to land the superintendent role at Riversdale six-and-a-half years ago where Ted was an active member and it was great to continue our friendship once he moved into retirement. Ted would often wander over to the maintenance shed to catch up with the staff and let us know his thoughts on the course. He would later join the monthly garden group at the club where he would bring much laughter to his fellow members. He was a great man, that will be missed by many. RIP Theo." 🕌



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