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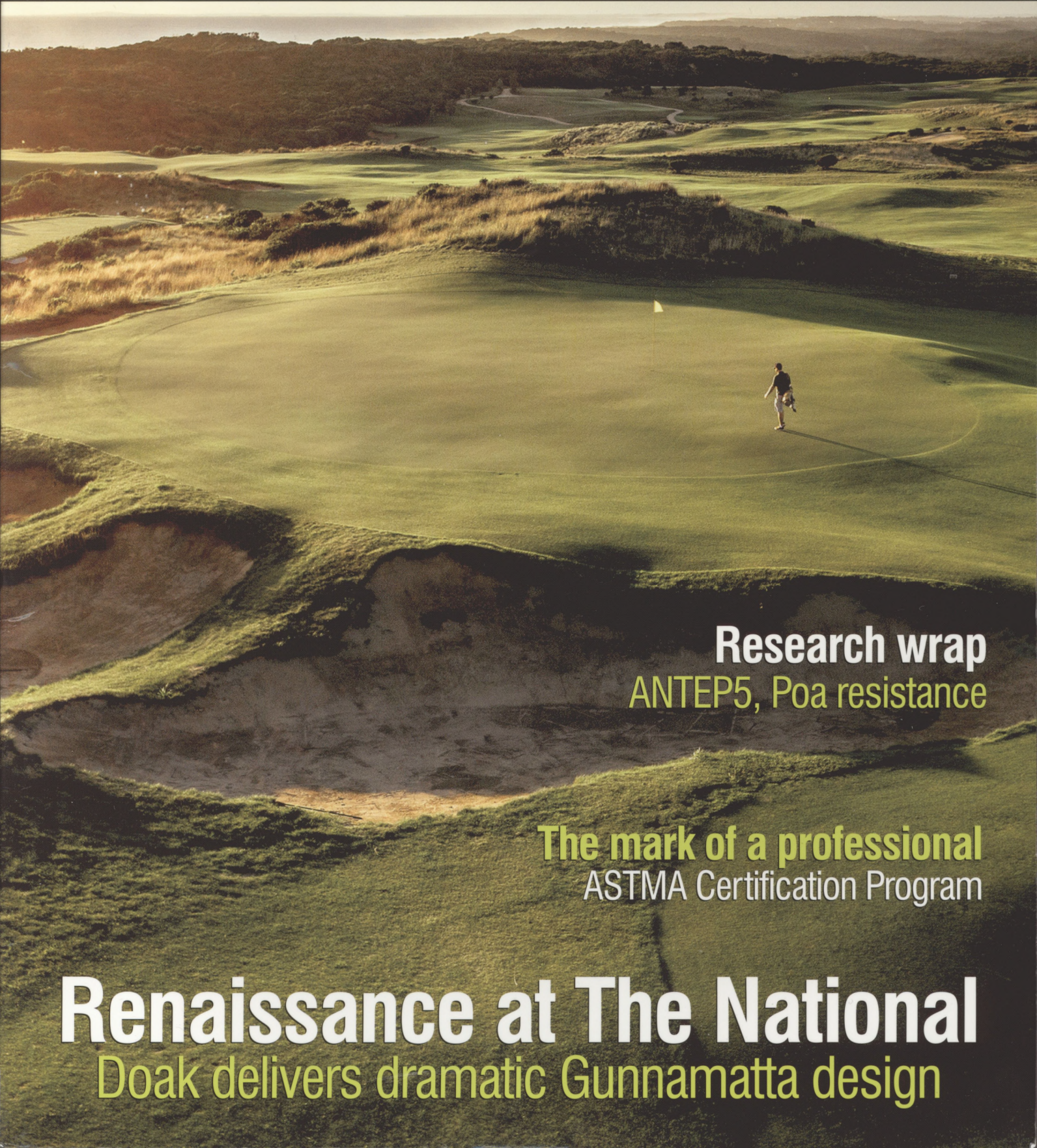
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# Turfgrass



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MANAGEMENT JOURNAL



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## COVER STORY GUNNAMATTA OCEANS AHEAD 6

Between July 2018 and April 2019, The National Golf Club embarked on the major remodelling of its Ocean Course under the auspices of renowned designer Tom Doak. The dramatic new Gunnamatta Course has quickly won over a demanding membership and has usurped its much-loved siblings – the Moonah and Old courses – in the course rankings stakes. ATM editor Brett Robinson talks to The National's golf course manager Leigh Yanner and Gunnamatta superintendent Tony Gordon about the challenges and work that went into this significant project.

**Cover:** The National Golf Club, Gunnamatta Course, 16th hole

**Photo:** William Watt (Caddie Productions)



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PHOTO: EDUCATION CITY GC



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# Gunnamatta got game

I remember the shot so clearly, mainly because my playing partner (former colleague and AGCSATech agronomist Andrew Peart) burst out laughing immediately. Standing on the 3rd tee of The National Golf Club's Ocean Course, playing in the 2016 VGCSA Golf Day, I bladed a 4-iron no more than a few feet off the ground. Quality!

A few muffled expletives and thumping the club into the turf were quickly followed by the growing realisation that the ball was surprisingly tracking nicely towards the green. After a few bounces short, it ran up onto the green to within two feet and I had my first nearest-the-pin prize on Australian soil. As I sheepishly retold my achievement to course manager Leigh Yanner later, he made the wise observation, albeit laced with a hint of sarcasm, that I had played the perfect links golf shot. (And, yes, for the record I did sink the birdie putt...)

At last November's grand opening of the new Gunnamatta Course at The National Golf Club, renowned golf course architect Tom Doak would relay a similar, although far more interesting, story to Yanner. Early on in his career, Doak had toured the great links courses of the UK and Ireland, along the way stopping off at St Andrews, Scotland where he spent three months as a caddie on the Old Course.

During one round he watched a husband and wife playing the famed links, the husband a single figure marker and the wife a high handicapper. Playing the same hole, the husband hit a beautifully lofted shot and landed in prime position on the green. By contrast, his wife hit her shot no more than a few feet off the ground, but also ended up in just as good a position. That simple encounter entrenched in Doak's mind the innate qualities of links golf and how classic layouts, like the Old Course, espoused the importance of the ground game and providing multiple opportunities for players of all skill levels to enjoy the game.

As we know, Doak has subsequently gone on to build a reputation as a modern day genius and his uncanny ability of working in with the riches of nature have led to some of the game's most talked-about designs which celebrate its true essence. In Australia, his Barnbougale Dunes and St Andrew's Beach creations have become critically regarded, and on the back of those and the suite of international successes he has notched up, many leading clubs here have sought his guidance for improving their courses, among them Royal Melbourne, Royal Adelaide, New South Wales, Yarra Yarra and Woodlands. Quite the collection.

To that list can now be added The National and what Doak has created in transforming the out-of-favour Ocean Course is simply remarkable. The club asked Doak to deliver a course that was enjoyable regardless of ability and took full advantage of the incredible land they are lucky to be custodians of. Ultimately they wanted something memorable and having had the privilege of visiting the course on a beautifully fine but very brisk early June morning, it ticks all those boxes and more. Sadly, for me anyway, the old 3rd hole is no longer there, but as you will read, its replacement provided a major turning point in the redevelopment.

In this edition we track the rise of the Gunnamatta Course and the immense level of work that went into it. To achieve what is on the ground now required unwithering effort – from Yanner and club general manager Jon Gahan, down to Gunnamatta superintendent Tony Gordon, his senior crew members Glen McLeod and Rebecca Woolley, all of the staff across The National's four courses and the many contractors. Everyone played their part in its ultimate success.

Gordon also features in this edition's look back at the TPC Volunteer Program, which sadly became one of the first victims of the COVID-19 pandemic when the PGA Tour had to cancel The Players Championship after the opening round. Gordon and his fellow programme members look back at some of the highlights of their brief but unforgettable time in Florida. Elsewhere, we also review the ASTMA Certification Program launched in May and ex-pat Queenslander Andrew Ikstrums provides a fascinating insight into the construction of Education City Golf Club in Qatar. It is the only golf course in the world to have all playing surfaces – greens, tees, fairways and roughs – built with USGA spec profiles. Yes, you read correct... all surfaces. Enjoy the read...



**Brett Robinson, Editor**

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# Sports turf industry showing its true character by standing tall

**A**claimed American author Maya Angelou once wrote, "I can be changed by what happens to me. But I refuse to be reduced by it." In some of the rare quiet moments over the past eight weeks, I have found myself reflecting on all that has happened in such a short amount of time. The circumstances our members, industry, our association, families and friends – in fact, almost every area of our lives – have faced in the last few months have challenged us. And challenged us greatly.

Yet the signs that our turf community would meet these challenges were common and consistent. We witnessed leaders showing care and compassion for their teams, turf managers reaching out to each other to offer a hand, picking up the phone and having a chat with those doing it tough. We saw trade partners reaching out to offer support wherever possible which yet again showed me the true value and nature of the industry we work in. It also highlighted to me that while times were challenging, and will likely continue to be for some time, we wouldn't be reduced by it.

I continue to be impressed with the way our industry has pulled together, knowing that our actions can make a small but meaningful difference in the support we show our colleagues, encouragement for our teams or to the mental health of our peers who may have been doing it tough as the country seemingly ground to a halt.

Additionally, I am also grateful for our association staff who have been flexible in the face of one of the most significant tests our industry has experienced. While many grappled with course closures, standing down of teams, uncertainty in hours or variations in roles, the ASTMA team has willingly been active in contacting members, following up on the literally hundreds of requests for support, facilitating discussions with our partners and at the same time working through challenges of our own such as shifting work practices or the cancellation of the 2020 conference.

## ADVOCACY FOCUS

Many would be aware of the increase in advocacy of turf management needs at all levels of government we have undertaken in the last few months. This has highlighted the work that sports turf managers undertake, the value they contribute to sport and recreation and also continued to discuss our concerns relating to the skills shortage across our



Australian  
Sports Turf Managers  
Association



*A new advocacy video jointly produced by the Office of the Victorian Skills Commissioner and the ASTMA is being used to actively promote sports turf management as a rewarding career path*

industry. Discussion of these issues have put our industry, and members, in front of key decision-makers and Ministers who were previously unaware of the level of work involved in the trade and also have the ability to support our desire for change.

One state department that has picked up the need quickly, and identified the ability to work with the ASTMA to educate and promote

sports turf management as a career, is the Office of the Victorian Skills Commissioner (OVSC). The OVSC works with employers, industry peak bodies and government to align training and advocacy with the needs of the industry, ensuring the training requirements of students and employers are met and that skills outcomes support the government's objectives for skills requirements, productivity and growth.

Together, the OVSC and the ASTMA set about developing a programme of work to assist in establishing and growing pathways to ensure that the available options were supported for people to enter sports turf management training and apprenticeships and then transition from training into work.

We were pleased to announce recently the launch of the first of these initiatives to promote sports turf management as a career, with the release of an advocacy video that will be supported by additional work with schools, career and workplace advisors and vocational career agencies in the months ahead.

## GET CERTIFIED

In perhaps one of the largest changes to the future of our industry, mid-May saw the ASTMA launch a professional industry certification programme for sports turf managers, recognising our leading turf managers and encouraging investment in education and continual professional development.

The ASTMA Certification Program is a key initiative in our commitment to maintaining and improving the quality, recognition and professionalism of the industry, in addition to promoting the industry and its professionals to the public.

The early take-up of the programme has been outstanding, highlighting the large number of turf professionals that are dedicated to their trade and the universal nature of the skills and knowledge within our industry. In this edition (page 28) we look in-depth at how the new ASTMA Certification Program works and list those early adopters who have completed certification and are driving the initiative.

In addition to this, the ASTMA has launched a series of 45-minute live webinars with a range of local and international turf experts. The first seminars were held in late June with the likes of Dr Frank Rossi and Mark Carter hosting, with further webinars planned weekly over the coming months. These webinars are free for all ASTMA members and you can register through the ASTMA website – [www.agcsa.com.au](http://www.agcsa.com.au).





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*Since opening in April 2019, the new Gunnamatta Course has entranced members and industry pundits, replacing the Moonah Course as The National Golf Club's highest ranked layout. Pictured is the short par four 17th, one of many new holes that now afford dramatic views of Bass Strait*

# Gunnamatta

oceans ahead

*Between July 2018 and April 2019, The National Golf Club embarked on the major remodelling of its Ocean Course under the auspices of renowned designer Tom Doak. ATM editor Brett Robinson talks to Leigh Yanner and Tony Gordon about the dramatic new Gunnamatta Course and the huge team effort required to turn it from concept to reality.*



**T**here's a reason why golf course architect Tom Doak and his Renaissance Golf Design (RGD) team have become the most sought-after craftsmen of their trade. Over the past two decades, the masters of minimalist golf course design have produced some of the most dramatic and talked-about layouts in world golf, their innate ability to work with the beauty and grace of nature being a hallmark of their work.

They have compiled an impressive dossier. Think of Pacific Dunes and Old Macdonald (part of the Bandon Dunes complex) and Ballyneal in the US, Tasmania's own Barnbougles Dunes and across the Tasman the likes of Cape Kidnappers and Tara Iti. Such sites have allowed Doak to truly express himself and his design philosophies, providing the necessary features and freedom for him to create layouts that are truly memorable.

It was therefore something of a perfect fit when, in 2016, The National Golf Club on Victoria's famed Mornington Peninsula came calling. Australia's largest golfing operation, boasting four championship-level courses, was looking to enhance its brand by undertaking works to the Ocean Course which the membership had gradually fallen out of love with over the years. In the Ocean Course they arguably had the best parcel of land on the club's sprawling Cape Schanck property and knew it would provide the ideal canvas upon which Doak could work his magic.

Over a three-day visit in October 2016, Doak and his RGD counterpart Michael



**Key members of The National crew responsible for the Gunnamatta redevelopment (from left) Rebecca Woolley (foreman), Glen McLeod (assistant), Tony Gordon (superintendent) and Leigh Yanner (courses manager)**

Henderson came up with their concept to transform the site. Doak would end up spending two more weeks on site prior to the course's eventual opening to members in April 2019, one to finalise greens and bunker locations and a second to sign them off. That was all that was needed. The land and the features were already there, it just needed someone like Doak to realise its full potential.

The rest was left to the wizardry of design associate Brian Schneider and his D5 dozer,

his fellow RGD colleagues as well as an army of contractors – irrigation, earthworks, turf laying, hydroseeding. Together with The National team, led by course manager Leigh Yanner, superintendent Tony Gordon and club general manager Jon Gahan, over a period of 10 months the Ocean Course was put to rest and a new course brought to life. Renamed 'Gunnamatta', after the beach which resides the other side of the sand dunes, it has been nothing short of a revelation.



**The hole that would change it all. The new 3rd hole of the Gunnamatta Course traverses the old 17th hole of the Ocean Course. It was a significant turning point in the project that transformed it from a mere refurbishment into a full scale remodelling**





## THE NUMBERS DON'T LIE

Designed by Peter Thomson, Michael Wolveridge and Ross Perrett (TWP), the Ocean Course was opened in 2000 alongside the Greg Norman-designed Moonah Course. The two new courses thrust The National into the spotlight, joining their fabulously quirky sibling – the Old Course, designed by Robert Trent Jones – in offering members three world-class layouts.

For nearly two decades the Ocean Course had served The National well. True to the TWP model, it was a strong championship course, one that was brutal in the plentiful winds of the peninsula. Many of the sloping greens complexes were raised and had huge false fronts which demanded pinpoint accuracy with approach shots. While it was a true test of skill for the lower handicapper, for the higher handicapper it could be a grind.

Although a links style course, the use of couchgrass right up to the greens made it difficult to play links style shots, and somewhat ironically, even though it was called the Ocean Course, the only time you saw the dramatic vista of the peninsula and Bass Strait was from atop the 1st tee.

Over the years the club had noticed the number of member rounds on the Ocean

Course were slowly dwindling, which in turn was putting pressure on the other two courses. As a result, it was becoming apparent that a testing championship style golf course was no longer suiting the membership.

Although totally subjective, the Ocean Course had also never reached any great heights in the biennial course rankings. It lagged behind the Moonah and Old courses, which perennially ranked inside the top 15, dropping as low as 50 in 2018. As such, it was felt the Ocean Course wasn't representing The National 'brand' and in addition to a member survey conducted in April 2016 which highlighted many of the above issues, it built a case for the Board to take action.

Ultimately the goal was to lift the status of the Ocean Course to be more in line with the Old and Moonah courses. The club wanted a members course that was enjoyable and fun to play, was playable in the wind and also provided enough strategy to challenge the lower handicapper. They also wanted a course that celebrated and took advantage of the site's wonderful topography and vistas. The club approached two architect firms – RGD (Doak) and TP Golf (Ross Perrett) – both coming back with significant reworkings, but it was Doak's vision which resonated the most.



*Course architect Tom Doak in his element – on site during final greens shaping and sign-off in September 2018 (left) and confirming the location of the new 16th green during his visit in January 2018 (above)*

In submitting his concept plan to the club, Doak made the following comments: "The site for the Ocean Course is brilliantly suited for a golf course and is both dramatic and severe. It provides the sort of character that golfers adore – windy, linksy conditions that test the player while also providing an exhilarating experience. However, in my opinion the current design of the course seems to be trying to create 'something for everyone' and the end result is it never quite got anyone on its side. I think it is very realistic to make changes to the current layout so it is more interesting and fun to play. To do so, all you really need to do is decide the course is there for the enjoyment of the members, and making a difficult test of golf for low-handicappers is not the objective of design".

## CHANGING TACK

The original brief wasn't to totally reconstruct the course, but during Doak's initial site visit in October 2016 all bets were quickly off. While the 1st and 2nd holes followed the original Ocean Course routing, albeit with significant changes in greens locations, design and bunkering, it was the 3rd hole where the project went from a mere refurbishment to a full scale remodel.

*The spectacular new par three 16th hole with Bass Strait as its stunning backdrop*





*Brian Schneider would cover a remarkable 1800km in this D5 dozer shaping Gunnamatta's new greens*

The old 3rd on the Ocean Course was a non-descript, slightly uphill par three that played back inland. It wasn't a favourite of the members or Doak for that matter. Instead, his proposed 3rd changed tack, sweeping down and across the old par five 17th hole to a fantastic new green site carved out of a sand dune. It was at that point RGD was essentially given carte blanche by the club and Doak didn't disappoint.

Significantly, three of the new holes – 5, 16 (both par threes) and 17 (a short par four) – now play towards the ocean, the 16th green having nothing but Bass Strait and the horizon as a backdrop (see photo bottom opposite page). Many of the new greens are located in valleys, are smaller in size and punchbowl style, with massive undulating fescue surrounds feeding shots into them. Fairway widths are generous, while the bunkering is rustic and rugged, far removed from the manufactured and manicured appearance of the previous hazards.

On the initial concept plan, Doak had holes 11 and 12 as a par four followed by a par three. He ended up flipping them around, the 11th turning into a long par three (206m



off the black tees) over a valley and the 12th a downhill par four to a long narrow green which measures 45m front to back and just 14m at its widest and 10m at its narrowest.

Somewhat controversially, Doak had also mooted back-to-back par threes on 15 and 16. The 16th was always going to be a long par three and 15 solved the problem of how to get there. In the end 15 was turned into arguably one of the best holes on the course. Located where the old Ocean 9th once was, it is now an uphill short par four (some 300m off the back tees) with a fairway that, at its widest, measures 130m across. You have the option of either playing straight off the tee to leave yourself with a challenging uphill approach where only the flagstick is visible, or you can drive blind over a hill to the right and land on

an elevated section of fairway which provides a far better view into the green.

The original 10th green also didn't survive the concept plan. Despite being stripped and rough shaped, on Doak's final visit to sign off the greens, he moved it 100m to the left, the surround marrying in with that of the adjacent 8th green just 50m further to the left. Such flexibility throughout the project was critical at all times.

## TESTING TIMEFRAMES

While Doak and RGD were afforded the luxury of some fluidity and freedom to come up with the best possible design, for the crew on the ground there was little leeway. Once Doak's concept plan had been approved in June 2017, he and Schneider returned for a day in mid-January 2018 to finalise green sites and shapes.

In between that time, Yanner and Gordon (who had arrived at The National the previous October after nearly 8.5 years as arenas manager at the MCG) had started spraying out, cutting down and burning off some of the new green and fairway sites. When Doak arrived, he walked the site and gave notes on the fly to Schneider about shapes and levels. There were no formal plans, no fancy renderings or 3D CAD modelling to refer to;

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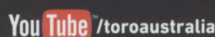
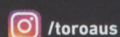
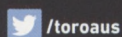
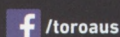
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*Integral to the new course design are four hectares of undulating fescue surrounds, a mix of Shoreline and Barcrown II slender creeping red fescues. Pictured is the par four 12th green complex, the green measuring 45m front to back and just 14m at its widest*

this was golf design at its most organic and by the day's end most greens had been mapped out, with only holes 11, 12, 15 and the tees on 13 undecided upon.

Following that visit, Yanner and his team continued to prep the site in readiness for the Ocean Course's eventual closure in July, which would signal the start of an intensive 10-month construction and grow-in phase.

Prior to the closure, in May, A&M Watering arrived on site to begin what would be one of the fiddlier aspects of the project. Some 20 years earlier, Brendan Graham and his team had been responsible for installing an irrigation system that serviced both the Moonah and Ocean courses. Both courses shared pumps, mainlines and control systems and two decades on A&M found themselves having to deconstruct their handiwork.

Needing greater flexibility to irrigate during the construction and grow-in of Gunnamatta, the two courses had to be separated. To do that A&M isolated the existing system, switching it across to solely operate the Moonah Course, while a separate dam foot valve, new pump set, pipework and irrigation components were installed across the new course. Incidentally, Gunnamatta is the first course in Australia to use Toro's new Lynx Smart-Hub set-up.

At the same time, A&M started the challenging task of getting pipe out onto all parts of the course. One of the difficult aspects of the construction phase was the need to have all green sites completed first so that they could be signed off by Doak upon his return in mid-September. That meant running mainlines through areas that hadn't been shaped yet,

one of them ending up running underneath the 12th green which was among the last to be shaped.

In some areas, temporary wire lines had to be run, while for a five-week period a generator ran 24-hours a day to power a Smart-Hub to ensure water could get to the newly constructed areas. Fortunately A&M had worked with RGD before and knew their requirements and by the project's end had installed 35km of irrigation pipe work and 1250 sprinklers.

In tandem with the irrigation work, as soon as the course was closed in July, Maw Civil came in to strip the new greens sites and remove the features of the old course (greens complexes, tees and bunkers). Yanner admits that this was perhaps the biggest aspect of the project that was underestimated during



*The new Gunnamatta Course is all about width and angles into brilliant greens surrounded by fescue that emphasises the ground game. Pictured is the reworked 2nd*





*The new Gunnamatta greens are a 50/50 blend of A1 and Pure Distinction, the latter's improved density and lateral growth making it a perfect combination*

planning and took far longer and greater resources to achieve.

By the time the RGD shaping team – led by Schneider and comprising Henderson (semi bulk out/rough shaping) and Clyde Johnson (bunkers) – had arrived in mid-August, six greens – 2, 3, 4, 5, 6 and 7 – had been stripped back to dirt and mainlines installed. To the credit of the on-ground crew, RGD discovered they had a far better site to work with.

Working huge hours over the next couple of months, by mid-November 90 per cent of all shaping had been completed. Doak returned in mid-September 2018 to sign off the final greens and confirm the design of the last three holes, while Schneider was back for two weeks just before Christmas to complete the finishing touches in preparation for seeding, turfing and a summer grow-in. The National crew member Travis Best also played a critical role in assisting the RGD team with the finished surfaces, his skills with the skid steer proving invaluable.

"It was quite incredible how quickly it all came together," reflects Yanner. "Watching the greens sites come to life was fascinating and the remarkable thing was Brian did them all with a D5 dozer. You could sit and watch him all day. It was amazing what he could do with that machine. The skill and the speed at which he could operate it, even when moving just the smallest amounts, was so impressive."

In one of the more remarkable construction statistics from the project, the GPS tracker on Schneider's dozer clocked nearly 1800km. That's the equivalent of driving it from Melbourne to Brisbane!

## ALL IN THE MIX

During his 13 years as course manager at The National, Yanner has always been meticulous in his planning and researching of new turf varieties and it was again the case for the new Gunnamatta surfaces. The existing Ocean Course greens were Penn A1, a variety which had always produced exceptional surfaces on the Peninsula. It was always going to be in the mix for the new greens, but with the arrival of Pure Distinction onto the market, and having seen its success at Peninsula-Kingswood, Yanner saw an opportunity.

Essentially from the same parentage as A1 but a newer generation, Pure Distinction's improved density and lateral growth piqued Yanner's interest. Twelve months out from construction he seeded trial plots of both varieties, as monostands, as well as a 50/50 mix of the two. As Yanner explains, as the trial progressed his eye was constantly drawn to the blended plot every time he saw it. It looked finer, denser and it when it came time to make the call, the blend got the nod.

The four hectares of fescue surrounds, an integral component of how the new course plays, were also a blend. A 50/50 mix of Shoreline and Barcrown II slender creeping red fescues was selected, their tight, compact nature and greater tolerance to herbicide being of paramount importance.

To get the desired quality and playability with the surrounds, some clever innovations were put into practice when it came to seeding the fescue. Over many years of establishing fescue nurseries for use on the Moonah Course, Yanner had found they got far better results when the seed had good soil contact,

rather than being hydroseeded over the top. With a large area to seed, Gordon came up with an ingenious method which harked back a little to his days oversowing the MCG.

"We had to do a lot of large areas quickly, so I knew a SpeedSeeder was the tool to use, but I just had to figure out how," explains Gordon. "While the spacings of the spiked rings on the seeder are great for oversowing on established turf, on bare ground they collected soil between them and became clogged. If I could get the spikes farther apart the soil wouldn't stick, so I found some 150mm pressure pipe that I thought would be strong enough and cut something like 90 25mm-thick rings. We replaced every second spiked ring with a PVC spacer and the result was a seeder that could be used on the bare sandy soil regardless of its moisture content.

"After Glen (McLeod, assistant superintendent) had carefully mixed the seed and calculated the seeding rates, we put the seeder across the surrounds in two directions. This gave us the critical seed-soil contact and left a nice dimpled, fluffy surface which was then hydroseeded with straight paper mulch and fertiliser over the top. The end result was a surface that was able to cope with all the regular irrigation and occasional heavy downpour, with the mulch acting as a growth blanket. The size and quality of cover we achieved on these broad areas in only one growing season has really been impressive."

By contrast, the greens were hydroseeded conventionally (by Turf Renovation Australia), albeit with one slight adjustment. With the Pure Distinction having a reputation for being aggressive at establishment, it was decided



## REDEVELOPMENTS

not to add any amendments to the natural sand profiles. This gave greater control over growth and the ability to prevent any potential thatch development by only applying post-emergent fertilisers as needed, along with regular and heavy sand topdressings.

Due to the tight construction timeframes, all new fairway areas and tees on the Gunnamatta Course were solid turfed. In addition to the construction of a 1ha Wintergreen nursery (for tees) and some balance of turf purchased from Sydney, the rest was harvested from the existing Ocean Course fairways. Charged with that mammoth task of cutting, lifting, stacking and re-laying was Richard Obee and his team from Lawnlayer Victoria.

It was initially estimated that nine hectares of sod would need to be harvested and re-laid, but after starting with the first sod on the 6th fairway in September 2018 and finishing with the last piece on the 1st Black tee five months later, all up Obee's team laid an incredible total of 15 hectares. Such effort typified the lengths that all involved in the project went to deliver the finished product.

### RAVE REVIEWS

It was indeed a halcyon day for the club when, on 28 April 2019, the new Gunnamatta Course opened for member play. Gordon had the honour of setting the pins that day and as he was finishing up on the 17th green he looked across to see the first group putting out on the 1st. Made up of the club chairman, captain and two directors, they all cheered and applauded Gordon as they made their way off the green.

"It just gave me a real sense of satisfaction, that everything we had done over the past 10 months had finally come to fruition and to see how well it had come together," reflects Gordon. "We didn't switch off for 10 months. All the hours that everyone put in, it was just great to see it finally in play and how happy the members were to be back out there."

*From the 1st to the 18th (pictured), the new Gunnamatta Course is immensely enjoyable for all levels of ability, while also providing enough strategy and guile to challenge the single markers*



*The recent COVID-19 course closure enabled The National crew to heavily topdress the new Gunnamatta fairways. Pictured is the uphill par four 15th*

Now open for more than 12 months, the course has continued to grow in stature. Again, the numbers don't lie and just as they had signalled the demise of the Ocean Course, they are now proving beyond a doubt that the Gunnamatta layout is a firm favourite, not only among the members but industry pundits as well. Last summer it recorded the most rounds of any of The National's four courses, while in Golf Australia magazine's Top-100 Courses for 2020 rankings list, Gunnamatta debuted at No.10, usurping Moonah's mantle (by three spots) as the club's highest rated course.

Melbourne-based rankings panellist Matt Mollica noted in the judges' comments that RGD's reworking was a "revelation" and that "arguably The National's best land for golf is now home to its best course." Fellow judge Brian Walshe was also effusive: "The National asked Tom Doak to build a course the members would find both playable and fun and he and his associate, Brian Schneider, have delivered a modern take on 'Golden Age' architecture. Gunnamatta is about width and angles into brilliant greens surrounded by fescue that emphasises the ground game... Gunnamatta is about as much fun as you can have on a golf course."

With the membership voting with their feet and the positive feedback across the industry,

it is the ultimate vindication of the club's bold move to push ahead with the redevelopment. For Yanner, it is the ultimate reward and compliment for all those intimately involved in the project.

"The club has got what it wanted, and probably more," concludes Yanner. "It has brought a lot of interest and excitement back into the club and has provided a lot of exposure. It's the sort of course that you just want to come back and play. Visually it is so much more memorable and has some very unique holes that test all levels of ability."

"The golf course is still very raw at the moment and there is still a lot of work to do out there with the fairways, roughs and the landscape areas. But the greens and surrounds are providing fantastic surfaces and have come through the first 12 months exceptionally well."

"Every project is different, but to see the Gunnamatta Course going from a concept through to the finished product has been fascinating. Everyone worked so well together and that's why the project was such a success. Everyone can feel very proud of what they have achieved and the part they played. Hopefully we've created something that is going to be here and enjoyed for a very long time." 🏌️





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## COURSES

*Education City Golf Club is just the second golf course construction in Qatar and is located adjacent to the 2022 FIFA World Cup stadium*



# Top of the class

*The Middle East has seen some significant golf facilities developed over the years, but none quite compare to Education City Golf Club in Qatar. A masterclass in profile design, all playing surfaces – greens, tees, fairways and roughs – have been constructed to USGA specifications. To say it is one of world golf's most unique creations is an understatement and for ex-pat Queenslander Andrew Ikstrums it has provided a career opportunity few greenkeepers will ever experience.*





PHOTOS COURTESY OF EDUCATION CITY GC

Opening in January 2019, Education City Golf Club (ECGC) became just the second golf course in Qatar. The facility consists of 33 holes – two Championship courses (one 18-hole and one six-hole) as well as a floodlit nine-hole par three course – all of which were designed by Spaniard professional Jose Maria Olazábal.

The vision of the project was to design, build and operate a golf facility that would drive

the growth of golf in Qatar, while honouring Qatar Foundation's values of education, innovation, sustainability and research and development. Not only does ECGC offer a unique experience, but it has a memorable backdrop too, with the 2022 FIFA World Cup stadium only a couple hundred metres from the 18th tee.

Qatar does not do things by halves and this could not be truer for ECGC. The complex covers 120 hectares, with all the green areas

of the golf course – greens to rough – being built to USGA specifications. Considering the ambitious vision of creating a world class sporting facility and the high standards set in construction, it goes without saying that the golf course maintenance had to be up to scratch as well.

Tasked with the responsibility of overseeing this facility is superintendent Darren Smith who arrived in 2013 when the place was still a desert landscape. Darren advised on the





construction of the courses before heading up the agronomy team. I was appointed as deputy superintendent in early 2018, arriving as the construction phase was almost complete.

My responsibilities centred around maintenance, taking the course from the grow-in stage to a fully operational club in championship condition. Initially my main priorities included training the team (of 45), taking them from their minimal experience to becoming fully competent greenkeepers, as well as being heavily involved in developing property level policies, such as a maintenance manual and all agronomy plans.

## FROM BUSH TO DESERT

Despite only being 26, I feel I've been in the turf industry a long time. My interest in grass came as a result of wanting to jump on the old man's 42" John Deere and start cutting... he would put the mower in gear and off I went! Growing up on a large property in Baffle Creek, an hour north of Bundaberg, there was always plenty of grass to cut. Behind the caravan park there was a small nine-hole golf course where I would spend most of my afternoons and weekends either playing or cutting fairways. I quickly realised that high school wasn't for me, but luckily Bundaberg Golf Club was advertising for an apprentice greenkeeper and I couldn't get my CV in quick enough!

In 2009 I started my apprenticeship under then superintendent Sean Stuchbery and I will forever be indebted to him and the club for giving me my first break. After completing my apprenticeship, in late 2012 I headed to the Gold Coast to work at Emerald Lakes, before heading across to The Glades Golf Club 12 months later where I rose up the ranks to be assistant. Working there under superintendent Glenn Gibson-Smith helped me immensely, with his enthusiasm, structure and planning allowing me to further refine my skills.

It was early 2018 when I received a phone call out of the blue from an unknown Qatari number. It was Darren seeing if I would be interested in becoming the deputy superintendent at ECGC. Despite not knowing where Qatar was, I said 'Of course, what an opportunity!' I sent my CV in straight away

and by the week's end I had the job! It was certainly a bit of a rush, but on reflection I know I made the right decision.

To say moving to Qatar was a culture shock would be a serious understatement. Coming from the 'bush', I don't think anyone saw me ending up in the desert! One of the biggest changes (and I'm still getting my head around it) would be the different working week which runs from Saturday to Thursday. Friday is a day of prayer for the locals and a day of play for the ex-pats...

Being here for two summers now I don't think I'll ever get used to the scorching temperatures; when it's over 40°C by 5am you know it's going to be a long day! Qatar has a very diverse population, with ex-pats making up over 80 per cent, meaning you are exposed to a multitude of nationalities. The team at ECGC is made up of 20 different nationalities. This has definitely been a learning experience, not only having to learn about local customs and norms but also the variety of different cultures around you.

One of the biggest challenges of working in Qatar is the impact of a current blockade between it and the other Gulf Nations. Not only does this prevent any regional weekend getaways, but more importantly it has a direct impact on our supply chain of products for the golf course. Prior to the blockade, which came into force in 2017, fertility products, sand and pesticides were freighted by truck from surrounding countries. This is not possible



*Far left: Andrew Ikstrums (holding trophy) was appointed ECGC deputy superintendent in 2018. He is pictured at the 2020 Qatar Masters with superintendent Darren Smith (left), Aussie tournament volunteer Ryan Murphy and European Tour agronomist Graeme MacNiven. Left: The ECGC crew*

now and as a result getting products into the country is very difficult. We now get the majority of our products from Australia, which take up to eight weeks to arrive. Before placing any orders, everything needs to go through a pre-approval process, as per government legislation. Just because something was approved before does not mean it will be approved next time, meaning there is nothing as simple as a repeat order.

## CONSTRUCTION EXTREMES

The development of ECGC was part of Qatar's 2030 vision in developing a sustainable tourism market and providing world-class sporting venues. Construction officially started in 2013 with the excavation of the lakes which was followed by rough shaping and the construction of the pump station in 2014. The back nine of the Championship Course was completed first, with the 14th hole being grassed first in early 2015 and the rest of the holes being grassed throughout that year. By the end of 2016 both the front nine and the par three course were grassed. 2017 saw construction start on the clubhouse, driving range building and Centre of Excellence, as well as the testing and commissioning of the par three course floodlights.

When I arrived in 2018 the final holes were being shaped and grassed on the six-hole course, but by October all the grass areas of the facility were grown-in and handed over and we were ready for golfers. The handover of the golf courses aligned with the handover of the buildings, allowing the club to open on 1 January 2019. Despite the construction of the golf courses being completed over a five-and-a-half-year period, they only broke ground on the permanent maintenance facility in April this year!



*Education City CG is wall-to-wall Platinum TE paspalum*



Anthracnose  
(*Colletotrichum*  
*graminicola*),

Brown Patch  
(*Rhizoctonia solani*),

Dollar Spot  
(*Sclerotinia*  
*homoeocarpa*),

Helminthosporium  
Disease (*Bipolaris* spp,  
*Drechslera* spp,  
*Exserohilum* spp),

Pythium Leaf Blight,  
Pythium Root Rot,  
Seedling Damping Off  
(*Pythium* spp),

Fusarium  
(*Fusarium nivale*,  
*Microdochium nivale*),

Take-All Patch  
(*Gaeumannomyces*  
*graminis* var. *avenae*),

# DISEASE SUCCESS



Ectotrophic Root  
Infecting Fungi (ERI)  
[Autumn strategy]

Spring Dead Spot  
(*Ophiosphaerella*  
*narmari*),

Take-all Patch  
(*Gaeumannomyces*  
*graminis* var. *avenae*)

Ectotrophic Root  
Infecting Fungi (ERI)  
[Spring and Summer  
strategy]

Couchgrass Decline  
(*Gaeumannomyces*  
*graminis* var. *graminis*),

Take-all Patch  
(*Gaeumannomyces*  
*graminis* var. *avenae*)

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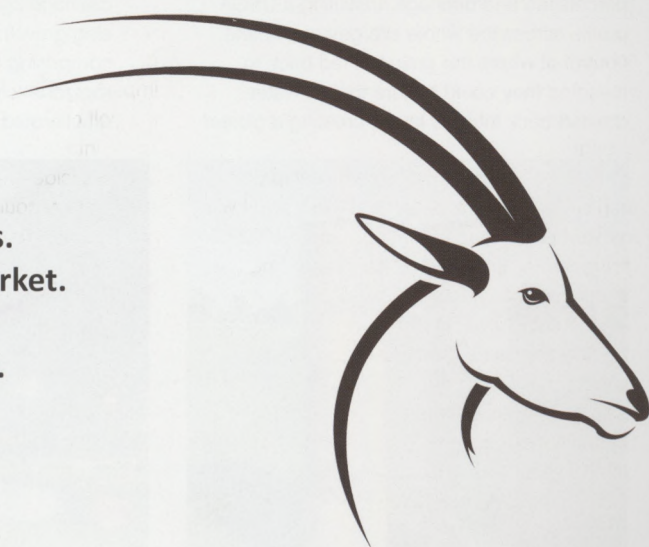
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# Impala Fungicide





The project was designed to be 'cut and fill neutral', with all the shaping material for the project coming from within Education City. The site was initially completely flat, with the fill coming from the excavation of lakes and the World Cup stadium site next door.

As mentioned, one of the unique aspects of ECGC is the fact that all playing surfaces across all courses are constructed on a USGA profile. The rationale behind this was to align with Qatar Foundation's values of research and development and sustainability. The USGA profile acts as a perched water table, resulting in a water consumption saving of 20 per cent. Also, it further supported the goal of providing a world-class sporting facility, as it allows for a superior growing medium.

The concept was to create consistent playing surfaces all year round and I'm fairly confident in saying that we are one of the only facilities in the world that has a USGA profile below all grass surfaces. With the subgrade material being Subka limestone, they felt the rootzone needed to be separated from it with a layer of gravel to allow for consistent water percolation and drainage. Installing a USGA profile across the whole site gave complete control of where the drainage fed back to, meaning they could ensure that all water drained back into the lakes, creating a closed



system and maximising the retention of water in the property.

As I arrived after the majority of the construction was completed, I cannot provide exact details on all quantities of construction materials. What I do know is that the fairway and rough areas on the 18-hole Championship course (34 hectares) required 60,000 tonnes of slag aggregate for the drainage layer alone... that's about 1500 trucks of gravel! For the same area, 156,000 tonnes of dune sand was used for the rootzone mix... another 4000 trucks! And this accounts for only half the grassed areas! The profiles consist of;

- **Putting greens and tees:** 150mm drainage aggregate (2-6mm modified slag gravel); 300mm rootzone mix consisting of an 80 per cent USGA-spec silica sand ameliorated with 5% greens grade profile and 15% organic compost. An impermeable liner was installed around the perimeters of the rootzone material (down to the bottom of the gravel layer) on all greens and tees.
- **Fairway, semi-rough and rough:** 100mm drainage aggregate (2-6mm modified slag gravel); 250mm 'bottom rootzone' comprising of a dune sand; 150mm 'top rootzone' comprising a mix of a dune sand ameliorated with 5% organic compost. This

*All playing surfaces at Education City were constructed to USGA specification. For the fairway and rough areas on the 18-hole Championship course alone, 60,000 tonnes of drainage aggregate was used along with 156,000 tonnes of dune sand for the rootzone mix*

profile was modified slightly for mounded areas and the driving range target greens which consisted of the same drainage layer but a 200mm 'bottom rootzone' and 200mm 'top rootzone', the latter of which was ameliorated with 10% organic compost.

Although not here myself, I know Darren found the installation a fascinating process. Despite the expansive area the USGA profile needed to cover, there were no major challenges with the installation. In fact, the consistency across all turfed areas made it easier as they did not need to worry about different profile mixes, with only the greens and tees requiring a different type of sand (silica sand).

The profile has benefited us greatly when it comes to managing the turf. Having these profiles makes flushing out salts and bicarbonates a whole lot easier, which is essential considering the poor quality of our water. We also face minimal issues when it comes to water retention and drainage. The gravel layer acts as a drainage channel for water to flow, meaning we have no drainage lines. Our catch basins are located on the low points of fairways, with the drainage pipes running directly to the lakes and wadi (ephemeral) areas.

Even though the profile does make our lives a lot easier, it is important not to get too complacent. As a team we constantly review our maintenance and cultural practices to ensure we are getting the most out of the plant. Often this requires experimenting a little to make sure we are providing the best surfaces possible.



*Tubes showing the contrast between the greens and tees profiles (left) and fairway/rough profiles (right)*



*The par three nine-hole course is floodlit for night golf so as to beat the extreme day-time heat*





*Yes, it can rain in Qatar! Although annual average rainfall is just 75mm, in October 2018 ECGC copped a dump of 178mm in a 24-hour period, causing widespread damage*

The finished golf courses specifications are:

- **18-hole Championship course:** Par 72, 7306 yards. Longest hole measures 593 yards from the Championship tees. It is a true test of golf, taking you through the desert and wadi terrain.
- **Six-hole Championship course:** Par 23, 2136 yards. It offers the experience of playing a beautifully manicured Championship course in less than 90 minutes. Each hole has seven tee box locations and can play as easy or as challenging as you wish and supports a range of ability levels.
- **Nine-hole par three course:** Par 27, 1258 yards. Specially designed to allow golfers of all abilities to experience the fun of the game, day or night.

## PREMIUM SURFACES

The whole facility is wall-to-wall Platinum TE paspalum, with over half the property being solid turfed (roughly 60ha) and the rest being made up of desert landscape, lakes and natural wadi complexes.

The paspalum provides unparalleled playing surfaces for multiple reasons. The growth is vertical which minimises grain and the plant has a heavy wax load on the leaf sheaths which reduces dew retention. Its shiny, dark green colour allows sharp patterning, creating a striking visual impact. We can keep the aesthetics at a high level during winter as the paspalum maintains good colour in low light and cooler weather, although we do give it a helping hand with an application of fertiliser.

To maintain the high playing standards and aesthetics, we cut greens at 3.25mm, tees and collars at 5mm, fairways at 10mm, semi-rough at 28mm and rough between 64mm-70mm. These heights are kept consistent across all courses, including the practice facilities.

Nutrition management plays a key role in our programmes and when it comes to foliar applications 'little and often' is our philosophy, spoon-feeding the surfaces 10 days apart to promote consistent and healthy growth habits. Platinum TE has low fertility requirements, especially when it comes to nitrogen (N).

For instance, we only had to apply 134kg of active N per hectare across our greens over the past 12 months, compared to 352kg of active potassium. Our agronomy programmes are heavily reliant on Growing Degree Days (GDD) modelling, as this ensures the growth is regulated and consistent, minimising the stress the plant is under.

Being situated in a desert, Qatar experiences minimal rainfall and high temperatures, making water management critical to the success of our playing surfaces. The winters (if you can call them that) remain mild, with day-time temperatures in the early 20s. However, in the summer the heat steps up a couple of gears with temperatures soaring into the mid-40s.

On average, annual rainfall is 75mm, often coming at the change of seasons. In October 2018 we received a 'one-in-a-hundred-year' storm, recording 178mm of rain over a 24-hour period, with 164mm of that falling in one hour. All the roads flooded, motorway underpasses filled with water and cars were floating down the streets! At the golf course we had a couple hundred trees uprooted, lightning strikes on the fairway and our pump station flooded. It took months to get the golf course back to how it was, from repairing washed out desert areas to fixing bunkers.

Considering 75mm is the average, it is important we have a reliable water supply. All our irrigation water is treated sewage effluent (TSE) which comes from Doha's south

treatment plant. Bicarbonates and dissolved salt levels are quite high and was one of the major reasons for selecting Platinum TE due to its high salt tolerance. Our irrigation system comprises a Toro Lynx central control with Infinity sprinklers. The Flowtronex pump station has a flow capacity of 6300 gallons per minute (close to 24,000 litres per minute).

Our water management plans are tailored to match the challenging weather conditions. The continual use of the weather station, soil sensors and Pogo readings are essential in providing accurate information about the weather and evaporation levels each day, which allows us to confidently and consistently provide the correct amount of irrigation each night.

The highest evapotranspiration (ET) I have seen so far is 14.89mm, however, our daily summer ET average sits around 10mm. These levels, paired with the temperatures, result in an average of 16 million litres of water being put out each evening. Even after a day of extreme heat and evaporation we are still able to comfortably irrigate the whole facility twice in an evening. The reason behind two smaller cycles is to encourage greater water retention by the plant and to minimise run off.

One of the most critical parts of our annual maintenance programme is the renovation of all our playing surfaces. Conducted every June as summer commences, they ensure the integrity of the USGA profile is maintained. Soil tests are done prior to renovations to give us a



*Education City GC hosted the European Tour's Qatar Masters for the first time in March. Six days later it was in lockdown due to the COVID-19 pandemic*





detailed insight into the areas that require the most attention and nutrition. Our greens and tees are treated the same, as they have the same profiles, with the fairways and roughs getting a slightly different treatment. Our renovations comprise;

- **Greens and tees (silica sand profiles):** 5mm double vertical cut, 3mm double cut clean up and 19mm hollow core (1.5' x 1.5' spacings, 784 holes/m<sup>2</sup>). We aim to remove 37 per cent of our greens and tee surfaces, with 3.4 tonnes of silica sand used per green (on average) to refill the core holes and level the playing surface.
- **Fairways (dune sand profile):** -15mm double vertical cut (using a Sisis Veemow), 8mm scalp double cut, blow and sweep debris. 21mm hollow core (2' x 2' spacings), Core Buster drag mat and sweep debris before topdressing and drag to finish.
- **Rough:** -15mm double vertical cut (using a Sisis Veemow), 32mm scalp off (using rotary rough units), blow and sweep debris. 1' solid tine (2' x 2' spacings).

This renovation procedure, alongside our daily agronomic processes and programmes, have the ultimate goal of producing a healthier plant to minimise disease. Our major disease comes in the form of brown patch (typically around the change of seasons) and pythium blight occurring in the summer months. Both of these diseases can be controlled culturally with sand, aeration, thatch management and soil moisture levels.

## ULTIMATE TEST

To maintain the golf course, Darren and I have an agronomy team of 45 ground staff, including four foremen, an irrigation technician and a spray technician. The majority of the team are from Bangladesh, with the exception of head foreman Sunil (Nepal) and foremen Arnel and Ronald (The Philippines). There are definitely language barriers, but it has allowed me to explore new ways of communicating,

especially when trying to gauge if the staff have understood what they have been tasked to do. I have found learning about their culture and norms fascinating, although I am yet to embrace eating curry for breakfast!

With our goals centred around maintaining excellent playing standards, we run an extensive fleet of equipment. We have over 100 pieces of machinery in our fleet, with 35 per cent being hybrid mowers. Just before I arrived, the club signed a deal to become the first Middle East club to be fully equipped with John Deere machinery.

All crew and equipment were put to the ultimate test back in early March when we hosted the European Tour's Qatar Masters for the first time. Having been held at Doha Golf Club since 1998, it was a big move to shift the tournament and coincided with the club's official grand opening. With neither Darren nor I being involved in a tournament of such magnitude before, our main focus was on planning and preparation and getting everything right in the lead-up.

My personal philosophy is that the golf course should be set up and presented in tournament condition every day of the year, meaning there were no significant changes to the agronomy team's daily operations in the build-up to the tournament. With the European Tour setting the green speeds, we just had to ensure the greens were primed to be cut lower, going from our usual 3.25mm down to an eventual tournament height of 2.75mm.

Once the Tour arrived, our rolling practices also increased, allowing stimp readings to get to 12.4 feet and moisture content readings averaging 16-19 per cent throughout the tournament. During the tournament we would cut and roll greens in the morning (also rolling the 5mm collars) and roll greens in the afternoon. The fairways were kept firm and tight at 10mm and the rough lush at 70mm.

Despite thorough planning there were always going to be unexpected challenges. On the Monday evening, the Tour asked us

*To maintain the high playing standards, cutting heights are kept consistent across all courses, including the practice facilities. Greens are cut at 3.25mm, tees and collars at 5mm and fairways at 10mm*

to re-pack all 91 bunkers faces due to a few reports of plugging during the practice rounds. This required a colossal amount of work and some very long hours for the boys. Thankfully our team, with the help of an additional 15 labour hire staff, managed to get the work completed before the Wednesday Pro-Am.

Throughout the week the Tour's agronomist Graeme MacNiven was in constant communication with us, picking up on any details that weren't quite right. This required a great deal of adaptability and being able to react to any of their demands quickly was important. Again, this uncertainty about what the week would throw at us emphasised why getting the basics right in the lead-up was so important.

From the heights of hosting the Qatar Masters, just six days later the world came crashing down as we found ourselves having to close the facility due to the COVID-19 pandemic. After three months in lockdown, on 12 June we were finally allowed to reopen to members and the hope is that they will be allowed to welcome guests back in from July, with the course opening up to the public after that.

It was great to be able to welcome the members back and since re-opening we have seen a huge influx of new members – in one week alone we had 80 new members sign up! The club has had to adapt due to the change in operating environment and has been offering short term memberships from one month deals to 12 months. One thing we can learn from COVID-19 is the need to be flexible and so far it seems to have been well received.

From a maintenance perspective, we were very fortunate we didn't lose any of our permanent staff. In saying that, we have had had some decent budget cuts and budgets re-forecast (as a whole the facility is looking at a 30 per cent cut for next year).

Moving into summer is never easy here and the three-month lockdown created some additional challenges. Motivating staff was difficult, especially as they were concerned about their families and their own health. As soon as the course closed we brought forward our renovations, but with the daily team size being reduced, social distancing enforced and the working hours shortened (due to government regulations), the process took significantly longer. It was a worthwhile exercise, however, and the course has bounced back even better than before. Now with golfers back out we are looking forward to getting back to some normality and presenting this unique and fascinating golfing facility for everyone to enjoy. ﷲ





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## TOURNAMENTS

*As the most lucrative event on the annual PGA Tour, no expense is spared to ensure the playing surfaces at TPC Sawgrass are nothing short of perfect for The Players Championship*

# TPC perfection

*The Players Championship in early March became golf's first high profile victim of the COVID-19 pandemic, with the PGA Tour cancelling the tournament after the opening round. For the four sports turf managers who were there as part of the ASTMA and John Deere sponsored TPC Volunteer Program, it was an experience they won't likely forget.*

It happened fast – real fast. Midway through the opening round of The Players Championship (TPC) at TPC Sawgrass in Florida, PGA Tour Commissioner Jay Monahan called a press conference in response to the growing situation with the COVID-19 pandemic.

The previous evening, while Monahan was attending the pre-tournament reception, the NBA made global headlines when it announced it would be pausing its 2019/2020 season after Utah Jazz centre Rudy Gobert tested positive for COVID-19. While other US sporting competitions followed in the NBA's footsteps, at that midday press conference



JOHN DEERE  
GOLF



Sawgrass

on Thursday Monahan reaffirmed the Tour's commitment to keep playing the event, albeit that fans would not be allowed to spectate for the remaining three rounds. By 9.30 that evening, however, the tournament was off.

At his Friday morning press conference, Monahan talked about the rapidly changing nature of events and the decision to cancel: "We're obviously incredibly disappointed to suspend the PGA Tour's season for our players and our fans. I've said all along, the health and safety of everyone associated with this

organisation is our number one priority. We tried to be as thoughtful and measured as possible during this dynamic and challenging time. We took all the steps within our control and felt comfortable proceeding.

"I'm proud of the team. And I'm a fighter. I wanted to fight for our players and our fans and for this Tour to show how golf can unify and inspire. But as the situation continued to escalate and there seemed to be more unknowns, it became a matter of when, and not if, we would need to call it a day."

The Players Championship is steeped in history and has been a marquee fixture on the PGA Tour since the mid-1970s when Jack





year were three Australian superintendents and a Kiwi counterpart who were chosen as part of the inaugural TPC Volunteer Program run by the Australian Sports Turf Managers Association in conjunction with Silver Partner John Deere.

Luke Helm (Meadowbrook GC, Qld), Tim Hoskinson (CSTM, Cairns Golf Club, Qld), Tony Gordon (The National GC, Vic) and George Flynn (Pukekohe GC, NZ) went through a rigorous application process before being selected last November, arriving at TPC Sawgrass on 6 March, the Friday before the tournament teed off.

Assisting with course preparations up until the first round, unfortunately they too became victims of the pandemic and the tournament's cancellation. Within 24 hours of finishing their set-up tasks ahead of Thursday's opening round, through the swift coordination of John Deere they found themselves on a plane back home. Once back, they were forced to go into self-isolation for 14 days as both countries had started imposing restrictions on returning travellers.

"It was kind of surreal as it all happened so quickly," reflects Hoskinson, superintendent at Cairns GC since 2017. "Just before I left our irrigation technician Karl asked me whether I had any concerns about COVID-19. It was early March and at that time I didn't. However, just seven days into the trip places were shutting down, travel was being suspended and countries were going into lockdown.

"Within that 12-hour period on the Thursday, it went from being a possibility of no spectators for the weekend, to a complete ban on spectating and staff being told even they weren't allowed to spectate, to the whole event being cancelled! It was devastating for everyone when we heard the news. As volunteers we were gutted, but you really felt for the crew at TPC Sawgrass as they had been working their tails off for months leading into the event. I really take my hat off to John Deere who looked after us and got everything sorted so that we could come home to our families quickly and safely."

PHOTOS: TIM HOSKINSON, TONY GORDON, LUKE HELM AND GEORGE FLYNN

Nicklaus collected the inaugural title at Atlanta Country Club. The tournament moved to north east Florida in 1982, the Stadium Course specifically designed by course architect Pete Dye with the purpose of challenging the Tour's best. Sadly, in the lead-up to this year's event, Dye passed away at the age of 94.

In the years since arriving at Sawgrass, the tournament has grown in stature to become the Tour's biggest event, boasting a \$15 million prize purse. It attracts one of the strongest fields in golf and with a fan-friendly course, boasting its famed 17th island green, it has come to be regarded as golf's unofficial 'fifth Major'. Millions of dollars in

charitable donations are made to the local community and organisations as a result of the tournament, while for the golf course management profession it brings together volunteers from across the world eager to experience tournament preparations at the elite level.

For the 2020 event, a total of 90 volunteers had arrived at TPC Sawgrass the weekend before the tournament, complementing the already 110-strong crew overseen by director of golf course operations Jeff Plotts, his assistant Lucas Andrews and superintendents Kyle Elliott (Stadium Course) and Shannon Wheeler (Valley Course). Among them this

## NOT A BLADE OUT OF PLACE

Despite the abrupt end, the Down Under quartet garnered plenty from their trip. Due to the stature of the tournament, course presentation is of paramount importance and the lengths that Plotts and his team go to achieve that is something to behold.

Up until 2018, the tournament was traditionally held in early/mid-May, but with a change of scheduling the PGA switched it to early/mid-March for the past two seasons. The change made logistical sense as it became the third of a four-tournament Florida swing and now provides a perfect lead-in to the Masters held in early April.





TPC Volunteer Program members (from left) Tony Gordon, George Flynn (seated), Luke Helm and Tim Hoskinson

That two-month forward shift meant a big change for the course and the crew with the tournament now played on oversown surfaces. At the end of October the course is closed and contractors are brought in to oversow the facility wall-to-wall at a cost of about \$US2.4 million. The Celebration couchgrass fairways, tees and roughs are oversown with an 80/20 blend of ryegrass and fescue, while the TifEagle couchgrass greens are oversown with a blend of *Poa trivialis* and velvet bentgrass. The seed is sown in the fairways and flat areas of rough by a tractor-driven air injection machine, while staff seed all remaining slopes, bunkers and greens by hand with push spreaders.

The TPC Sawgrass agronomy team and the PGA Tour view this event as their 'gold standard' and no stone is left unturned to get the facility ready. From the first-class maintenance facility to the meticulous pampering of the overseeded turf, nothing is

out of place. With a 200-strong tournament crew on deck, some of the maintenance practices include;

- The overseeded rough is cut at 65mm with 40 walk-behind rotary mowers rather than large rough cutting units to avoid heavy wheel marks and stand up the grass blades.
- Greens are cut at 2.5mm and tees/fairways at 7.6mm. Greens, tees and fairways were cut morning and night each day, the greens usually receiving a double cut and roll in the morning. Each green has the PrecisionAir system installed.
- To get the level of perfection with the Stadium Course's 88 steep, grass-faced bunkers, 50 man-hours are dedicated daily to preparing them – raking, fly-mowing – during tournament week. Some bunkers range in size from just a rake-width across to others which stretch more than 250m in length (see photo bottom opposite page).



When you have 200 on the tournament crew, course preparation just flies by

- In the lead-up to the tournament, over the course of four days a contracted crew of 100 is brought in to place \$US600,000 in pine straw outside the rough areas to achieve a look similar to Augusta National.
- An illustration of how far things can be taken with a tournament crew of 200 – one person was assigned each morning to 'roll pro walks'. Using a meter-wide sponge roller on the end of a rake handle, a crew member would clear the dew formed on the short cut strip of grass from the tee to the fairways, so the players' shoes wouldn't get too wet in the morning!

ATM asked the four TPC Volunteer Program members to pen a few thoughts on their time in Florida and what they took out of their trip. Despite not getting the full experience due to the extraordinary circumstances, all agree that the trip was well worth it and provided plenty of memorable moments. What follows is a snapshot of some of their highlights...

## LUKE HELM

### Meadowbrook GC, Qld

"Even though the trip was cut short due to COVID-19, I got a tremendous amount out of the experience. The very first morning on the course I was thrown in the deep end when I was told I'd be walk-mowing greens. My first green to mow was the main putting green where I had Jeff, both course superintendents, four assistants and two PGA Tour officials watching me. Talk about pressure!

Adding to the challenge was there was no dew that morning and it was almost impossible to see the mowing line, but once I had that dialled in I never took my eyes off it! It was some introduction to the US PGA Tour and I don't think I've ever had a level of concentration like that in my life! To mow the huge putting green took an hour, but thankfully I passed the test and was on to the course to mow more greens.

On the greens we measured our clip, averaging around four gallons per green at the start of the week and getting down to around two gallons by tournament time. Green speed was fast, stimping at 14 for the first round. We actually stopped mowing in the afternoon as they were getting too quick. The faith Jeff and his team put in us as turf professionals to just put us on their greens the week of the tournament was incredible and it was certainly a great sense of achievement.

My afternoon jobs consisted of bunkers and hand-mowing rough. Yes, hand-mowing rough... it was truly unbelievable the lengths they went to get the course perfect! The level of professionalism was visible for all to see and they were so well organised. All machines were out and lined up ready to go for the morning set-up and any mechanical issue that



would arise was fixed in a matter of minutes as one of 10 mechanics would be following as you went about your course preparations.

There was always a supervisor within 100 metres if you had any questions or concerns and once you had finished your designated task you would proceed back to the shed where you were greeted by a full-time employee at the wash down bay. His job was purely to keep the machines looking like new!

Obviously everyone was very disappointed when the news came through that it was being called off. To do the prep all week and only get one round in was deflating. You could see the TPC staff were also extremely disappointed. John Deere reacted tremendously and had us on flights home the following day and a huge credit goes to Howard (Storey) and Kodi (Becket) for their professionalism and care.

My impression of TPC Sawgrass was 'perfection'. The course design is the best I've experienced and you get the feeling you are somewhere very special. The greenside bunker design was something I was considerably impressed by due to its fantastic look and fairly low maintenance levels. The height definitions between greens, collars and rough can totally change the visual aspect of a golf course and is something I'd like to look at next summer for Meadowbrook and think outside the box a little."

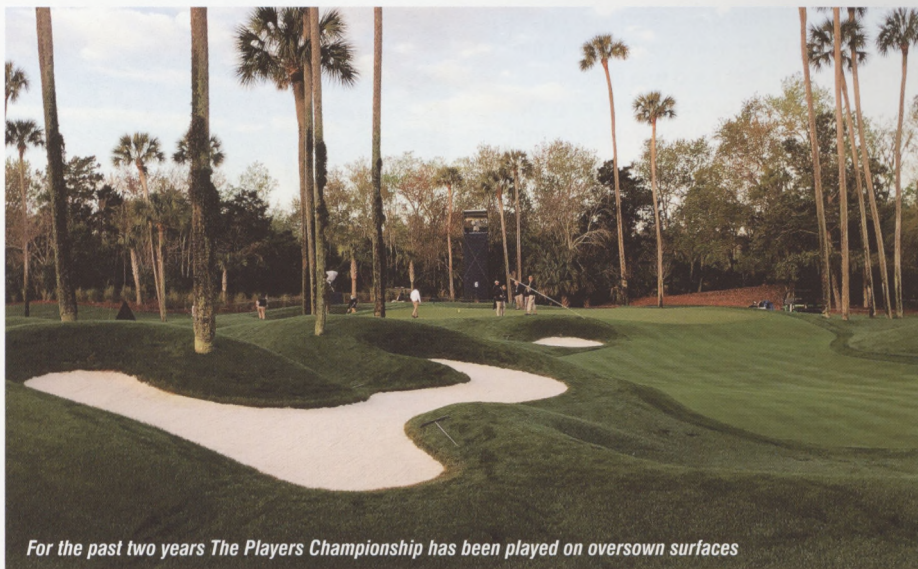
## TONY GORDON

**The National GC, Vic**

"This was a great experience both personally and professionally. I was on a bunker crew where our group of 10 prepared the front nine bunkers each morning and trimmed and groomed them in the evening. There are over three hectares of bunkers on the Stadium course and several of them over 250m long. While not the most glamorous of jobs, being on the bunker crew did allow the freedom to move around the course, take photos and observe other tasks being executed without being constrained to a mower.

During this time I was able to quiz the full-time staff about the maintenance processes on the course. We also had the opportunity to speak to several of the assistant superintendents and have brief conversations with Jeff and Lucas. From those I was able to bring back a number of observations that will assist with planning and organising some of our larger practices (e.g.: renovations) or special projects. As we have overseeded surfaces at The National, it was interesting to learn of their practices and methods and some of the machinery they use.

*TPC Sawgrass dedicates about 50 man-hours daily to preparing the Stadium course's 88 grass faced bunkers during tournament week. Some range in size from a rake-width across to more than 250m long*



*For the past two years The Players Championship has been played on oversown surfaces*

The design, size and quality of the maintenance facility was first class – plenty of room for staging such a big event and good amenities for the crew. It reminded me of my first visit to Royal Melbourne to see the new sheds there. At first you are overwhelmed by the size, but after you calm down you can reflect on the amount of thought that went into the layout to maximise efficiency. It is simply good design, with enough space and all the tools and material handling equipment that really should be in every shed but are often cut back because of budget constraints.

From Jeff right down to the team leaders and the Hispanic labourers, all the TPC Sawgrass staff were very open and happy to share any information that they could with us. It was also interesting to have discussions with other course superintendents about their struggles finding not only quality workers, but any workers for that matter, and what they are doing to attract them.

I was even able to quiz one guy who had been there from the day the course was carved out of the swampland to try and verify or dispel a couple of stories. He was able to confirm that at one point during construction there were several places they just couldn't get to easily to clear out and maintain the scrub. Goats were

brought on site to help them reclaim several areas and stayed on after construction to help out also. It all ended, however, when one of the goats ended up on the roof of the clubhouse!

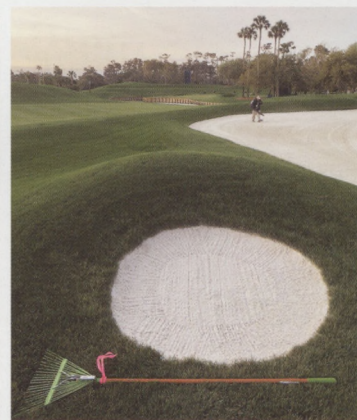
While many of their course maintenance practices undertaken at TPC Sawgrass are well beyond the reach of ordinary clubs, you can only but admire the standard they achieve. One may argue that what they do is completely over the top, but this is meant to be the premier event for the PGA Tour and they are simply pursuing the best possible surfaces with the resources at their disposal. This is the same reason that one cannot fault a Formula 1 car for not being fuel-efficient; both are meant to push the boundaries of what is possible."

## TIM HOSKINSON (CSTM)

**Cairns GC, Qld**

"TPC Sawgrass is unbelievable and it is difficult to explain exactly how much effort goes into achieving such a standard of maintenance. The detail work is incredible. Their budget is almost open ended and there is not a blade of grass out of place on course.

The course is an absolutely brutal test of golf. The fairways are narrow and there are bunkers and water everywhere. The bunkering was definitely a strong feature with their steep





## TOURNAMENTS

grass faces and Pete Dye design. Having seen the course on TV for many years, seeing the 17th island green first hand was special.

I was part of the bunker crew during my week there. The expectations were high and there were always supervisors following the workers around checking on their work. Until we got it right there were a few times people would get called back to fix things.

I was lucky enough to meet quite a few people during my time at TPC and talk with a few supers from the UK and Europe. Everyone was super keen to get involved and it was great to get other people's opinions on the course and hear about what they are doing at home on their courses. I was also lucky enough for one of the assistants to take me on a tour of the Valley course one day and check out their office spaces and pump sheds.

As well as having a good look at the course and just being involved in the tournament set-up, I really wanted to get an understanding of some of their fertiliser and chemical programmes. While they weren't willing to disclose full information, I did get some idea of the products they used. I also wanted to check out their irrigation system and their new potable water upgrade which will allow them to just water greens which was definitely impressive (and expensive)."

### GEORGE FLYNN

#### Pukekohe GC, NZ

"TPC Sawgrass is a truly amazing piece of golf course architecture mixed with perfection. You cannot fully appreciate this until you walk the hallowed turf. I guess for me, I wanted to gain an understanding of what it was like to operate on that level, a level at which very few get the



**No shortage of staff or John Deere equipment**



**Luke Helm scored the plum job of cutting greens**

opportunity to experience, and appreciate what goes on behind the scenes at a tournament of this calibre.

The first morning of preparation we began while in the dark, a sea of yellow and green venturing out onto the golf course to set the course up and dial in those 'one percenters'. Initially while we were in the dark I was struggling to gain my bearings, however, once the sun came up and the golf course emerged, in among its perfection, it was one of those 'wow' moments.

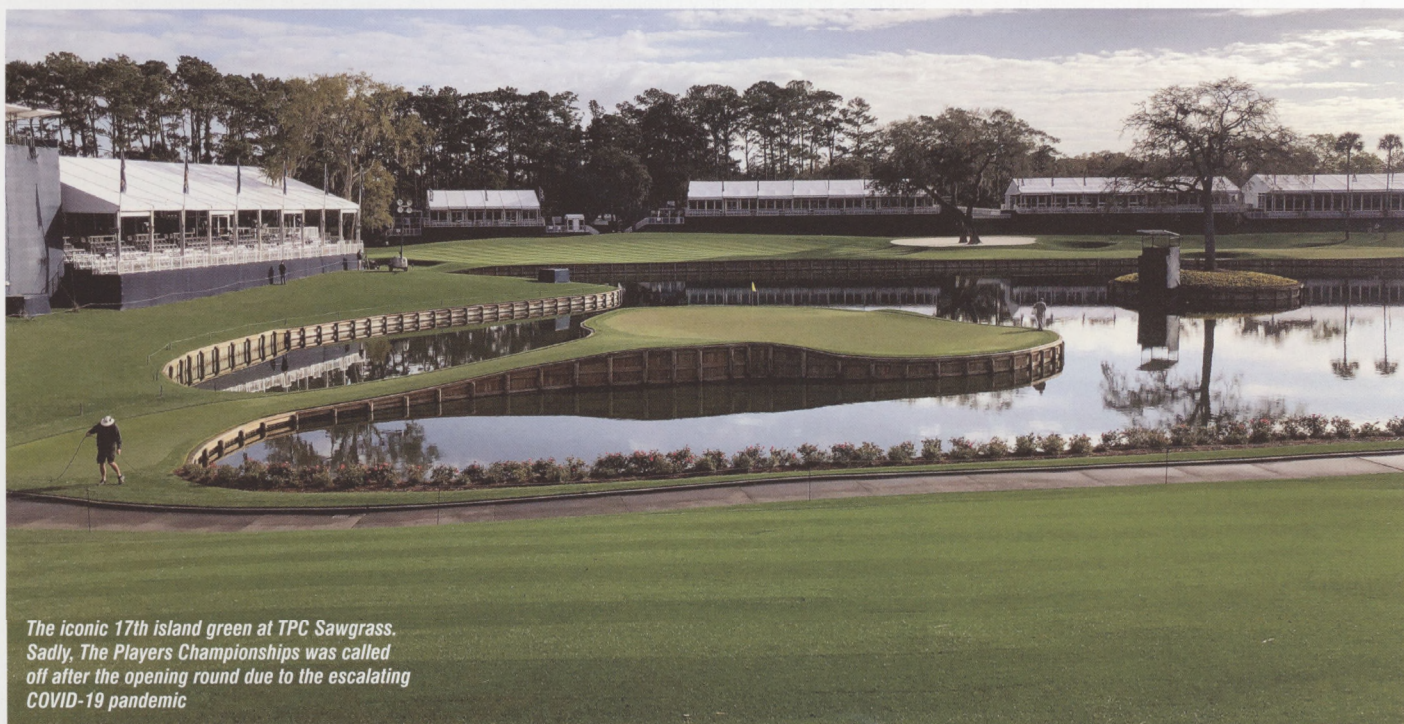
My tasks included what they referred to as 'detailing work', not the most labour-intensive task but it was vital to ensure everything was perfect for the tournament. This involved working directly with a senior TPC Sawgrass crew member and ensuring everything was in order after the team had been through. I really enjoyed these tasks as we were able to see all the beauty unfold in all of the course maintenance sections as the team went about their duties.

Jeff, Lucas and the whole leadership team were great to work with. They went out of their way to ensure you felt welcome and provided any information that you required. I gained some great contacts and friends from throughout Australia, the US, the UK and all around the world.

The thing which amazed me the most was the machinery rolling out every morning, ready to complete their tasks for the day. Upwards of 200 course agronomy personnel on their way to prepare a golf course for The Players Championship was really something spectacular.

Unfortunately, things ended rather strangely with the evolving COVID-19 situation and it was reassuring to know that we had the support of John Deere to get us home as safely and as promptly as possible. Once I had arrived home, it was off to the bach (beach house) for two weeks of self-isolation followed by four more weeks of quarantine as New Zealand went into Level 4 lockdown.

Overall, I got to experience the setup of one of the most pristine courses in the world. I cannot thank John Deere enough for the opportunity and would highly recommend it to anyone. 🇺🇸



*The iconic 17th island green at TPC Sawgrass. Sadly, The Players Championships was called off after the opening round due to the escalating COVID-19 pandemic*



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## CERTIFICATION

*The new ASTMA Certification Program sets a quality benchmark for the sports turf management industry by formally recognising the skills of its professionals*



# The mark of a professional

*In May, the Australian Sports Turf Managers Association (ASTMA) launched a new industry certification programme which formally recognises the professionalism of sports turf managers and encourages the continual investment in education and development.*



Australia's sports turf managers are rightly regarded as among some of the best exponents of their profession in the world. From those who manage the famed golf courses on the Melbourne Sandbelt, the major stadiums and arenas which attract tens of thousands of fans every week, through to the multitude of regional sports facilities that are the lifeblood of community life, sports turf managers play an integral role.

One of the main responsibilities of the Australian Sports Turf Managers Association (ASTMA) is to maintain and improve the quality, recognition and professionalism of the industry, in addition to promoting its professionals and their role to the public. To assist in this endeavour, in May it launched the new ASTMA Certification Program. This initiative sets a quality benchmark for the sports turf management industry and helps to formally recognise the skills of its professionals and the role they play.

Looking at the ASTMA's overseas partners (e.g.: GCSAA and BIGGA) as well as similar industry peak bodies and their respective certification programmes, it is clear the impact that such schemes have. In all cases certification programmes not only have a profound affect in terms of recognition of the industry, but also on the members in lifting public awareness of their level of professionalism, education and value.

With that in mind, over a number of months the ASTMA worked on tailoring a certification programme specific to the sports turf industry. What it has come up with is a robust scheme that not only recognises the vast skill set that a modern day turf manager is required to possess, but also the importance of members investing in continuing education and their professional development.

Those who attain certification under the new programme will be entitled to use the Certified Sports Turf Manager (CSTM) designation after their name. The 'CSTM' designation is designed to be the most widely recognised industry standard and the highest recognition that can be achieved by sports turf managers in Australia. Being a CSTM is a mark of leading professional competence, indicating reliability in depth and quality of performance, skill and knowledge.

Earning the status of CSTM involves a combination of formal education, experience in turf management and ongoing professional education. Through earning the designation of CSTM, a member demonstrates a personal commitment to education, professional development and elevating the sports turf management profession as a whole. Importantly, it also documents and validates a turf professional's achievements and competencies to employers.



*The 'Certified Sports Turf Manager' designation is a mark of leading professional competence*

## ELIGIBILITY

So how does a sports turf manager become 'certified' as part of the new ASTMA Certification Program? To achieve certification and therefore be able to use the 'CSTM' designation, a turf manager must;

- Be a member of the ASTMA. The Certification Program is open to all membership types – Full, Standard, Trade and International – but excludes apprentices.
- Meet the 'prior learning requirements' recognised by the ASTMA and/or attain eligibility requirements through an appropriate level of employment or professional industry experience;
- Pay a one-off \$195 certification assessment administration fee; and
- Complete and achieve a minimum of 70 per cent in the online certification assessment.

To begin, turf managers must achieve a minimum of 20 points of prior education and/or professional experience to be eligible. Formal education includes the various Certificates and Diplomas of Sports Turf Management courses or Bachelor degrees which are attributed a certain number of points. Other formal qualifications, such as a chemical handling certificate, can also be used towards the applicant's points tally. Professional experience in the sports turf industry also goes towards prior learning requirements, with one point earned for each year served post-apprenticeship.

If a turf manager is under the minimum requirement of 20 points in formal education plus professional experience, further education or experience must be undertaken to achieve the minimum benchmark before applying.

Once prior learning requirements have been proven, the turf manager then undertakes an online assessment designed to assess their competence across a range of key agronomic areas. The assessment comprises 107 questions, testing knowledge in five categories;

- Soil performance;
- Soil calculations;
- Plant biology;
- Disease and chemistry; and
- Irrigation and water.

Overall, a 70 per cent pass rate is required to attain certification. The online assessment can be stopped and started at any time and generally takes about 1.5 hours to complete. Upon achieving the 70 per cent pass rate, the turf manager is deemed to have attained certification and is sent a certificate acknowledging that they are a Certified Sports Turf Manager.

## MAINTAINING CERTIFICATION

Once the CSTM designation has been achieved, the process doesn't end there. At the programme's core is the concept of continual professional development which is vital in order to keep vital skills up to date. To maintain professional certification the turf manager must achieve a minimum of 25 Continual Professional Development (CPD) points over a two year cycle. CPD refers to the process of tracking and documenting the skills, knowledge, training and experience that turf managers gain formally beyond their initial training. The objective of CPD is to keep professional knowledge and skills current, develop and adapt careers and maintain status as a CSTM. CPD points are a record of what education or training turf managers experience, learn and then apply as an active demonstration to their commitment as a CSTM.

CPD points can be obtained in four areas (the ASTMA website has the full list of activities and points attributable):

- **ASTMA service points:** Examples include winning an ASTMA Award (e.g.: Excellence in Golf Course Management Award or Claude Crockford Environment Award), presenting at an ASTMA education event (such as the annual conference or seminar series), or serving on the ASTMA Board.
- **State association service points:** These include serving on a state association committee/board, winning a state association award, presenting at an endorsed state association education day and attending a state association AGM.
- **Training and education points:** These include attending the annual conference (either as a full or day delegate), attending an ASTMA or endorsed state association education event, writing or contributing



to a turf management article published in Australian Turfgrass Management Journal or volunteering for a major tournament at an Australian or international venue.

- **Approved professional development education:** These include completion of a recognised training/competency course (e.g.: irrigation, first aid, WHS, chemical handling, chainsaw operating), completion of a Certificate II in a related field of horticulture or completion of other non-turf qualifications (e.g.: Diploma or Bachelor degree in business management).

ASTMA members can view and track their current CPD points through accessing their profile on the ASTMA website. They can also apply for points to be added through notifying the ASTMA of completion of activities, while state associations and ASTMA industry partners can apply for CPD points to be allocated to their educational events.

## STEP IN THE RIGHT DIRECTION

Since launching in mid-May, the response by ASTMA members to the programme has been strong with around 40 sports turf managers completing the certification process and many more currently in progress. Among the first to attain certification was Metropolitan Golf Club course superintendent Dave Mason (CSTM). A 20-plus year veteran of the industry and superintendent of one of the Melbourne Sandbelt's elite courses for the past five years, Mason says that such a programme is a real positive step forward for the industry.



*The ASTMA Certification Program champions the importance of continual professional development*

"The ASTMA Certification Program is the commitment that turf managers need from our association," says Mason. "For too long the professionalism of our industry has been questionable and this is another step closer to acknowledge those who strive to enhance their skills, knowledge and professionalism. The staff at the ASTMA need to be acknowledged for their commitment to their members by instigating this programme.

"The role of the turf manager has continued to evolve, with very few outside the industry understanding the tasks and skill-set required to be successful. That success is not measured by getting to the best golf course, racetrack or sports field. There are so many who are at the peak of their career, working extremely hard with ever-changing conditions, regulations and requirements and in many cases they are not given the acknowledgment they deserve for doing all they do.

"This CSTM is a step in the right direction for all who choose to undertake it, as well as allowing those long-term professionals to

continue to educate themselves as they too strive for a more professional industry.

"It is up to each individual to keep relevant, current and in tune with the changing workplace and this has never been more critical than now. Apprenticeships, diplomas and turf degrees are extremely significant, but the options for additional skills and continuing education is equally as important. Report writing, public speaking, computer skills, media and communication, accounting, human resources and leadership are all just part of what we require for our roles nowadays. These are all skills that can be undertaken and studied and it is well worth it."

Manly Golf Club superintendent Luke Partridge (CSTM) was also an early adopter of the certification programme and hopes that his fellow turf managers will invest the time and energy in the scheme to drive increased levels of professionalism.

"Earning and retaining the CSTM designation proves to my employer and the rest of the industry a high level of commitment to our profession. After going through the process, I am honoured to share this designation with my fellow colleagues and would encourage all ASTMA members to take part in the programme."

For more information about the ASTMA Certification Program and to apply to join, visit the 'Membership' tab on the ASTMA website ([www.agcsa.com.au](http://www.agcsa.com.au)) and click on 'Sports Turf Manager Certification Program' or contact the ASTMA on (03) 9548 8600. 📞

## CONGRATULATIONS TO OUR CERTIFIED SPORTS TURF MANAGERS

The ASTMA wishes to congratulate the following turf management professionals for becoming among the first to attain the Certified Sports Turf Manager designation through the ASTMA's Certification Program.

**Shane Baker** (Mosman Park GC)

**Brett Balloch** (Anglesea GC)

**Nathan Bradbury** (Eastlake GC)

**Harry Brennan** (Dubbo City Council)

**Fraser Brown** (Lake Karrinyup CC)

**Ben Bruzgulis** (Cronulla GC)

**Chris Burgess** (Yarrowonga Mulwala GC)

**Gregory Burgess** (Northern GC)

**Dan Cook** (Elanora CC)

**Tim Fankhauser** (ASTMA)

**Peter Fraser** (Hervey Bay G&CC)

**Cameron Hall** (Kew GC)

**Mitch Hayes** (Brisbane GC)

**Tim Hoskinson** (Cairns GC)

**Jay Infanti** (Eastern GC)

**Nick Kinley** (Hartfield CC)

**Joshua Leyland** (Box Hill GC)

**Peter Lonergan** (Coolangatta Tweed Heads)

**Bruce Macphee** (ASTMA)

**Dave Mason** (Metropolitan GC)

**Tony McFadyean** (Nedlands GC)

**Peter McNamara** (Brisbane GC)

**Keith McPhee** (Maitland City Council)

**Ben Mills** (Hawks Nest GC)

**Colin Morrison** (Flinders GC)

**Kelvin Nicholson** (Palmer Cooloom Resort)

**Luke Partridge** (Manly GC)

**Ben Payne** (Peninsula Kingswood CGC)

**Wesley Saunders** (Dunblane New GC, UK)

**Robert Savedra** (Wesley College)

**Thomas Smith** (Waterford Valley GC)

**Mathew Soles** (The Australian GC)

**Clinton Southorn** (Abu Dhabi GC, UAE)

**John Spraggs** (Royal Wellington GC, NZ)

**Aaron Taylor** (The Lakes GC)

**Ben Tilley** (Headland GC)

**David Thomson** (Bermagui CC)

**Steve Tuckett** (ASTMA)

*"I undertook the certification process as a way to further my personal development and improve my career prospects in the future, but most importantly to gain a recognised industry certification. I see this certification as an important step in changing the local government attitude of "anyone can mow and maintain turf" by way of elevating the sports turf management profession as a whole." – Harry Brennan (Dubbo City Council)*

*"The ASTMA Certification Program is a chance to substantiate our experience and provide a national brand for turf managers. The CSTM brand can be achieved by turf managers in all areas of turf management, which will help bring us together and raise the profile of the industry as a whole." – Mitch Hayes (Brisbane Golf Club)*

*"I believe undertaking the certification process is essential to promote ourselves as professionals. Certification is an effective way to recognise sports turf managers who are dedicated to the development and promotion of our industry. By becoming a Certified Sports Turf Manager, it creates a path to inspire ongoing education and communication amongst turf professionals." – Keith McPhee (Maitland City Council)*





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Thomas Bath, pictured volunteering at last year's Australian PGA Championship, will represent the GCSAQ in the final of the ASTMA Graduate of the Year Award



# Graduates on a roll

In 2018, the Graduate of the Year Award created history when Bryce Walsh (Tasmania) and Daniel Hendrie (NSW) were announced joint winners for the first time. Fast-forward a year and yet more history was made when Thomas Burridge became South Australia's first ever graduate recipient. Now in its 25th year, the 2020 edition of the award will also enter the history books, but for very different reasons.

Normally presented during the Syngenta President's Dinner on the opening night of the annual turf conference, this year's award ceremony has unfortunately become a victim of the COVID-19 pandemic after the conference was sadly cancelled. Despite that, the 2020 awards will still proceed, albeit via slightly different means.

Judging for the awards usually occurs on the eve of the conference, however, in this day and age of social distancing the judging will now take place online via Zoom. Each finalist will give a short presentation about themselves and their careers to date, before being grilled by the judging panel.

*The annual conference may not be going ahead in 2020, but the ASTMA and STA Graduate of the Year Awards are still set to be hotly contested. ATM profiles this year's contenders.*



A total of 12 graduates will line up for this year's finals, seven contesting the ASTMA Graduate of the Year Award and five vying for the STA Sports Turf Graduate of the Year Award, both sponsored by long-term partner Toro Australia. ATM congratulates the following finalists and wishes them well for the judging.

## ASTMA GRADUATE OF THE YEAR



### THOMAS BATH GCSAQ/Palm Meadows GC

The youngest of this year's ASTMA Graduate of the Year Award finalists, 18-year-old Bath has been employed as a qualified greenkeeper at Sanctuary Cove G&CC since September last year. He started his apprenticeship in 2016 at Palm Meadows GC under the guidance of superintendent Darren Lee and assistant superintendent Blaine Knox, who Bath credits with helping him progress dramatically.

Completing his Certificate III in Sports Turf Management at Wollongbar TAFE, Bath has since started a Diploma of Sports Turf Management through Ryde College of TAFE in Sydney. Bath particularly enjoys the science behind turfgrass management and the inputs that go into providing a quality sports turf surface. Among the highlights of his career to date include volunteering at the 2017 and 2019 Australian PGA Championships at RACV Royal Pines.





## MITCHELL CLAY

### GCSAWA/Mandurah CC

Clay becomes the third apprentice in five years from Mandurah CC to represent the GCSAWA. Clay started his apprenticeship in January 2017 and attended South Metropolitan TAFE in Perth. Golf has been a key part of Clay's upbringing and he started swinging a club at the age of five. He has continued playing throughout his life and has represented Mandurah CC in men's and junior pennant.

Appreciating the importance of having great turf to play on as a golfer, it was a natural progression for Clay to pursue a career in greenkeeping. Mandurah CC holds an annual Pro-Am and amateur event, with Clay playing a key role in preparing for these events over the past three years. He has also been involved in a greens replacement project, irrigation upgrade and clubhouse refurbishment.

Outside of turf, Clay and his brother Lewis have an interest in greyhound racing as trainers and handlers. They purchased a four-acre property in 2019 and along with their father recently built kennels to house up to 20 dogs, with Clay designing and installing the irrigation for the yards.



## ANGUS BEASLEY

### NSWGCSA/Gunnedah GC

A short-term labouring position at Gunnedah Golf Club in 2016 gave Beasley his first taste of sports turf management. Enjoying the work and realising there was much more to greenkeeping than just cutting grass, Beasley took on an apprenticeship that the club subsequently offered him. Beasley completed his studies through Kurri Kurri TAFE in 2019 and from March 2020 has been employed as head greenkeeper with Shape-On-It which contract manages Scone Golf Course.



Beasley enjoys meeting people from Australia and overseas who are also committed to the production of quality turf surfaces and enjoys the multidisciplinary, technical, practical and outdoors nature of the job. Among the highlights to date for Beasley include volunteering at the 2020 SMBC Singapore Open at Sentosa Golf Club and the 2018 Emirates Australian Open at The Lakes Golf Club.

Looking ahead, Beasley hopes to continue in his current role and further develop his management skills in both turf and administration. He is also hoping to complete a Diploma or Bachelor degree. Outside of turf, Beasley is a bagpiper in the Plains Pipes and Drums and Tamworth Highland Society pipe bands.



## CODY TUCKER

### SAGCSA/Royal Adelaide GC

Tucker started his traineeship in sports turf management at Royal Adelaide in January 2016 under course superintendent Nathan Bennett. Demonstrating dedication and application to all tasks assigned to him, Tucker completed all work to a high standard and continually sought new challenges and opportunities to increase his technical competence and leadership skills.

Tucker was involved in the preparation and presentation of Royal Adelaide for the 2017 and 2020 Women's Australian Opens, often taking the lead with smaller crews to ensure the course was presented to the required standard. In addition to this, Tucker also travelled extensively interstate and overseas to work at tournaments, among them back-to-back Open Championships at Carnoustie (2018) and Royal Portrush (2019), as well as the 2018 World Cup of Golf at Metropolitan Golf Club. Furthering his desire to progress his career, at the completion of his traineeship

Tucker secured a position on the crew at Metropolitan under superintendent Dave Mason.



## MATHEW STEPHENS

### STA ACT/Catalina CC

The elder statesman of this year's graduate field, 32-year-old Stephens will notch up 10 years at Catalina CC in 2021. Stephens was first employed at the Bateman's Bay course as a groundsman and after a number of years expressed the desire to undertake his Certificate III, which he started in 2017 through the Canberra Institute of Technology.

A perfectionist by nature, Stephens enjoys the emphasis placed on course and playing surface presentation. For the past five years, Catalina has hosted the Legends Tournament each October, with Stephens relishing the challenge of getting the course in peak condition for this event. The event is an annual highlight and the surfaces that Stephens and the Catalina team present saw it adjudged the National PGA Legends Tournament of the Year two years in a row.

Looking ahead, Stephens is aiming to secure an assistant or superintendent role on a golf course, but as a starting point is looking to learn as much from the nearly 100 years of combined experience between his superintendent Dennis Grounds and assistants to better prepare himself for when that opportunity arises.



## BRADLEY WISH-WILSON

### TSTMA/Barnbougale

Since December 2015, Wish-Wilson has been on the staff at Barnbougale, one of Australia's most recognised golfing establishments. Wish-Wilson joined superintendent Phil Hill's team straight from college, starting his apprenticeship in 2016 which he has completed through TasTAFE. The 23-year-old enjoys the turf industry as it enables him to work outdoors and gain an understanding of what goes into the preparation and management of sports turf, in particular on golf courses.

Wish-Wilson is currently part of the Barnbougale team constructing the new 14-hole short course Bougle Run set to open in December 2020/January 2021. That has given him the valuable opportunity to witness how surfaces are designed and constructed prior to being opened for play and every-day maintenance. Wish-Wilson also rates the

*VGCSA representative Scott Allott is one of two graduate finalists to currently work at Melbourne's Metropolitan Golf Club and will be going up against crewmate and SAGCSA finalist Cody Tucker*



## AWARDS

annual Barnboughle Polo event, where the team prepare the facility's polo field, as another highlight of working there.



### SCOTT ALLOTT

#### VGCSA/Metropolitan GC

Allott is one of two graduate finalists to currently work at Melbourne's Metropolitan Golf Club and will be going up against crewmate and SA finalist Cody Tucker. Growing up in the rural farming community of Foster in South Gippsland, there weren't many full-time job opportunities for Allott after college. However, an apprenticeship was being offered at the local Foster Golf Club which he successfully obtained and as he began to learn more about the industry quickly developed a passion for it.

Undertaking this studies through Melbourne Polytechnic, Allott transferred his apprenticeship across to Metropolitan Golf Club in June 2018. Later that year Allott was part of the team that successfully prepared the Sandbelt course for the 2018 World Cup of Golf. He has also volunteered at other events, including the 2019 Australian Amateur Championship at Woodlands Golf Club. Allott loves the diversity of roles that the greenkeeping profession offers, as well as the many opportunities that can arise to work or volunteer at different tournaments both nationally and internationally.

## STA GRADUATE OF THE YEAR



### LUC HILL

#### STA ACT/Stadium Turf Management

Hill can thank his older brother for convincing him to take on a career in turf management. Working at Moruya Golf Club, his brother gave him an insight into what the job entailed, so when an apprenticeship came up at Catalina CC he eagerly applied. Starting his apprenticeship in 2017, Hill progressed to take on a position with Stadium Turf Management in 2018 and is currently second-in-charge at the Australian National University.

During his career to date, Hill has been a part of two oval constructions – Canberra Stadium and a training field at the Australian Institute of Sport – as well as a nursery green construction at Catalina CC and a number of tournaments. Last summer he also did a full season of cricket wicket preparation and game day set-ups for NRL and rugby union matches.

Hill has aspirations of heading overseas at some stage, either to Europe or America, and work on various sporting facilities to broaden his experiences. Down the track he hopes to one day be a course superintendent or have his own turf company so he can pass on his knowledge of and love for the profession.



### ANDREW HODGSON

#### STA NSW/Green Options

Beginning his apprenticeship in 2016, Hodgson has worked for Green Options for the past four years. He is now a full-time greenkeeper working across several sites on the NSW Central Coast, including Central Coast Stadium and Wyong Rugby League Club. Hodgson attended Ryde College of TAFE.

Turf management is in Hodgson's blood, with his father also being a greenkeeper. Combined with a passion for sports, it was a logical step to progress into a turf management career, one which has led him to preparing surfaces for some of the top sports professionals across multiple codes. Under the belt are three years' worth of A-League and NRL matches, along with many one-off events such as concerts and local sports finals. Being a part of all these events has instilled in Hodgson's mind his ambition to one day work full-time as a part of a stadium crew, whether it be as a groundsman or a manager.



### JACK MCATEER

#### STA QLD/QCA

McAteer is currently employed by the Queensland Cricket Association (QCA) as the curator of Toombul District Cricket Club. McAteer has held that role for the past six months having previously completed his apprenticeship under QCA at Allan Border Field in Brisbane.

McAteer began his apprenticeship at the end of 2016 and undertook his Certificate III in Sports Turf Management with Horticultural Training. He was fortunate enough to have a family friend who had taken over as the manager of Swifts Sports Club in Ipswich and after getting in contact was offered two days' work experience on their bowling greens.



The outdoors and sport have always been a huge part of McAteer's life and as such he knew that greenkeeping was the career for him. A major highlight to date was being part of the Women's Ashes Series as well as the Sheffield Shield final at Allan Border Field.



### JAYDE ROBSON

#### STA VIC/Citywide

Robson could potentially have the edge over her fellow finalists this year on account of the fact that she works alongside last year's STA Sports Turf Graduate of the Year winner Nathan Andrews. Originally from Ballarat, Robson started her apprenticeship in 2016 through the Brotherhood of St Laurence before being offered a full-time position with Citywide upon completion.

Twenty-nine-year-old Robson currently works for Citywide's Melton-based team which oversees the maintenance of 32 sports fields and high profile sites. Robson attended The Gordon TAFE in Geelong and is currently back there studying a Certificate III in Horticulture at night school. She got into the turf industry because she was looking for a change in career and wanted to work outdoors. The variety of work that the turf industry provides and working with people that take pride in their work is the most appealing part of being in the industry. More recently, Robson was nominated for the Women Working in Horticulture Scholarship and was also a finalist in The Gordon Awards for Excellence.



### MATT WOLFE

#### STA WA/City of Albany

Another of this year's finalists to have grown up in the turf industry, Wolfe would tag along with his father from an early age and help him out. Now a groundsman with the City of Albany, Wolfe has embarked on his own career, having started his sports turf management apprenticeship in 2017 and completing his studies through South Metropolitan TAFE.

As well as being able to work outdoors and gaining satisfaction from seeing the finished product, the greatest thing about the industry according to Wolfe is the people. Whether it's at his workplace, TAFE or at industry days, the range of people he gets to meet makes it one of the most enjoyable industries to be a part of.

During his time at the City of Albany, Wolfe has helped prepare Centennial Oval for two WAFL games as well as preparing the pitches and ovals for the Southern Smash cricket competition.

*STA Victoria representative Jayde Robson (right) could have an edge on her fellow finalists given she works alongside 2019 STA Sports Turf Graduate of the Year winner Nathan Andrews*





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*It is the first time in 12 years that the ANTEP will assess new ryegrass varieties on the market*



PHOTOS: AGCSATECH

# ANTEP 5

## gets green light

**A**GCSTech, the technical division of the Australian Sports Turf Managers Association, has recently established a number of valuable ryegrass trials on behalf of the Sports Turf Association of Victoria (STA Victoria) and the Australian Seed Federation (ASF). Both trials have been established at Evergreen Turf's Pakenham farm in southeast Melbourne during autumn and will run concurrently to provide vital information for the wider sports turf industry.

The larger of the two trials comprises the latest round of the Australian National Turfgrass Evaluation Program (ANTEP 5) conducted by the ASF. Over a two-year period this trial will assess a number of ryegrass varieties, both in a permanent stand and oversown into an existing couchgrass surface. The STA Victoria trial will focus on the transitioning of ryegrasses out of a couchgrass surface.

*AGCSATech senior agronomist  
Bruce Macphee outlines some  
important new ryegrass trials being  
undertaken by the Australian Seed  
Federation and STA Victoria.*



**Australian Seed Federation**  
SOWING SEEDS

**AGCSATech**  
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Ryegrass is commonly used on first grade council ovals and elite sports surfaces, where it is either established as a permanent surface or oversown into an existing warm-season grass

sward to provide an adequate surface with growth and recovery potential during the winter sports season.

The transition period at the end of the winter sports season and preparing the various sporting surfaces for summer competition, is often the most difficult period for a turf manager, with a quick turnaround (often a matter of days) between the end of winter sport and start of summer sport.

Pressure placed on sports turf surfaces through increased participation and usage often leads to the percentage of warm-season turf coverage being compromised, particularly in high wear areas. Couchgrass does not compete favourably when oversown with other grasses and any areas with thin or reduced couchgrass coverage toward the end of summer can result in an unstable bare area developing in spring when ryegrass is removed or allowed to transition out.





There are various schools of thought as to the best method to remove ryegrass – the rapid removal with selective herbicide, often leaving a stark contrast between bare areas and sections with acceptable couchgrass coverage, versus the slow gradual transition to couchgrass coverage where the ryegrass is stressed out of the surface.

This can lead to slower recovery of warm-season grasses and a patchy appearance throughout the summer season, whereas the rapid removal of ryegrass can leave an unacceptable surface with poor turf density, often not fully recovering until mid to late summer and in some cases not at all.

## STA VICTORIA TRANSITIONAL RYEGRASS TRIAL

The STA Victoria transitional trial will focus on the efficacy of various selective herbicides available for removal of ryegrass from a couchgrass surface. The trial area consists of a Santa Ana couchgrass base which has been oversown with a blend of perennial ryegrasses, using industry-standard equipment at a rate of 400 kilograms per hectare. There will be eight treatments including control plots which have not been oversown.

Half of each plot has received wear with AGCSATech's wear machine in the lead-up to oversowing and given a three week break to allow the seed to establish. Wear will continue to be applied to both trial areas throughout the duration of the trial to assess the effect wear has on overall establishment and recovery of various treatments. Each treatment will be assessed for;

- Overall turf quality;
- Efficacy of herbicide treatment;
- Percentage of couchgrass recovery; and
- The impact wear has on the persistence and recovery of couchgrass.

*The ryegrass trial plots will also be assessed using AGCSATech's latest technology, with both hand-held and drone-equipped NDVI providing an additional layer of assessment*

## ANTEP 5

The Australian National Turfgrass Evaluation Program (ANTEP) has been developed over the past 30 years by members of the ASF. The aim is to provide Australian turf managers with local independent varietal testing results to evaluate the various seeded turf varieties grown under Australian conditions. Previously, Australian turf managers have had to evaluate selections and make decisions based on data provided from the USA.

It has been about eight years since the last ANTEP trial was conducted and 12 years since perennial ryegrasses were assessed. With many advancements and new varieties now available, the ASF felt it was time to undertake ANTEP 5 which will look at a wide range of perennial and transitional ryegrasses. The trial will run for a period of two years and consists of two sections;

- A permanent stand of 34 perennial ryegrass varieties, with three replicates, sown on bare soil; and

*Both ANTEP and STA Victoria trials have been established at Evergreen Turf's Pakenham farm in southeast Melbourne. The two ANTEP trial sites are pictured bottom, with the STA Victoria transitional trial the long narrow strip at the very top*

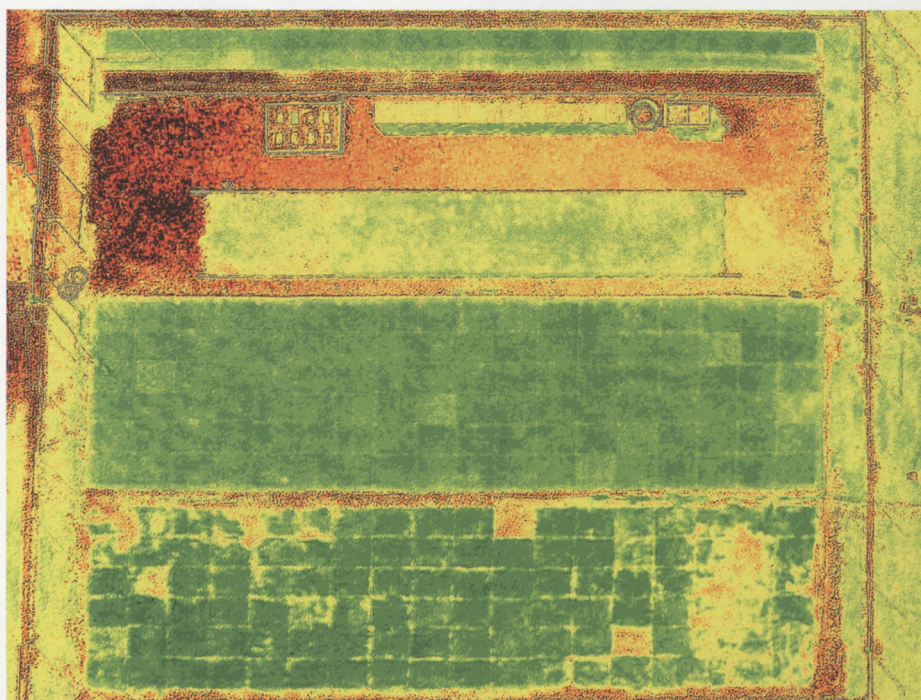
- A transitional trial where 33 ryegrass varieties, with three replicates, oversown into an existing Santa Ana couchgrass surface.

The plots will receive wear with AGCSATech's wear machine throughout the trial, along with half of each plot in the oversown trial being sprayed out with selective herbicide in spring and the other half allowed to transition naturally. Assessments for the trial will include;

- Rate of establishment;
- Seedling vigour;
- Turf colour;
- Quality;
- Density;
- Incidence of disease;
- Seasonal growth
- Wear tolerance;
- Recovery; and
- Spring transition.

In addition to the above, the trial plots will also be assessed using AGCSATech's latest technology with both hand-held and drone-equipped NDVI to provide another layer of assessment. Together, this trial will provide detailed, up-to-date information on the latest varieties available to the Australian market, with field days to be held in the future where turf managers will be able to view both trials.

For more information regarding both the ANTEP and STA Victoria trials, contact AGCSATech senior agronomist Bruce Macphee on (03) 9548 8600 or email [bruce@agcsa.com.au](mailto:bruce@agcsa.com.au).







JOHN NEYLAN



*The use of pre-emergent herbicides provides an alternative control for herbicide-resistant weeds, improves early control of weeds, extends weed control and potentially requires fewer herbicide applications*



# Pre-emergents 101

*With cool and wet conditions prevailing so far in 2020 and with it the early and prolonged emergence of *Poa annua*, some turf managers have noticed a lack of efficacy with their pre-emergent herbicide applications. John Neylan takes a closer look at how these chemicals work and some of the factors that can impact their success.*

Once the COVID-19 lockdown came into being, I found that I had some extra time on my hands to contemplate all things turf. It provided the perfect opportunity to take the time to catch up on some long overdue education and reading. It was also a good time to think through some of the more perplexing questions as to why certain turf management strategies do or don't work. One

that I have spent a lot of time working on has been weed control which continues to throw up numerous anomalies around the reasons why a herbicide strategy may or may not have worked.

During the enforced break I took the opportunity to work through a seminar series developed by WeedSmart ([weedsmart.org.au/](http://weedsmart.org.au/)) which is an industry-led initiative to promote best practice as it relates to herbicide

resistance management. While WeedSmart has been developed for Australian cropping systems, the basics around herbicide resistance, how resistance develops and how herbicides work are all relevant topics to turf management.

The two courses that I have found most useful are 'Herbicide Resistance 101' and 'Pre-emergent Herbicides 101'. Having previously undertaken the former, I was particularly interested in the topic of pre-emergent herbicides as I have recently seen what appear to be 'failures'.

Pre-emergent herbicides have become the most important element in an effective weed control programme. If the weed can be controlled before it becomes established, the problem can be largely avoided. With the developing resistance to a wide range of post-emergent herbicides, a preventative strategy makes sense. However, we do see examples of where a pre-emergent herbicide may have failed in preventing a weed from developing. Is it due to herbicide resistance, leaching, breakdown, attachment to organic matter or other unknown factors?

Turf presents a unique set of circumstances compared to agriculture in that it provides a permanent vegetation cover, there is thatch to deal with and turf is irrigated regularly, to name but a few differences. However, while there are differences, I was hopeful that by having a better understanding of how pre-emergent herbicides work, it may cast a light on my lack of knowledge.

The 'Pre-emergent Herbicides 101' course is presented by weed scientist Dr Chris Preston (University of Adelaide) and there were several key concepts that I noted and have tried to relate to the turf situation for the purposes of this article.

## WHY USE PRE-EMERGENTS?

In Australian agriculture, herbicide resistance has become a major problem with resistance to 12 modes of action across 17 weed species. According to [weedsience.org](http://weedsience.org), in turf worldwide herbicide resistance has been identified in *Poa annua*, *Digitaria sanguinalis* and *Eleusine indica*.



*The effect of pre-emergent herbicide applications on the root system of a *Poa annua* plant. Compare this to the root system of a healthy *Poa annua* plant on the opposite page*



In 2017, 31 populations of *Poa annua* suspected to be resistant to herbicides commonly used to control this weed in turf were collected from golf courses across south-eastern Australia, with all populations being found to be resistant to multiple turf herbicides including groups B, C, D and glyphosate (Barua, et. al. 2020). (See page 44 for more on this research - Ed)

The use of pre-emergent herbicides provides an alternative control for herbicide-resistant weeds, improves early control of weeds, extends weed control and potentially requires fewer herbicide applications. In agriculture it is harder to get the pre-emergent herbicide programme right due to the need to predict the weeds that are likely to be present. In turf, the weed species that will be present is generally well understood, though we need to better understand the size of the seed bank and the conditions that stimulate germination.

**TAKE HOME MESSAGE #1:** With the increasing incidence of herbicide resistance among the post-emergent herbicides, the use of pre-emergent herbicides is a key to effective weed control.

## WHERE DO THE SEEDS END UP?

The germination zone of target weeds is important to understand. With most turfgrass weeds we can assume that they are deposited on or near the turf surface, with seed burial being largely irrelevant. This is then the target zone for our pre-emergent herbicides.

In trials undertaken over the past four years, it has been demonstrated that with one of our major weed species (*Poa annua*), the majority of the seeds are in the thatch layer (see Figure 1 below and photo opposite) and in very high numbers. It would be expected that the seeds of *Digitaria sp.* and *Eleusine sp.* will also be predominantly in the thatch layer. The example in Figure 1 demonstrates that there is over 90 per cent of the seedbank in the thatch layer and this is where the pre-emergent herbicide needs to be if it is to be effective.

Having an understanding of the seedbank will also provide an insight as to how rigorous and persistent the pre-emergent programme needs to be. For example, *Eleusine indica*

are dependent on the size and depth of the seedbank. This has implications for what herbicide is used, how much irrigation/rainfall is applied post-herbicide application and the interaction with the organic matter in the thatch layer. The use of pre-emergent herbicides provides the best opportunity to reduce the seedbank.

## BEHAVIOUR OF PRE-EMERGENTS

How pre-emergent herbicides work is a science in itself, however, it is important that we have a basic understanding of how they prevent weed establishment. Hopefully this also provides an insight into why a pre-emergent herbicide may or may not be effective.

Pre-emergent herbicides are very different to post-emergent herbicides, with the vast majority of the pre-emergent herbicides being root uptake or acting in the zone of growth around the seed called the mesocotyl. The pre-emergent herbicides don't prevent germination but prevent seedling development and emergence. The most important aspect of residual herbicides is that they move into the plant roots with water and therefore having adequate soil water is critical in their efficacy. In reviewing the mode of action of several of the pre-emergent herbicides in turf, they can be characterised as follows;

**Microtubule inhibitors:** A large group of the pre-emergent herbicides are microtubule inhibitors including propyzamide, pendimethalin, oryzalin, prodiamine and dithiopyr. This group of herbicides are absorbed by both roots and shoots of emerging seedlings but are not readily

TABLE 1: SEEDLING NUMBERS/m<sup>2</sup>

Depth	Heavy soil	Sandy soil
Thatch	8755 <sup>a</sup>	6055 <sup>a</sup>
0 - 1cm	949 <sup>b</sup>	2785 <sup>ab</sup>
1 - 2cm	527 <sup>b</sup>	1624 <sup>ab</sup>
2 - 4cm	443 <sup>b</sup>	549 <sup>bc</sup>
LSD (P<0.05)	3038	5316
Pre-em v Control		
Pre-emergent	2316	1646
Control	3038	3797
LSD (P<0.05)	NS	SIG
Interaction	NS	NS

can produce 135,000 seeds/plant, *Digitaria sanguinalis* can produce 150,000 seeds/plant and *Poa annua* can produce 36,000 seeds/plant. While there is little data on the longevity of weed seeds in turf, anecdotally it could be 3+ years given the presence of viable seeds in turf plugs at a depth of 2-4cm.

In the research by Neylan and Nickson (2016), it was demonstrated that there can be a significant reduction in the seedbank of *Poa annua* with the use of pre-emergent herbicides (Table 1). This same work demonstrated that the soil type and moisture conditions can potentially affect how quickly the seedbank can be reduced.

Knowing where the weed seeds end up is important in terms of pre-emergent herbicide placement but also indicates where we should concentrate other non-herbicide management techniques, such as fraise mowing and topmaking, as a means of reducing the seedbank.

**TAKE-HOME MESSAGE #2:** The pre-emergent herbicide programme and its effectiveness

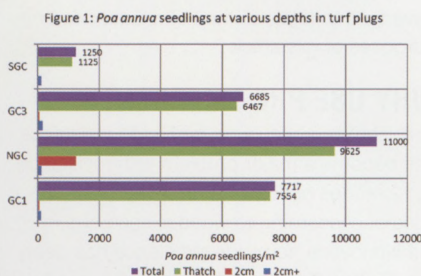
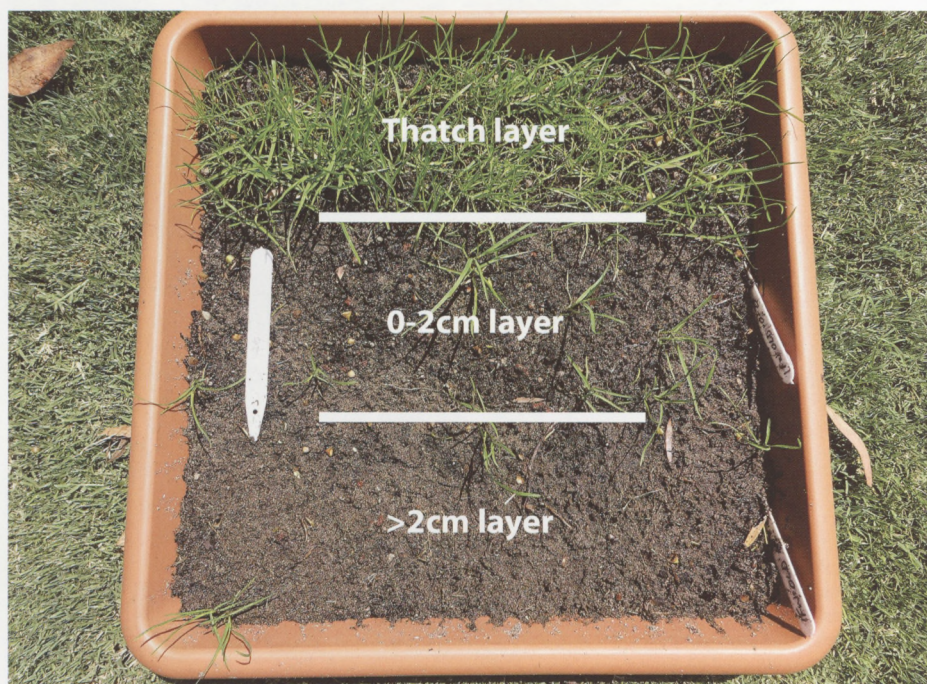


Figure 1. *Poa annua* seedling emergence from different depths of profile core



In trials undertaken over the past four years, it has been demonstrated that with one of the major weed species (*Poa annua*), the majority of seeds are contained in the thatch layer



translocated. The emerging shoot is the primary absorption and action site in grass species. These herbicides are mitotic poisons that inhibit cell division with the growing points of stems and roots being most affected. Herbicide-induced damage may cause the observed swelling of root tips as cells in this region neither divide nor elongate. This is commonly observed on *Poa annua* plants affected by a pre-emergent herbicide.

#### Cellulose inhibitors (cell wall synthesis):

Herbicides in this group (indaziflam is the notable representative in turf) prevent cell division primarily in developing root tips by disrupting cell wall biosynthesis (cellulose) in susceptible plants.

**Long chain fatty acid inhibitors:** The primary site of absorption and action of these herbicides on grass species is the emerging shoot (metolachlor being a turf-registered example in this group). These compounds typically affect susceptible weeds before emergence but do not inhibit seed germination, resulting in the failure of the shoot to emerge from the coleoptile. Susceptible grass seedlings often fail to emerge from the soil.

As we can see, most of the pre-emergent herbicides are active in and around the very early stages of seed germination and inhibit the development of the roots and shoots. It is not uncommon to find *Poa annua* plants sitting just in the thatch layer with few or no roots as the growing root hits the herbicide layer. There is often a lack of roots (see photo on page 39) or they can be 'clubby' and seen growing laterally.

There are several factors affecting herbicide absorption from soil including;

**Water solubility of the herbicide:** The more water soluble the herbicide the greater

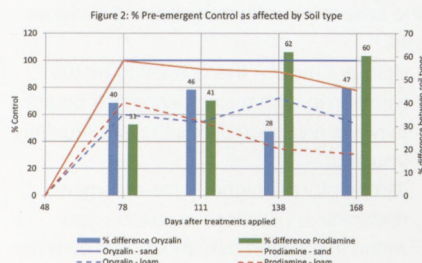


Figure 2. The effects on the control of *Poa annua* with oryzalin and prodiamine between two different soil types (sand and loam)

the opportunity for the herbicide to move past where the weed seeds occur. The pre-emergent herbicides used in turf are usually of low solubility with the exception of metolachlor (see Table 2, page 42).

**Soil moisture and rainfall:** As a general premise, when soils are dry and a pre-emergent is applied and then irrigated (or rainfall), there is likely to be greater movement of the herbicide. A moist soil tends to be preferred to minimise any excess herbicide movement.

Because many turf areas are regularly irrigated after the application of pre-emergent herbicides, the question is whether it is possible that the herbicide could move past the seedbank. Obviously after high rainfall events this is most likely to occur. With the recent high rainfall along the east coast of Australia, it could in part explain why the pre-emergent herbicides are not as effective as would be expected.

**Soil type and pH:** On sandy soils that have larger pore spaces, there is greater opportunity for herbicide movement compared to high clay content soils where there is greater herbicide binding to the soil particles. Again, given the high rainfall on the east coast of Australia there

may have been greater herbicide movement beyond the main seedbank on sandy sites. Because most turf weed seeds will be close to the surface, the pre-emergent herbicide will ideally bind and stay relatively close to the surface in the zone where the weed seeds are germinating. Soil pH also affects the solubility of some herbicides and if the pH is very acid or alkaline this may be affecting the efficacy of the herbicide.

In research undertaken by Neylan and Nickson (2015), it was demonstrated that the longevity of the pre-emergent herbicide was less on a wet, high clay content soil compared to a sandy soil. Figure 2 (above) shows the effects on the control of *Poa annua* with oryzalin and prodiamine between the two soil types. The heavier textured soil had up to 60 per cent less control compared to the sandy soil.

**Non-wetting soils:** Soils that have localised dry spot or areas that are hydrophobic make it difficult to get the herbicide in the correct position in the turf/soil system. After a long dry summer on sandy soils, the pre-emergent herbicide may provide an inconsistent result for this reason. Use of wetting agents and irrigation prior to application could be a consideration.

**Soil organic matter:** Herbicides bind to soil organic matter which slows the movement through the turf/soil profile. Depending on the conditions, the herbicide can go through phases of binding and unbinding from the organic matter which affects its downward movement.

Heavier soils and those soils with higher amounts of organic matter (higher CEC soils) have more binding sites and will adsorb more herbicide (GRDC, grdc.com.au). Increased binding is likely to result in higher application

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rates being required to achieve a given level of weed control. This is because more herbicide is bound to soil and organic matter and therefore less is available in the soil water for uptake by germinating weeds.

The strength of binding is measured by the Soil Organic Carbon-Water Absorption Coefficient ( $K_{oc}$ ) value (Table 2). Most of the turf herbicides are categorised as slightly mobile to non-mobile and are likely to have a 'strong' affinity for organic matter. Given that most turf systems have a thatch layer, it may assist in keeping the herbicide in the upper section of the turf system and not moving beyond the seedbank. However, there is also the possibility that the availability is reduced.

**Temperature:** The effects of temperature are less of an issue. Temperature may have an effect on accelerating microbial breakdown and increasing herbicide uptake during hot weather (increases water movement through the plant).

**TAKE HOME MESSAGE #3:** *There are several important considerations when evaluating the effectiveness of a pre-emergent herbicide programme in a turf system;*

- The characteristics of the herbicide;
- Soil conditions, in terms of soil type, pH, organic matter/thatch and soil moisture; and
- Possible impact of regular irrigation and rainfall events on the herbicide.

## HERBICIDE DEGRADATION IN SOIL

As noted above, the availability of a pre-emergent herbicide is an interaction between several chemical, soil and environmental factors. Once the herbicide reaches the turf/soil system it can degrade or breakdown through several mechanisms such as:

**Photodegradation:** This is when a herbicide undergoes a chemical reaction in the presence of sunlight and breaks down into ineffective compounds. This is generally considered to be of minor importance where herbicides are irrigated in soon after application.

**Hydrolysis:** This is when a herbicide breaks down due to a chemical reaction involving water that breaks down chemical bonds. As a consequence the individual components may not be active or herbicidal. This is relatively minor except under certain soil pH conditions.

**Microbial degradation:** This is the main factor in the breakdown of herbicides and is higher when;

- Soils are moist – this is likely to be the situation in high maintenance golf course fairways and sportsfields that are regularly irrigated.
- Temperature is higher – pre-emergent herbicide applications can occur year round in an effort to combat both summer and winter weeds. There is also the trend to apply pre-emergent herbicides in the late summer to make sure there is adequate herbicide in the soil come the 'autumn break'. It could be argued that a portion of the herbicide may be degraded and lost before peak germination occurs.
- Soils are high in organic matter – because turf systems are an intensive form of horticulture and consequently produce a lot of thatch and organic matter. Organic matter is the main food source of soil microbes, however, they will use herbicides as a food source and break them down into inactive components. With repeated use of the same herbicide, the microbial population will change to favour those microbes that utilise the herbicide as a food source. Again, it is possible that in turf situations that the moist and potentially warm soils high in organic matter as well as good nutrition and soil aeration are stimulating microbial degradation.

If microbial degradation is too rapid, herbicide persistence will be low. In agriculture, where propyzamide was used twice in the same winter growing season, the second application was roughly half as effective as the first (Hole and Powles, 1997). Professor Powles also visited a golf course in Victoria where propyzamide had failed and he managed to show that there was enhanced biodegradation of propyzamide which was responsible for the herbicide failure.

In research by Young et.al. (2014), they demonstrated microbial degradation of S-metolachlor where the amount of herbicide in the soil was only 58 per cent of the applied in the unsterilised soil compared to 91 per cent in the sterilised soil. At 60 days after application there was 20 per cent and 65 per cent of the herbicide applied in the unsterilised and sterilised soil respectively.

The rapid degradation of herbicide is also demonstrated in research by Joy et. al. (2012) where it was demonstrated that simazine was rapidly depleted in soils representing regular use compared to sites with no recent use. In the worst sites the percentage of simazine applied was down to 10 per cent within 10 days of application. This further demonstrates the importance of herbicide rotation.

**TAKE HOME MESSAGE #4:** *There are so many factors that can have an effect on efficacy and longevity of a pre-emergent herbicide. We can learn a lot from 'apparent failures' and the message is that if you don't get the expected result you need to undertake a detailed assessment of the many factors that affect herbicide efficacy. The questions to ask are:*

- How was the herbicide applied?
- What was the application rate?
- When was the herbicide watered in and how much water was applied?
- What are the thatch/organic matter conditions?
- What is the soil type?
- What were the weather conditions post-application? Was there post-application rainfall?
- Was there a follow up application?

## CONCLUSION

From my experience, this year the cool and wet conditions have favoured the early and prolonged emergence of *Poa annua* and anecdotally the pre-emergent herbicides don't appear to have been effective as in previous years. As can be seen above, there are many factors that impact on the effectiveness and longevity of pre-emergent herbicides.

With the use of pre-emergent herbicides there has been a tendency to look for the maximum residual control. As can be seen, the site-specific nature of different sites is likely to have a substantial effect on the 'life' of the herbicide before another application is made. It is when there are these small windows in the programme, where there are sub-lethal doses of herbicide in the soil, that new germinations can occur. As a consequence more split applications are made at more regular intervals so there is always an effective concentration of herbicide in the profile.

The final take home message is that for the effective use of pre-emergent herbicides it is important to understand all of the interacting elements for your site and to develop a programme accordingly.

**TAKE HOME MESSAGE #5:** *Every site is different!*

## ACKNOWLEDGEMENTS

John Neylan is a turfgrass agronomist with Melbourne-based Sporteng. 🌱

TABLE 2: PRE-EMERGENT HERBICIDE PROPERTIES

Herbicide	Solubility <sup>1</sup>		Binding strength <sup>2</sup>	
Prodiamine	0.013	Low	12710	Non-mobile
Oxadiazon	0.57	Low	3200	Slightly mobile
Pendimethalin	0.33	Low	17491	Non-mobile
Indaziflam	2.8	Low	1000	Slightly mobile
Oryzalin	1.13	Low	949	Slightly mobile
Metolachlor	530	High	120	Moderately mobile
Propyzamide	9	Low	840	Slightly mobile

Key: <sup>1</sup> Measured in water at 20°C (mg/L); <sup>2</sup> Soil organic carbon-water absorption coefficient ( $K_{oc}$ ) measured in mL/g;  
Source: PPDB (Pesticide Properties DataBase)





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# Multiple resistance in *Poa*

University of Adelaide researchers Rajesh Barua, Peter Boutsalis and Christopher Preston present the findings of their research investigating multiple resistance to herbicide in *Poa annua* across southeastern Australia.

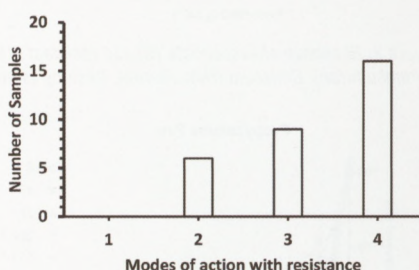
One of the greatest challenges for the turf industry and golf course operators in weed control is wintergrass (*Poa annua*). Controlling wintergrass with herbicides has become increasingly difficult as herbicide resistance occurs. Internationally, resistance to nine mode of action herbicides has been confirmed in wintergrass, but little is known about resistance in Australia.

In November 2016, a group of golf course superintendents from across Australia, along with other industry experts in the field of herbicide resistance, met at Huntingdale Golf Club in Melbourne to discuss various methods of controlling wintergrass in warm-season grasses and the successes and failures they had experienced. From this, and with the support of the Australian Golf Course Superintendents Association (now Australian Sports Turf Managers Association) and the Victorian Golf Course Superintendents Association, Adelaide-based Plant Science Consulting was contracted to investigate herbicide resistance in wintergrass in 2017.

Collections were made by turf managers as soil plugs comprising 31 samples – 18 from Victoria, six from NSW and seven from SA. The samples were collected from greens and fairways where control of wintergrass with herbicides was poor. The turf managers indicated that most of the sites had received multiple applications of different herbicides each year for at least the past 10 years. A sample collected from a site with no prior exposure to herbicides was used as the susceptible control.

The testing involved transplanting wintergrass seedlings from soil cores into pots and then treating with herbicides in a spray cabinet two weeks after transplanting. Herbicides from different modes of

**All 31 samples of wintergrass from golf courses in NSW, Victoria and SA exhibited resistance to several mode of action herbicides. This photo shows *Poa* that has recovered from a soil plug that had been subjected to herbicide treatment**



**Figure 1. Extent of multiple resistant status of wintergrass samples from golf courses**

action (MOA) were tested (Table 1). For a classification of herbicide MOA visit <https://www.croplife.org.au/resources/programs/resistance-management/herbicide-moa-table-4/herbicide-moa-table-4-draft-2/>. The response of plants treated with the label rate and three times the label rate was compared to untreated plants in control pots (Table 2).

Post-emergence treatments were made with various Group B herbicides (rimsulfuron, iodosulfuron, bispyribac and foramsulfuron),

the Group C herbicide simazine, the Group D herbicide propyzamide and the Group Z herbicide endothal. The results suggested extensive resistance to several herbicides from multiple modes of action in all 31 wintergrass samples from golf courses (Table 2).

Seed was collected from each sample and further herbicide dose-response studies conducted by University of Adelaide PhD student Rajesh Barua. The dose response studies involved testing the samples with several rates of turf-selective herbicides including an additional testing with propyzamide applied pre-emergent.

The initial testing identified that all 31 samples from golf courses were resistant to two or more herbicides, with half being resistant to herbicides from four modes of action (Figure 1). Resistance to multiple modes of action greatly limits the future choice of effective herbicides. The findings showed;

- All of the samples were resistant to endothal;

**TABLE 1: HERBICIDES USED**

Chemical name	MOA	Trade name	Label rate (g ai/ha)
Rimsulfuron	B	Coliseum	25
Foramsulfuron	B	Tribute	33.8
Iodosulfuron-methyl-Na	B	Destiny	15
Bispyribac-Na	B	Nominee	50
Simazine	C	Gesatop	840
Endothal	Z	Poachek	262.5
Propyzamide	D	Kerb	500

**TABLE 2: SCREENING RESULTS<sup>1</sup>**

MOA group	Chemical name	Application timing	Samples surviving the 1X rate (%)	Samples surviving the 3X rate(%)
B	Rimsulfuron	POST	97	84
	Iodosulfuron		90	71
	Bispyribac		97	87
	Foramsulfuron		52	38
C	Simazine	POST	94	68
Z	Endothal	POST	100	90
D	Propyzamide	POST	81	71
	Propyzamide	PRE	23	13

<sup>1</sup> Summary of screening result of 31 samples collected from golf courses with different mode of action herbicides at the recommended field rate and three times that rate. Recommended field rates listed in Table 1.



- 97 per cent were resistant to the Group B herbicides;
- 94 per cent were resistant to simazine;
- 81 per cent were resistant to post-emergent propyzamide with only 23 per cent resistant to pre-emergence applied propyzamide (Table 2).

The finding that greater activity with propyzamide was obtained with pre-emergent applications can be attributed to its mode of action during cell division. The herbicide is more effective if taken up during seed germination than after germination and plant establishment. **(Read John Neylan's preceding column, page 36, for more on the various pre-emergent modes of action - Ed).**

Dose-response experiments confirmed resistance to propyzamide, simazine, rimsulfuron, foramsulfuron and endothal (Figures 2 and 3; Sample S originated from a lawn with no prior herbicide use and was used as the susceptible control. The resistant samples originated from golf courses. Samples 262-16 and #27 from Sydney, 413-17 from Melbourne and #18 from southern Victoria all exhibited multiple resistance).

From the dose-response curves, an LD50 ratio was calculated. This is a measure of the dose required to kill 50 per cent of the individuals in a resistant sample divided by the dose required to kill 50 per cent of the individuals in a susceptible sample. The LD50 value is an internationally used measure of herbicide resistance.

Levels of resistance measured as LD50 ratios to rimsulfuron were >56-fold, foramsulfuron >19-fold and endothal >7-fold. Variation in resistance between herbicides with the same mode of action as identified between the Group B herbicides rimsulfuron and foramsulfuron, indicates that difference in efficacy between herbicides within modes of action occurs (Figure 2). In some cases, however, switching to a different Group B herbicide that has not been used previously in a golf course does not necessarily mean it will be effective. Herbicide resistance testing, particularly for Group B resistance, is strongly recommended.

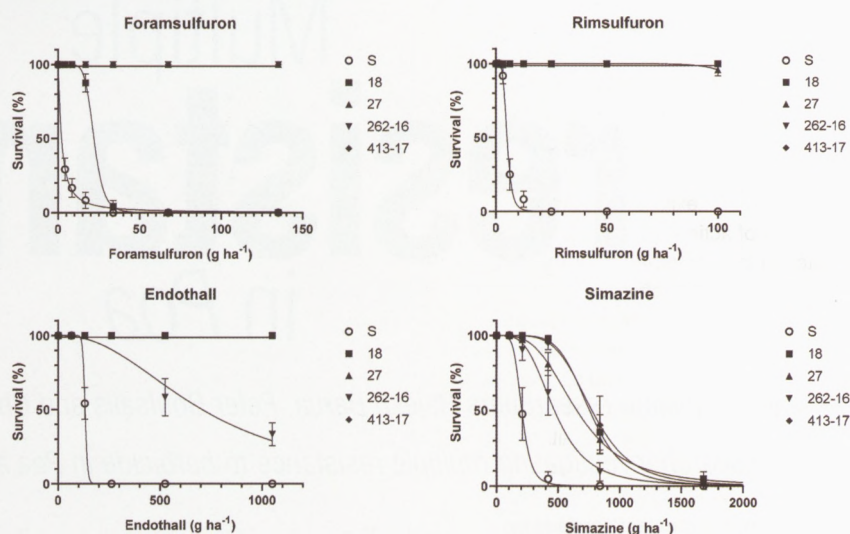


Figure 2. Response of susceptible (S) and resistant (18, 27, 262-16 and 413-17) samples of wintergrass to Tribute (foramsulfuron), Coliseum (rimsulfuron), Gesatop (simazine) and Poachek (endothal) applied post-emergent

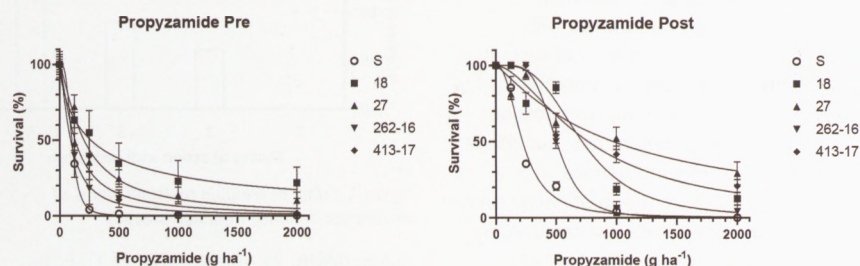


Figure 3. Response of susceptible (S) and resistant (18, 27, 262-16 and 413-17) samples of wintergrass to Kerb (propyzamide) applied pre-emergent and post-emergent

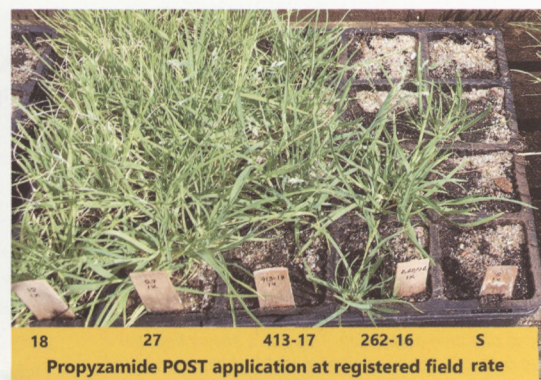
Considerable variation in resistance to endothal and simazine was also observed among the wintergrass samples (Figure 2). The levels of resistance detected to simazine were only 2-fold greater than the susceptible sample (LD50 >2-fold) highlighting differences in resistance between herbicide mode of action groups.

Propyzamide resistance was obvious when used post-emergent (Figure 3), however, much less so when used pre-emergent. When used post-emergent, it required 1000g/ha of propyzamide to control the susceptible sample and resistant samples were 2- to 5-fold resistant. When used pre-emergent, the susceptible sample was controlled with 500g/ha and the resistance was lower. Using

propyzamide before the wintergrass has germinated should give better control.

Multiple resistance in wintergrass has been confirmed in 31 samples. Understanding how it has developed is imperative to prevent further increases in resistance. Laboratory studies involving biochemistry and molecular biology are now underway by Rajesh to investigate the mechanisms of resistance.

To date, he has confirmed that target site resistance is responsible for conferring resistance to the Group B herbicides. He also investigated target site resistance to simazine and propyzamide and identified this was not conferring resistance, suggesting the presence of other mechanisms of resistance which he is currently investigating.



Trials found that the Group D herbicide propyzamide applied as a pre-emergent (left) was far more effective than when applied as a post-emergent (right)



Knowledge of non-target site resistance mechanisms has practical significance. In other species, such as annual ryegrass, some non-target site resistance mechanisms have been shown to confer multiple resistance, that is plants with a single non-target site resistant mechanism exhibiting resistance to different mode of action herbicides. In such cases, rotating to an alternative mode of action herbicide may not be an effective strategy.

Understanding how resistance spreads can help minimise contamination. Wintergrass is predominately a self-pollinated species, although up to 15 per cent outcrossing has been detected. This indicates that although multiple resistance in wintergrass has most likely arisen from sequential selection with multiple herbicides over time, there is also the possibility of accumulation of herbicide resistance traits through cross pollination.

Rajesh is conducting genetic trials crossing resistant with susceptible plants to identify the incidence of cross pollination and understand the genetics of herbicide resistance in the Australian resistant samples.

This article may spur many questions regarding the different subjects covered without bibliography and graphs. The full paper of this research has been published in the Weed Science Journal and is available



online at <https://doi.org/10.1017/wsc.2020.35>. These will be appropriate reading for anyone interested in delving deeper into some of the topics presented on here (see <http://www.weedscience.com/Pages/Species.aspx>).

## ACKNOWLEDGEMENTS

Rajesh Barua, Peter Boutsalis and Christopher Preston are from The University of Adelaide. Dr Boutsalis is also the founder of Plant Science Consulting. 🌱

*Most resistance was detected to Group B herbicides with variation observed between Group B herbicides. Foramsulfuron was the most effective*

## KEY POINTS

- 31 samples of wintergrass (*Poa annua*) from golf courses in NSW, Victoria and SA tested for herbicide resistance;
- All wintergrass samples exhibited resistance to several mode of action herbicides (multiple resistance).
- Most resistance detected to Group B herbicides with variation observed between Group B herbicides, with foramsulfuron most effective.
- Propyzamide and simazine were the most effective herbicides tested.
- Pre-emergence applied propyzamide was more effective than post-emergent.
- Target-site resistance was confirmed to Group B herbicides but not to the other mode of action herbicides tested.
- Using mixtures of different mode of action is the best strategy to maximise weed control.
- Conducting herbicide resistance testing can help turf managers select effective herbicides.



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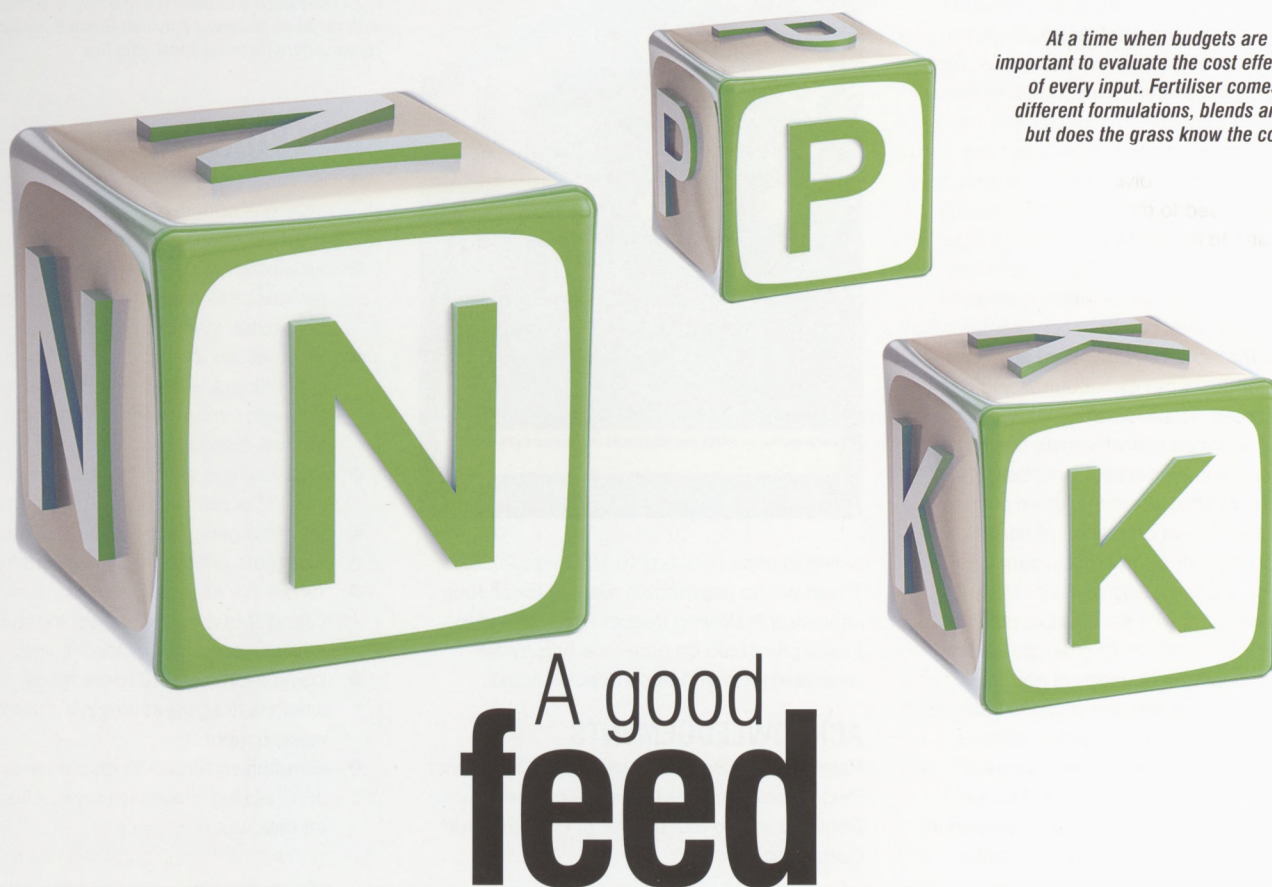


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## A good feed

*In the second instalment of looking at the basics of fertilising turf surfaces, AGCSATech agronomist Steve Tuckett looks at the different types of fertilisers available on the market.*

In the last edition of Australian Turfgrass Management Journal, the article 'A good feed' (ATM Volume 22.2, pages 56-61) looked at the fundamentals for developing a successful fertiliser programme. In this follow-up article we will examine the different types of fertilisers available to the sports turf manager, how they work and where they fit into a programme. We will also look at the calculations required for cost comparisons which is important to know for budgeting purposes when developing such programmes.

### SIMPLE, SOLUBLE FERTILISERS

These are chemical fertilisers, produced by industrial processes, which contain the major nutrients that are readily available to the plant. The turf manager can apply them as they are or make their own blends, or buy commercial NPK blends which are more convenient.

These products are all basically salts, defined as a solid compound that will dissolve in water into its two constituent charged components – the positive ion (cation) and the negative ion (anion). Sulphate of ammonia has a nitrogen (N) percentage of 21 per cent and

the other 79 per cent is made up of crystals of  $(\text{NH}_4)_2\text{SO}_4$ .

Table 1 lists common N carriers, along with their molecular formula and percentage. Some of them also contain phosphorous and secondary nutrients including sulphur. The rate column shows how much of each fertiliser is required to deliver a standard application rate of  $0.2\text{kg}/100\text{m}^2$  (the calculation is  $0.2\text{kg}/100\text{m}^2 \times 100$ , divided by the N%). All of these fertilisers will produce a response in terms of green-up and growth. However, there are important differences between these

TABLE 1. NITROGEN CARRIERS

Fertiliser	Analysis	Solubility g/L	Salinity index	pH effect	Fert Rate $\text{kg}/100\text{m}^2$	Cost c/kg	Unit Cost c/ $100\text{m}^2$
Urea	46% N	1,000	75	0.75	0.43 kg	85	36
Sulphate of Ammonia	21% N, 24% S	706	69	1.1	0.95 kg	70	62
Potassium nitrate	13% N, 38% K	133	74	-0.13	1.54 kg	\$1.60	\$2.46
Di-ammonium phosphate (DAP)	18%N, 20%P	575	34	0.5	0.95 kg	90	85
Mono ammonium phosphate (MAP)	10%N, 22%P	227	30	0.5	1.67 kg	90	\$1.50

<sup>1</sup> Adapted from Ford 2018 common nitrogen carriers



products including cost, effect on soil pH, the ammonium and nitrate content and solubility.

Some points about the information presented in Table 1;

- The solubility figure is the grams of fertiliser that could be dissolved in one litre of water. You may need to dissolve the fertiliser in hot water to achieve the solubility indicated by the figures.
- The pH effect indicates the amount of lime ( $\text{CaCO}_3$ ) in kilograms required to counteract a kilogram of each product and maintain the same pH. In some cases the pH figure is negative, which indicates the product is alkaline and moves pH in the same direction as lime. Note that sulphate of ammonia is the most acidifying and requires 1.1kg of lime to counteract 1kg of fertiliser. Note also that any product containing ammonium is acidifying. Sulphate of ammonia is the fertiliser used in the 'acid theory' management of bent greens, especially browntop bent where very low N rates are used.
- The salt index figure is a rating system used to indicate the potential salinity damage from fertilisers. The index is related to the product solubility and the ions that make up the product. Sodium nitrate is set at 100. Figures above 90 indicate high salinity potential, while figures below 20 indicate low salinity potential. In general, the most soluble fertilisers, or those containing sodium and chlorine, have the highest salt index figures.

- The salt index relates only to soil-applied fertiliser, not foliar applied products, and research has been done to assess the particular burn potential from liquid fertiliser applied directly to foliage, which is common in turf. Be aware that urea and sulphate of ammonia can burn the turf, so low rates are required if applying as a foliar.
- The cost of the fertiliser is based on the Incitec/Pivot price list. The prices included just give an indication of the relative cost of each product in cents per kilogram.
- Multiplying the fertiliser rate ( $\text{kg}/100\text{m}^2$ ) by the fertiliser cost (c/kg) gives the unit cost ( $\text{c}/100\text{m}^2$ ). It allows you to compare apples with apples, the cost to treat an area rather than just the cost of the product.

## LIQUID FERTILISERS (FOLIARS)

Turfgrasses have the ability to take up all 14 essential mineral nutrients directly through the foliage. Current formulations of liquid fertilisers are believed to penetrate mostly the transcuticular pores on foliage, which are open virtually all the time compared to the stomata (Fernandez and Eichert, 2009; Oosterhuis, 2009). For effective uptake into the stomata, you need to time your applications to coincide with periods of low environmental stress as this is when stomata are more likely to be open (Jenks and Ashworth, 1999).

A surfactant or synergist can help improve uptake, and some forms of nutrient are better than others at being taken up, but there is

no real problem in getting any of those 14 nutrients directly into the leaf (Ford 2018). Foliar fertilising can reduce inefficiencies that occur with soil-applied granular fertilisers including soil interactions that affect nutrient availability such as pH, aerobic status, the solubility of competing ions as well as losses through leaching and volatilisation.

Application of liquid fertiliser through a boom spray is very efficient in terms of time, labour and cost. Foliar feeding fits well into a spoon-feeding programme as the very low rates would be impossible to spread through a fertiliser spreader. Many foliar fertilisers tend to be expensive, so prudent turf managers who want to save money can mix up their own brews (see the liquid N and potassium nitrate blend in the previous article - ATM Volume 22.2, page 60).

## SLOW-RELEASE OR CONTROLLED-RELEASE FERTILISERS

In the natural environment, plants will take up N immediately as they don't want their competitors to get to the available N first. If we apply too much N fertiliser in one application, it makes the plants unhealthy or even kill them. We might calculate a fertiliser rate to last the whole of January, but the plant doesn't know that. Once you've applied N, the plant will take up all that N within a few hours so there will be a short-term spike in tissue N percentage, followed by a decline over two or three weeks. Figure 1 (page 50) depicts what the response to the fertiliser application will look like.



PHOTO: ANTHONY MILLS (THE LAKES GC)

*It is recommended to trial several products before implementing a new fertiliser regime. Fertilisers can be trialled on a practice green or even at home, noting the response and longevity of the products*



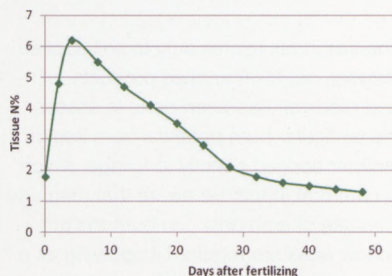
The turf will be lush and unhealthy for the first two weeks, more susceptible to diseases like pythium and drechslera and there will be excess clipping production. If these clippings are removed in catchers, a lot of N will be removed from the system. An excess in N also reduces root depth as the plant will senesce some roots to recycle carbohydrates and mobile nutrients like phosphorous, potassium and magnesium to support all the new growth.

Many ryegrass sportsgrounds are only fertilised three or four times per year, with a massive hit of N in each application which creates an unhealthy plant. Although labour costs would be increased, it would be better to apply smaller quantities of fertiliser more often.

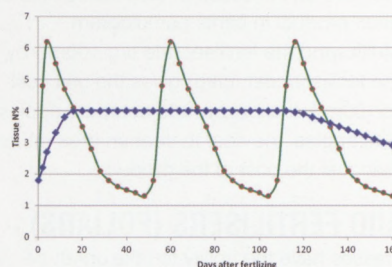
Slow-release or controlled-release products avoid the issues outlined above. Controlled-release is the modern name and it means the nutrient is released into the soil at a known release rate, which is usually affected by soil temperature. The desired effect is shown on the blue line in Figure 2 where the tissue N% can be maintained closer to the optimum level of four per cent, whereas the monthly applications shown on the green line results in peaks and troughs which rarely stay at the optimum level.

Slow-release fertilisers are the best option on new turf constructions where fast-draining sands with a low CEC have been used. There are three main forms of slow- or controlled-release N fertiliser;

**Organic:** The original slow-release product, as Mother Nature intended. Manure type products predominate here, but there are a number of



**Figure 1:** Once nitrogen is applied, the plant will take it all up within a few hours causing a spike in tissue N%, followed by a decline over two or three weeks



**Figure 2:** The desired effect of a controlled-release is shown on the blue line where the tissue N% can be maintained closer to the optimum level of four per cent

niche organics made as by-products of other industries (e.g.: from abattoirs or fish cleaning operations). Organics release their N and all the other nutrients as they decompose, so the activity of soil microbes determines the release rate.

Their release may not be quick enough during winter in the southern states of Australia, as microbial activity drops off with low temperatures. It is possible that release

is too quick in the summer for the opposite reason. Another benefit of organic fertilisers is that they can contribute to the soil organic matter fraction and raise CEC. In most cases one would expect about two months' longevity with these fertilisers. One drawback is that the fungi that cause fairy ring seem particularly fond of animal manure products, so they are probably best avoided if fairy rings are present.

**Chemically reacted urea:** Urea can be treated with a chemical that locks up its release. There are two main forms:

- Formaldehyde or methylene are two chemicals that lock up the release of plant-available N from urea, in the products urea formaldehyde (UF) and methylene ureas (MU). The chemical is degraded by microbial action in the soil over time, eventually releasing the urea where specific bacteria convert it to the plant available forms ammonium and nitrate. The release rate of UF or MU products is therefore controlled by the rate of microbial activity, which again depends mainly on temperature. The release may not be quick enough in winter in southern Australia as microbial activity drops off with low temperatures. In most cases one would expect about 2-3 months' longevity with these fertilisers, depending on the product. Some of these products are actually liquid, which allows for very accurate application using a boom spray. Despite being a liquid, they are still slow release and not necessarily immediately available to the plant.



Foliar fertilising can reduce inefficiencies that occur with soil-applied granular fertilisers including soil interactions that affect nutrient availability such as pH, aerobic status, the solubility of competing ions as well as losses through leaching and volatilisation



- The second type of chemically reacted urea is called isobutylene di-urea (IBDU or isodur). IBDU is a very slowly soluble granule and release is simply from the passing of water over the granule. The larger the granule the longer it will take to dissolve, so the release period can be several months. This chemical is different to the other slow-release N products in that temperature is not an issue. It will release as well in winter as in summer. Examples are N-Durogreen and the Floranid range.

**Coated products:** The third main type of slow-release fertilisers are the coated products. A point of difference with coated products is that any combination of the essential nutrients can be coated, so you are not just limited to N. A normal granule of fertiliser can be coated to prevent it dissolving and this provides the slow-release action.

The cheapest form of coating is sulphur (e.g. sulphur-coated urea, SCU). More expensive coated products have both a sulphur coating and a polymer coat (e.g.: Poly-S) with a wax coating to aid in waterproofing. As the wax, polymer and sulphur coats are broken down by microbes and by water uptake, they release their nutrients. The most technologically advanced type of coating uses several layers of a polymer coating where water is drawn into them by osmosis and then the prill swells up under water pressure which then forces nutrients out into the soil.

The rate of release depends largely on the number of coats applied to the prill, and you can have 3-, 6-, 9- and 12-month release products (e.g.: Once and Osmocote products). Cold temperatures can slow down the rate of nutrient release, so again they might not release enough in a cold climate.

There are some other forms of slow-release technology apart from these. The fertiliser magnesium ammonium phosphate (sold as Magamp) consists of large prills that take months to dissolve and is a very effective slow-release N form. Another technology slows down the transformation of ammonium N in the soil to nitrate N, which reduces nitrate leaching losses. An example of this is the Nu-max range of products from Simplot.

Slow-release fertilisers are, naturally, more expensive than the readily soluble fertilisers. In round figures, a readily soluble fertiliser may cost 80 cents per kilogram, while a slow-release product will cost \$4/kg. There are some points that need to be made here:

- You may get some of this cost back in the form of labour savings.
- You will not save on labour if only the N is slow release, because you will probably still need at least monthly applications of potassium, iron and other nutrients, particularly on a sand-based green.
- Most slow N products are a blend of true slow N fertilisers with cheaper, basic soluble products. Some are reasonably expensive, but contain only a small amount

of slow-release product with a majority of quick release fertiliser, but are still costed as if the entire product is slow-release. A good slow-release blend should contain a significant majority of slow-release product and a small minority of quick-release product.

- Granular slow-release products are in danger of being picked up by mowers with catchers and can be wasted. On greens or anywhere catchers are used, apply a liquid slow-release product, or a mini or micro prill sized slow-release fertiliser.
- It is recommended to trial several products before implementing a new fertiliser regime. Fertilisers can be trialled on a practice green or even at home, noting the response and longevity of the products.
- When using slow-release products, cut your actual N rates to about half to two thirds of what you were applying with the quick-release programme. With quick-release fertilisers, much of the N you apply may not be taken up by the plant as it has been lost through volatilisation or leaching. With slow-release products, very little N is lost and nearly all of it will end up in the plant – so cut the actual N rates back. This is also good for the environment, as leached N can pollute waterways.

The real benefit of slow-release N products is healthier turf and it is strongly recommended that sports turf managers learn how to use them effectively. ⚡

## FERTILISER RATE AND COST CALCULATIONS

With budgets tight, it is important to evaluate the cost effectiveness of all inputs. Some of the following calculations may seem basic, but it is important to show all the steps to get to the final cost.

### CASE STUDY 1

Calculate the rate and cost to apply sulphate of ammonia (21% N) to a perennial ryegrass sportsfield. Based on the fertiliser programme, the rate of actual Nitrogen is 0.2kg/100m<sup>2</sup> and the total area of the oval is 1.6ha. Use the formulae:

**Fertiliser rate kg/100m<sup>2</sup> = Rate of actual N/100m<sup>2</sup> x 100/N%**

So, on the perennial ryegrass field, where we want 0.2kgN/100m<sup>2</sup>, the calculation is:

**Fertiliser rate kg/100m<sup>2</sup> = 0.2kgN/100m<sup>2</sup> x 100/21 = 0.95kg/100m<sup>2</sup> of sulphate of ammonia**

Because it's a broadacre area, that's equivalent to 95kg/ha of sulphate of ammonia. If the oval was 1.6ha, you'd need 152kg of fertiliser for the whole field.

**Note:** Multiplying the fertiliser rate (kg/100m<sup>2</sup>) by the fertiliser cost (cents/kg or \$/kg) gives the unit cost (\$ or c/100m<sup>2</sup>). For

larger areas it makes sense to work in kg/ha so you multiply kg/100m<sup>2</sup> by 100. It allows you to compare apples with apples, the cost to treat an area rather than just the cost of the product.

If the sulphate of ammonia costs \$18 for a 25kg bag then the unit cost (cents/kg) is 18/25 = 72.0 cents per kg so the cost for this application is: 0.72 x 95 = \$68.40/per ha. Then to calculate the cost of the application for the 1.6ha oval is \$68.40 x 1.6 = \$109.54.

### CASE STUDY 2

Calculate the rate and cost to fertilise a 400m<sup>2</sup> bentgrass green in January using a liquid nitrogen product (W/V 42.5%N) which costs \$1.20/litre. The actual N rate we want is 0.1kgN/100m<sup>2</sup>. To calculate the fertiliser rate is as follows:

**Fertiliser rate = 0.1kgN x 100/42.5 = 0.235 litres of liquid N/100m<sup>2</sup>**

If the liquid N unit cost is \$1.20/L then the cost for this application is 1.2 x 0.235 = 28 cents/per 100m<sup>2</sup>. For the 400m<sup>2</sup> golf green, the quantity of liquid nitrogen is approximately 1L and the cost per application is approximately 4 x 28c = \$1.12.

**Note:** When calculating ratios for liquid fertilisers, always use the weight per volume (w/v) analysis, not the w/w analysis.

### CASE STUDY 3

How do you work out the actual Nitrogen content of a fertiliser? We have applied 6kg of urea to a 1000m<sup>2</sup> bentgrass bowling green. What rate of actual nitrogen have we applied and is the rate excessive as a maintenance rate?

**Actual Nitrogen rate kg N/100m<sup>2</sup> = Fertiliser rate kg/100m<sup>2</sup> x N%/100**

Six kg of urea per 1000m<sup>2</sup> is equivalent to 0.6kg/100m<sup>2</sup>. Actual N kg/100m<sup>2</sup> = 0.6kg x 46/100 = 0.276kg actual N/100m<sup>2</sup>

The application is a little excessive for a bentgrass bowling green, but not too high that it would be harmful to the green.

**Further reading:** Some interesting articles, discussing the costs involved in fertiliser programmes, can be found at [www.asianturfgrass.com](http://www.asianturfgrass.com). Another excellent article by the USGA is 'Does the grass know the cost?' by Stan Zontek et al in the May-June 2010 edition of the Green Section Record.





# Transitioning to a tee

*Peter McMaugh AM looks at the secrets to successfully transitioning out ryegrass from a couchgrass sward.*

One of the most troubling questions for any turf practitioner who oversows couchgrass for better winter presentation and wear, be it a golf course tee or a football ground, is when and how to take out the ryegrass to affect a good transition back to healthy couch.

There are four elements to this question that all need to slot together smoothly for the operation to be successful. These are;

- Choosing the best couchgrass to be oversown;
- Choosing the best ryegrass for its transition performance;
- Choosing the appropriate chemical to assist the transition; and
- Choosing the right 'time' to carry out the exercise

Regarding the first point, in some ways it would be best to talk about this subject last and maybe we will have the last word. In the

meantime, what the answer is to this question really comes down to what couchgrass will give the greatest recovery potential; in other words, 'what's left' at transition time.

Many of the couchgrasses used on tees and football grounds are chosen for their density and their ability to carry high wear with high recovery rates. For this reason they are often difficult to oversow unless there is a dethatching programme carried out beforehand. For the overall health of the couchgrass, this is not the right time of the year to be dethatching. Damage done in late summer and autumn can leave plenty of open wounds for fungal invasion, to say nothing of removing food reserves that normally would be used for recovery at green-up in spring.

The major problem that couchgrasses have is with the density of the oversow, because it often really transforms the oversown area into a pure ryegrass sward that excludes 90 per cent or more of the incidental light

from the couch. This is rather disastrous for Australian-bred couchgrasses which are bred to stay green into winter and also for hybrids like Santa Ana that have late dormancy and early green-up. They are deprived for many months of the chance of storing more food for recovery in spring.

Australian-bred couchgrasses are usually selected for very flat growth which means that when they are oversown they consume stored energy that they would normally use in spring to produce upright growth to compete with the ryegrass for light. This is a survival response which makes for a negative in spring.

These considerations lead to only one conclusion – that only couchgrasses with the ability to store lots of goodies in reserve will have the ability to transition successfully. How many of our currently popular varieties have this innate genetic ability? The answer to that will come later, but for now we need to carry it uppermost in our mind.





## CHOOSE WISELY

The second point for discussion are the ryegrasses themselves. Breeding ryegrasses that transition well is not a high priority among the international breeders. Their emphasis is on very late flowering types, not the early flowering types needed for quick transition. Internationally, the market for ryegrass of turf type is dominated by permanent ryegrass swards. I have been quite surprised by hearing that some of the older early transition types like Caravelle are still in demand.

Another characteristic of most of the perennial ryegrasses bred for turf is that they have high endophyte content. This sets up an allelopathy contest with the nurse grass. These grasses not only compete with the nurse grass but they also attack it to weaken its competition. Only grasses with strong rhizomes can sustain this attack and come back. While ryegrasses with a weaker endophyte level are better for oversowing, you need to balance that against the level of insect attack that you might experience in your area.

*The secret to successful transition is a combination of things – selecting the right couchgrass and ryegrass, choosing the best chemical to assist the process and making sure your timings are spot on*

Choosing your ryegrass for oversowing is something that requires careful research. Before you make your decision, talk with a very reputable seed company. If they don't have a suitable product they will normally say so.

## CHEMICAL TRANSITION

There are suitable chemicals which will hasten the exit of ryegrass and the sulfonylurea herbicide Destiny (iodosulfuron) is probably going to be the herbicide of choice on most occasions. Choosing the optimum rate of chemical which will give the best rate of fadeout and the least damage to the couch will vary from place to place. Too much water will normally work against the sulfonylureas achieving a good result, because they are as a group very soluble in water and move easily with the surface flow when there is runoff.

## TIMING IS EVERYTHING

Choosing the 'right time' is always going to be an exercise fraught with danger. The experience of most practitioners is that the biggest mistake is to leave it too late, because by then the couch will be too weak or almost non-existent to make a comeback. On the other hand, the penalty of going too early can unleash the possibility of a late frost or an unseasonably cool spring making it very slow for the couch to emerge from hibernation.

If you have the unhappy combination of a couch which has poor prospects of being robust in spring and a too late take out of the ryegrass, you will be left with a disaster that will probably need returfing.

This really brings us back to the consideration of what couchgrass we should be using in the first place. The best grasses to choose for vigour at transition will be the same as those that survive drought the best. These are those with the strongest rhizome growth.

Rhizomes are the 'secret' ingredient to successful transition. When you look at a list of grasses with their rhizome rating alongside of them, you can begin to see why many fail to varying degrees in transition. The list in Table 1 (right) has been derived from my latest research trials conducted during spring/summer 2019/2020.

You can have a very extensive and very strong root system, but without any rhizomes you will not have the carbohydrate stored food reserves to give the plant the get up and go in spring. This is especially so in a year when you experience the spring root dieback phenomenon that I wrote about in ATM Volume 21.3 (May-June 2019).

In Table 1 there are some grasses which are much easier to overseed than others. The

best combination of sufficient openness for ease of oversowing, but with adequate density for high wear tolerance and strong rhizome growth, is SR3. This is 'the secret' ingredient for the transition mix and SR3 offers a new standard in this area.

## COVID-19 CHALLENGES

From the information I am getting from the seed trade, the sales in this current year for oversowing are down about 40 per cent, so what does this mean for use post COVID-19? One thing we can predict I think with some certainty is that when the now vacant (as I write) playing fields come back into use, it will be a case of continuous overuse.

The additional gremlin is also likely to be a wetter than usual winter (at least that is the gist of what the forecasters are saying). Overuse combined with wet grounds will see a lot of disasters appearing, whether the fields are oversown or not.

Recently there was a small flood in the Hawkesbury/Nepean River. It did not produce a huge inundation of a large number of turf farms. On the low lying farms the water stayed on some areas for more than 10 days, as it also did on Lynwood Country Club. The survival of bentgrass and buffalo was very poor. Damage on kikuyu was extensive and couchgrasses varied greatly in how they survived. Again, the winner in the recovery stakes was SR3 by a big margin. It resumed growing as if it had never seen the inundation.

Remember that good drainage both in surface runoff and subsoil is the key to keeping any kind of playing field in good condition. As I said previously, get ready for overuse. Make sure if you can to spread the wear around. I know it is like trying to herd cats, when you try to move players from that spot outside the field entry point, but you have to be strong and insist on putting up barriers if necessary.

So what is the take-away message from all this? It is there in the four points at the very beginning of the article. Oversowing is a remedial for overuse but it won't work if there is no drainage. 🙏

TABLE 1. RHIZOME RATINGS

Grass Variety	Rhizome Presence	Rhizome Strength
Wintergreen	*	Very weak
Windsor Green	****	Strong
Grand Prix	**	Weak
Legend	*	Very weak
Santa ana	*	Very weak
Oz Tuff	****	Med/strong
Scientia	*****	Very strong
Tif Tuff	***	Med/strong
SR3	*****	Very strong
SR6	*****	Strong
SAV6	*****	Medium
SAV6.1.5	****	Medium





JOHN FORREST

*Hamersley Golf Course in Perth pumps through in excess of 70,000 rounds of golf. Combined with a heavily-treed layout and sting nematode populations, it is a challenging course to manage*

# Hamilton gets Hamersley back on track

*John Forrest looks at some of the measures taken by superintendent Craig Hamilton and his team to revitalise the playing surfaces at the public access Hamersley Golf Course in Perth's northern suburbs.*

**T**he City of Stirling in Perth, Western Australia has a treasure in its Parks Department – the heavily-treed 18-hole public access Hamersley Golf Course. Many of Hamersley's large trees grow close to the edge of fairways, tees and greens, are native to the area and were once considered to be one of the six forest giants of South West Australia, commonplace in WA until their export value with urban development reduced their populations.

*Eucalyptus gomphocephala* (Tuart tree) define many of Hamersley's holes that support over 70,000 rounds of golf per year. On any par four on any given day, there will be a group of golfers on the tee and another waiting on the fairway for the group in front on the green to putt out. In addition to being heavily shaded and heavily trafficked, Hamersley also has sting nematode populations in all its surfaces – greens, tees and fairways.

It sounds like a challenge to present reasonable surfaces, but course superintendent Craig Hamilton has it worked out. Together with his four engaged and enthusiastic staff, he has shown that believing in the basics of developing an environment to promote and nurture plant health can deliver great results.

## QUITE THE JOURNEY

Turf management is an occupation that can take a person all around the world and with that comes unbelievable experiences and the opportunity to meet some genuine people. Craig's story starts in Northern Ireland where,



*Intensive renovation practices have significantly improved soil profiles and overall turf health*

as a talented youngster, he had ambitions to follow his love of sport and become either a professional sportsman or sports physio.

Carrickfergus Golf Club, just north of Belfast, offered him an apprenticeship which he eagerly took on, working there for about 1.5 years before work dried up in the winter months. He had to work as his pay helped to support his mum and family, so from there he went to the University of Ulster (Jordanstown Campus) working on a variety of surfaces including soccer, rugby and camogie (female hurling). He then went back into golf at the one-man owner course Burnfield House.

An avid cricketer, Craig played senior level at his local club and made friends with some New Zealanders who had come over for the season. Soon he found himself doing likewise, heading to the other side of the world to play cricket with the hope of also gaining more experience in the career he loved. Upon arriving in New Zealand he landed a job on a reconstruction project of four holes at the Maungakiekie Golf Club in Auckland. It was a chance to assist in building USGA spec perched water table greens. There was a five month pause in construction and superintendent Mike Leach and his assistant/brother Warren made Craig very welcome as part of the maintenance crew.



Unfortunately, Craig's visa expired and a trip back to Northern Ireland was needed with a job in the province of Ulster at Moyola Park Golf Club, a picturesque, heavily-treed golf course which would provide invaluable experience for his unseen future in Australia. It was then back to New Zealand and an apprenticeship at Waitemata Golf Club in Devonport, just across the harbour from the Auckland CBD. A two-year visa gave him just enough time to complete his apprenticeship, but feeling a little homesick it was back to Northern Ireland and a very special course in Royal Belfast.

The travel bug returned after two years and this time he headed to Australia. After fruit-picking in South Australia and a short stint at The Australian Golf Club in Sydney, he then backpacked the length of the east coast for three months, including Fraser Island and Cairns. He ventured south to Mt Hotham in Victoria and took on a part-time role as a snowboard instructor and concierge, before heading back to Northern Ireland and then to Niseko in Hokkaido, Japan as a snowboard instructor. A casual job at Whitehead Golf Course took him back to Northern Ireland with thoughts of returning to Japan in following winter.

Life then took a defining twist when he met the love of his life, future wife to be Clare. When she and her family (mum, dad, three brothers and one brother's girlfriend) decided to head to Perth, Craig joined them and upon arrival he worked for a landscape company. He then secured a job at Hamersley Golf Course and after a year moved into the role of superintendent. Twelve years on and Craig's family has grown to four children – an eight-year-old boy, six-year-old girl and three-year-old twins.

## BACK ON TRACK

Hamersley is the City of Stirling's only public golf course and is routed across 50 hectares only a few minutes from one of the country's most recognised courses, Lake Karrinyup Country Club. Despite operating with only a small crew, Hamilton and his dedicated team have fine-tuned the course and the management of the surfaces over a number of years, with the City providing the necessary support to ensure the facility is a thriving community asset.

When Craig took over as Hamersley superintendent, there was already a greens replacement programme in place, with two greens being restored every year. Rather than waiting nine years to see them all replaced, Craig instead recommended to council an intensive renovation programme to breath some life back into the existing Pennncross bentgrass surfaces.



*Superintendent Craig Hamilton on the 10th green, one of many greens to be impacted by significant shade*

Getting oxygen into the profile was the key. Multiple greens were affected by shade, high traffic, tree roots and sting nematode populations, while layering within the profiles was impacting water movement and retention. Action was required to address the soft, moist greens surfaces that had developed black layer and a short root system.

After solid turving out the worst affected patches, Craig embarked on an intensive coring programme, starting with 25mm tines and white silica sand rubbed into the core holes. The programme was implemented over a four-year cycle with the greens cored at varying depths each year so as not to core to the same depth twice in a row. No set programme was put in place as far as depths were concerned, with Craig making an assessment prior to each coring depending on the condition of the surfaces.

In more recent times, with the introduction of Ninja tines (mini hollows), the opportunity to reduce major greens aerations has been possible, with autumn renovations now replaced by three Ninja-tine events. A mini-tine (solids) is ongoing as required.

As well as more intensive renovations, Craig has also started oversowing new creeping bentgrass variety Pure Distinction into the existing surface at renovation time (September) which is proving very successful. Staff initially scarify the greens surface in two directions, with the blades just touching the soil surface but not disturbing it. Thinning the thatch and leaf matter allows the seed to settle close to the soil surface. Coring is then undertaken – the depth being dependent on what is required as far as layers or compaction – and the Pure Distinction seed then spread and the green topdressed. Ensuring all holes



*For a public access facility, Hamersley punches well above its weight in terms of conditioning and presentation*





JOHN FORREST



A team effort... Craig Hamilton (second from left) and his crew with City of Stirling senior irrigation officer Kevin Zoccoli (far left)

are filled is important, but being too vigorous in trying to achieve this can damage the leaf blade at a time when recovery is key.

Plant health is Craig's number one target. On a golf course where revenue is made through the number of golfers playing, a speedy return to a good surface is critical. The competition from the newly-seeded bentgrass appears to keep *Poa annua* at bay and the aggressive growth habit of the Pure Distinction also plays a role in this. Primo is applied on a monthly basis.

It is essential to keep a turf cover on the greens at Hamersley as algae can quickly appear on any bare surfaces, as will *Poa*. Dusting is a practice that is ongoing and undertaken weekly through summer and at least four times during the winter.

Soil testing is undertaken annually and nutrient applications are tailored on the results. Sting nematodes have been a problem in several of the greens over the years and Craig has applied a product called Seamungus with great results. While there are fluctuations from year to year, with them being particularly active in spring, across the course of one year Craig saw sting nematode populations in one of his problematic greens reduce from 430 (per 200ml of soil) to just 17.

Being heavily treed, the greens are also impacted by shade which increases the longevity of dew, an environment that dollar spot loves. It is a battle waged over much of the year and fusarium can also rear its head from time to time. Greens can be mowed early, but by the time golfers are on course playing the dew has often reformed.

Elsewhere on the course...

- Difficult-to-manage tees that have high sting nematode counts and/or large trees close by are treated with Seamungus. This can increase the moisture in the soil which, while ideal in summer, can cause a few problems in winter. Coring is completed as required to reduce saturated tees during the cooler months;
- Reconstruction of problem tees is ongoing with surfaces of 300-400m<sup>2</sup> providing a more manageable size to spread wear. There is limited sideways movement for tee construction due to the trees, so often a long rectangular design is best.
- Oversowing tees with ryegrass helps get them through winter. The surface is scarified depending on grass coverage and how much dead material is on the surface. Seed is then spread and the tee topdressed. Core holes are punched into



During September renovations, the Penncross greens are oversown with Pure Distinction creeping bentgrass

the surface when needed and seeding through the winter may be ongoing depending on the weather and wear.

- Fairways are kikuyu and tend to get spongy and a little thatchy, so Craig tackles this by scarifying in two directions and sanding each year. Scarifying also improves the evenness of the surface.
- Green surrounds are one of the highest wear areas at Hamersley. When areas are narrow and golfers are channelled close to the green, compaction becomes an issue and coring is very important. Titan split tines are used as they dry quickly and can be rubbed in more effectively.

## TEAM EFFORT

One of the major improvements at Hamersley in recent times has been the installation of a new Toro Lynx irrigation system. Valve-in-head sprinklers have been used throughout the course, with Infinity 35s on fairways and tees and Infinity 55s on greens. Craig worked closely with City of Stirling senior irrigation officer Kevin Zoccoli to produce a system that meets not only the course's requirements but also the City's efficiency and regulatory requirements.

Complementing each other's abilities, Kevin and Craig worked together to look at different angles and come up with a system that not only conserves water but meets the turf's requirements. Tree roots encroach into the playing surfaces on many parts of the course and Perth is a windy city. If a dry spot appears on the course, then one or two sprinklers can be turned on to target it, instead of a whole block as was the case in the past.

Craig knew the shapes he wanted the irrigation to cover on course and Kevin designed the system to fit, with 16-metre spacings ensuring even coverage. Moisture sensors installed in each green assist identifying whether notorious dry areas need watering. The fact that the golf course can be watered on demand is critical for the turf surfaces and Department of Water licensing requirements.

A superintendent is only as good as his staff and with the demands at Hamersley it really is a team effort to get the course to the standard it is. Craig does not have many staff, but they are certainly all on the same channel. To look over the whole course at the end of summer and find no dry patches indicates a switched-on superintendent, engaged staff and an irrigation supervisor with the skills and knowledge required. The City of Stirling must also take some credit for supplying the budget and support needed to produce a golf course that is well patronised and enjoyed by many. ۞



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*HR expert Vicki Crowe looks at the concept of 'growth mindsets', a new buzzword for businesses and organisations.*



PHOTO: ADDBESTOCK.COM/ENJOYS25

# All in the mindset

**F**or many years, 'growth mindsets' were well known in the education and elite sports industries. In the last couple of years, businesses have also started to grasp the concept and are now using it to improve employee productivity and performance.

In the early 1970s, American graduate psychology student Carol Dweck began studying how children coped with failure. She found that some didn't just cope, they relished it. She also found for some people failure is the end of the world, but for others it's an exciting opportunity to improve. These findings led Dweck to research why there was such a difference in individuals. She found that all individuals have either a 'growth' or 'fixed' mindset and now believes businesses and organisations do too.

Employees with a growth mindset enjoy challenges, strive to learn and consistently see potential to develop new skills. They believe

their talents can be developed through hard work, good strategies and input from others (collaboration). They tend to achieve more than those with a more fixed mindset who believe their talents are innate gifts.

Employees with a fixed mindset felt that their companies focused too much on the small handful of 'star' workers and didn't feel the company had their back. These employees were less committed than other employees and were worried about failing, so they held back on offering suggestions to help the company grow. They also often kept secrets and cut corners. When people with fixed mindsets face challenges, receive criticism or fare poorly compared with others, they tend to fall into insecurity or become defensive, which in turn inhibits growth.

Dweck says people often confuse a growth mindset with being flexible or open-minded or with having a positive outlook. However, she calls this a false growth mindset.

There has been a lot of research conducted on understanding how a company's mindset influenced workers' satisfaction, perceptions of the company's culture, levels of collaboration, innovation, behaviour and how it affected a manager's views of employees. The research found that in each company there was a real consensus about the mindset. Managers in growth-mindset companies expressed significantly more positive views about their employees than those in fixed-mindset companies, rating them as more innovative, collaborative and committed to learning and growing.

Today, companies need to innovate to stay ahead. To do this, they need to have a growth mindset and think about the business in new ways. Companies need to shift their focus from output (fixed mindset) to a focus on effort (growth mindset). So instead of celebrating employee achievements, they are celebrating the effort they put in.

To implement a culture of growth mindset, managers must drive the change. Growth mindset businesses support developing their people internally and often hire from within, while fixed mindset businesses hire externally and focus on qualifications and achievements. Growth mindset businesses value potential, capacity and a passion for learning.

It is believed that focusing on qualifications only is not nearly as effective as hiring people who love challenges, who want to grow and who are strong collaborators. For example, Microsoft has shifted from hiring on education and qualifications to hiring people who demonstrate they are capable, independent learners. Microsoft have found this shift to a growth mindset has already had a big impact on the culture and employees' productivity.

You don't need to be a Microsoft to start implementing a growth mindset. You just need to encourage employees to collaborate, share information, offer innovative ideas, actively seek feedback and see errors as learning opportunities. ۞

## DIFFERENCES IN MINDSET CHARACTERISTICS

	Fixed Mindset	Growth Mindset
<b>Skills and intelligence</b>	You have what you have	Can be grown and developed
<b>Main concern</b>	How they look, performance focus	Learning, getting better, process focus
<b>Effort</b>	Something you do when you're not good	An important part of learning
<b>Challenges</b>	Give up, check out	Persevere, work through it – show more grit
<b>Feedback</b>	Take it personally, get defensive	Like it, use it to learn
<b>Mistakes</b>	Hates them, tries to avoid making them	Treats them as a learning opportunity



# Shake on it?

*Terry Muir asks whether the humble handshake is now a significant workplace hazard?*

In November 2019, e-par mapped out the top 12 environment and safety risks as part of its EHS 'Dirty Dozen' initiative planned for early 2020. At no time was pandemic risk on our calendar and certainly at no time was the handshake listed on our risk registers as a workplace hazard! Come March 2020, that changed overnight.

The long-held habit of the handshake greeting has disappeared as social distancing has become the new normal. Since March, the practice of handshaking has rapidly vanished, replaced by fist bumps, head nods, foot taps and elbow taps, all to limit the spread of the virus. The handshake is now formally recognised as a significant hazard.

Hopefully the handshake is just on extended leave, but for now everyone should be keeping their hands away from anyone else's and speaking up when they see others not doing the right thing. In the same way that we've come to ignore the awkwardness and speak up when we notice that someone is not following a safety procedure, we now ought to feel obliged to call out people for shaking hands – even if it invites discomfort.

David Whitworth, a biologist at Aberystwyth University in Wales, reported on a study he conducted on handshake bacteria transfer. In his experiment, he had one person dip their hand into a container filled with bacteria then shake hands with another person (both wore sterile gloves). After the recipient's glove was dry, Whitworth measured the bacteria on it. The experiment was repeated with high fives and fist bumps. He found that;

- A handshake transfers almost twice as many bacteria as a high five;
- Significantly fewer bacteria are passed along in a fist bump compared to a high five;
- In all three greetings, longer duration of contact and stronger grips increased transmission.
- If people feel the need to touch, then a swift fist bump or similar would be much better than a handshake.



PHOTO: ADOBESTOCK.COM/AHA-SOFT

Steven Pinker, Harvard's Johnstone Family professor of psychology says, "Because this is a pandemic, because there is virtually no population immunity, and because we know that people can transmit while being either pre-symptomatic or showing minimal symptoms, every handshake runs the risk of exposing you or the other person to the virus."

Shaking someone's hand is one of the ways that we are more likely to become infected, and so it must become very easy for all of us to remember to do something else. For now, all work areas should be handshake and high five free.

So how do you avoid shaking hands? Amy Gallo reported in The Harvard Business Review on how to respond if you find yourself meeting new people or even reuniting with work colleagues or clients you haven't seen for a while. Her main message is to accept that it's going to feel awkward.

Here are a few things to keep in mind. First, decide ahead of time what you feel comfortable with. Before you go into a meeting or you greet someone new, think through what you want to do. Having a plan will give you confidence and potentially make it less awkward. One option is to keep your hands in your pocket and say, with a smile, "I guess we're not supposed to shake hands now." That phrasing helps to reframe what might've

been perceived as a refusal into a shared acknowledgement of the current situation.

Another suggestion is you might say something like, "It's such a pleasure to meet. I'm so glad we're here together face to face, even though I can't shake your hand." You might also consider saying hello at a slightly farther distance and giving a quick wave before returning your hand to your pocket.

Remember, given the current circumstances, you probably don't need to apologise for your unwillingness to shake hands. Instead of worrying about how your behaviour measures up against another, recognise that we're all managing risk and you must do what you feel comfortable doing, and assume others will understand.

Reserving judgment and not worrying what others think of you is good advice at all times, and especially important now when stress and anxiety are heightened. You are not refusing to shake hands; what you're really saying is I'm listening to public health officials and trying to prevent COVID-19 from spreading.

When will it be safe to shake hands again? Currently, the handshake is such a terrible idea, from an infectious disease standpoint. It may return once the virus is under control, but for now a handshake is no more than an 'infection by affection' risk. Perhaps we can all shake on that. ٥





The carry on the 1st tee was one of the first areas transformed as part of the Kew Golf Club's new vegetation management plan. Pictured is the carry seven months after planting

# Kew kicking new goals

PHOTOS: BEN BURKE (KEW GC)

*The past five years have seen a raft of course improvement works undertaken at Kew Golf Club. As superintendent Cameron Hall writes, attention has now turned to improving the course's out of play areas with the implementation of a dedicated vegetation management plan.*

It was 2010 when Kew Golf Club in Melbourne engaged the services of highly respected former course superintendent and course designer Graeme Grant to undertake a comprehensive grass study of the existing grasses present on the course and provide recommendations for more suitable grass types for the future. As part of that study, Grant also came back with a recommendation for the club to engage a qualified arborist to undertake a full tree audit of the site.

At the time the course was heavily tree-lined with a wide variety of exotic species

planted during the famous member 'working bees' of the 1960s and 1970s and the majestic river red gums which inhabited the property long before golf was played. This tree audit was to form the backbone of the club's first vegetation management plan (VMP) which was approved by council (City of Boroondara) in 2014 to cover a five-year turn.

During this time an incident had occurred on the course where a member was left wheelchair-bound following a tree falling on top of him as he left the 2nd tee complex one afternoon. The initial VMP was heavily focussed on hazardous and exotic tree

removal with over 300 trees removed from the site during this time. The initial VMP was devised by landscape designer Philip Liston in conjunction with the Tree Logic tree audit and while it covered all bases regarding tree management it lacked detail in improving out of play areas and working with our natural environment.

In 2018 we began the process of implementing our second VMP from years 2019-2023 and with the majority of the major course works from the Course Master Plan completed, it was decided to focus on the recommendations of improving out of play





rough areas and focus on reducing areas of rough to cut.

At this stage we felt that while the initial VMP was suitable to start with, we needed our next VMP to be designed with a person who had experience in golf course vegetation



*A significant number of areas have been earmarked for revitalisation as part of the new vegetation management plan. Most are situated around tee surrounds and out of play areas at the rear of greens*

and establishment. After a thorough search and review process, the club engaged Kate Torgersen (Environmental Golf Solutions) to design our second VMP in collaboration with Graeme Grant which was to carry us through until 2023. As part of this document we had another tree audit carried out which came back with a structured works schedule for the next five years.

Part of the early process of implementing the new VMP was to carry out a trial site in an 'out of play' area to give the board and members an actual visual understanding of what the new works would entail. The site chosen was on the right-hand side of the par three 4th wrapping around the back of the green and up to the 5th tee.

This area had been previously maintained as rough 30-40m away from the green and was well out of play. The initial feedback was mixed, with positive views by some and negative by others. We were not surprised by this as traditionally Kew had been known as

a manicured, tree-lined course with several exotic trees throughout the property.

While the whole project excited me and I could see how it would improve the course, I quickly came to the realisation that for this project to be a success we needed to recruit someone who had the necessary skill set and enthusiasm to make this project a success and take ownership of this area of our operations so that I could focus on the playing surfaces.

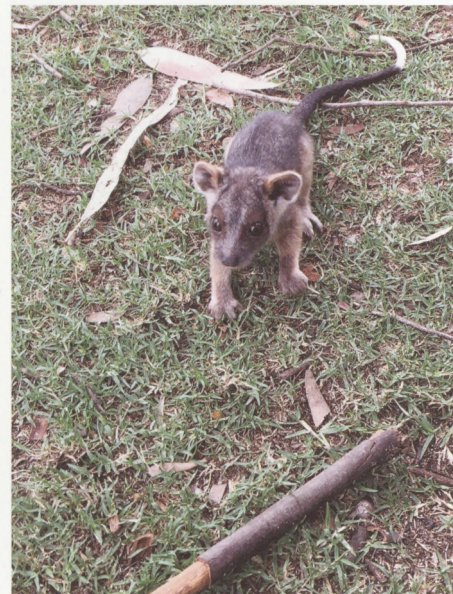
After numerous ads being placed and trialling several different staff, we hired Ben Burke as our vegetation manager. Ben had a history with golf clubs having worked at Yarra Yarra and Metropolitan golf clubs and had the energy and confidence in himself that he could make this a success.

Ben is now well underway in taking hold of the VMP, with vegetation works being implemented in many locations around the course. Most of these new areas are situated around tee surrounds and the rear of greens where far enough out of play.



*The 1st tee carry before and during works. The species selected for planting in these areas were based on Kew's local ecological vegetation class (EVC)*





*The vegetation management plan is a win for the environment. As well as transforming the look of the course and reducing inputs, it is having a positive impact on local fauna*

## STRIKING A BALANCE

The species selected for planting in these areas is based on the local ecological vegetation class (EVC). The local EVC at Kew Golf Club is known as a 'Floodplain Riparian Complex' which is dominated by river red gums along with a shrubby understorey and a variety of grasses and groundcovers. Any golf course in Victoria can work out their own local EVC by using a free online programme called Nature Kit (<https://www.environment.vic.gov.au/biodiversity/naturekit>).

Once we had a list of local plant species, the challenge lay in designing these vegetation areas in such a way that they are not only aesthetically pleasing but also allow golfers to locate their ball and play a meaningful shot. If you can strike this balance, then implementing these areas in other locations on the golf course usually comes with little opposition.

In saying that though, we are currently facing some issues with one of our vegetation areas located in front of the 1st tee. The reasons for this appear more to be in relation to the early incomplete look of the area as the young plants are not yet fully developed. These vegetation areas usually take around 2-3 years to fill in, something that some members are having a hard time envisaging.

It is particularly challenging in these early stages as there are no real reference points on the course of fully mature native vegetation areas. Some other member complaints have been along the lines of 'we are not a Sandbelt club' and 'this is not Kew'. We have managed to get some members back on side by providing more communication and through the use of simulations which display how these areas will typically look in a few years' time.

This is one piece of advice we would recommend to other golf clubs looking to start a vegetation programme. Provide as much

communication as possible without being too technical on the details and where needed provide visual aids. Visual presentations such as the simulations have been a major factor in getting more members on side with our VMP.

While we continue to battle with some members over the vegetation, we are also getting a lot of good feedback from other golfers and from the local fauna. For example, removing weedy shrubs between fairways and replacing them with low native grasses has allowed us to open up vistas around the course. In return, we have seen an increased amount of evidence that wombats, which live in burrows in the bushland reserve next door, are visiting more frequently.

We are incredibly lucky to not be landlocked by suburbia like many other golf courses are. There is a linkage of natural

vegetation for almost the entire length of the Yarra River system which allows animals to move freely in and around the golf course. The recent sightings of echidnas, kangaroos and wallabies reinforces that we are doing the right thing for the environment and it is our hope that we can make some of these native animals more permanent residents.

The local council has also noticed our environmental stewardship and they have offered to install habitat boxes for sugar gliders and native birds. Melbourne Water is also assisting us with the funding of plants for revegetation along the river banks.

Overall, we believe implementing our VMP is a win for the environment and the club as a whole. In time, these vegetation areas will reduce costs associated with fertilising and mowing, while transforming what were once bare areas into wonderful pockets of vegetation for many local animal species. We believe in time most members will begin to appreciate these areas more and will be proud to stand out as one of the more progressive clubs of Melbourne's 'clay belt'.

**Superintendent Note:** One final piece of advice for anyone looking to implement a project like this – ensure you have or recruit a staff member who is able to take full ownership of the task and let them do it. Having a good relationship will keep the communication channels open at all time, but this is specialised work and having a suitably qualified staff member to complete it will make your life so much easier.

Being able to let Ben take ownership of this project and allow myself to focus more on the playing surfaces has been the biggest positive of this project to date. We also found having Ben attend Course Committee meetings was very helpful as he could answer any questions directly that were raised. 🐨



*A waste area behind the 2nd green has been transformed into a native area well out of play*



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*The stunning Peter Thomson-designed Hamilton Island Golf Club is located on Dent Island in the Whitsundays. Pictured is the 5th*



# Hamilton Island GC, Qld

*It's hard not to be envious of Hamilton Island Golf Club course superintendent Brad Hole.*

*His office is literally in paradise...*

**Superintendent:** Brad Hole (51).

**Family:** Wife Simone and kids Marley (22) and Jamie (20).

**Social media:** Instagram @golfbrad.

**Period as a superintendent:** 23 years.

**Association involvement:** ASTMA.

**Career:** Sanctuary Cove (greenkeeper, six years); Laguna Phuket Golf Club, Thailand

(superintendent, 10 years); Bayan Tree Bintan, Indonesia (consultant, four years – monthly trips while in Thailand); Laguna Quays (superintendent, two years); and Hamilton Island Golf Club (superintendent 11 years).

**Qualifications:** Trade Certificate Diploma in Leadership and Management, Certificate IV in Training and Assessment.

## **Where in Australia is Hamilton Island Golf Club (HIGC)?**

Hamilton Island is a resort island in the Whitsundays, Queensland. It's owned by the Oatley family who are passionate about the island and have invested heavily in its future. The golf club is on its own island 1km to the west – Dent Island – which has nothing else on it except for a lighthouse. All guests come across on a ferry which is part of the experience. The reef and the Whitsunday islands are the area's main draw card for visitors and we're only a short boat ride from Whitehaven Beach. Hamilton Island's main event each year is Race Week which attracts yachties from all over the world competing and having a week-long party. It's not that busy on the course as it's all about the sailing, but the views of the boats racing around us is fantastic.



*The Hamilton Island GC crew during last year's PGA Professionals Championship. Superintendent Brad Hole is holding the trophy*





*The Dent Island terrain prior to construction of the golf course. The construction team, led by Doug Robinson, had to adhere to 26 different environmental management plans to protect flora, fauna and the surrounding reefs*

#### **Tell us a bit about your background and how you got into sports turf management.**

I never considered being a greenkeeper. It was 1988 and I was working on boats when I could and a surf shop on the Gold Coast in-between. I was going around marinas putting up posters about the Patanela, a yacht that went missing with some mates on it (still to this day never found) and saw an ad for an assistant harbour master at Sanctuary Cove. I applied for the job, missed it, but they offered me a position on the Pines golf course construction. I loved it and never looked back.

#### **Who were some of your early mentors?**

I've been lucky to work with some wonderful mentors. Doug Robinson is a standout, while Andy Johnson was on the Pines construction team and created a great work environment. Robin Evans was terrific to work with and, although having never worked with him, Darryl Edwards has been a dear friend over the years (he was working in Phuket when I was there). Good positive attitudes have been the trait I've noticed with all of them.

#### **Give us an overview of HIGC and some of its unique characteristics?**

Being a resort course, the majority of the guests are on holidays, playing the course for the first time and are normally in an upbeat holiday mood. Catching a boat across to Dent and being driven to the top of the island to the clubhouse, with great service from the clubhouse staff, adds to the adventure. Once on the course the views are the standout feature with every hole having a water and island view.

**HIGC is rated as one of the toughest courses in the state – how tough is it and what makes it so?** Most of the course sits on top of the island so is very exposed to a

brutal southeasterly (it is not uncommon to be blowing 50kph). Adding to that, the course is surrounded by national park and goes from narrow rough to one foot high thick native grass very quickly – it eats golf balls. We raised the rough height to reduce balls rolling off into the native areas which has made it easier.

The toughest hole depends on the wind, but the finishing four holes when it's blowing can be character building to say the least. On the front nine, the par three 4th can be almost impossible to hit. It's therefore important not to set the course up too hard, especially when the wind is up. The movement in the greens is subtle, but we don't want the golfers three-putting after they have lost two balls getting to them! We don't need them too fast for the same reason.

**Being located on an island makes for its own unique operating circumstances. Talk us through some of the logistics required to manage the course.** It can be a great adventure for the staff living on an island as there are plenty of activities to do and lots of friends to be made. It can also be hard finding

the right candidate; we always like experienced staff, but finding people that can move away to an island can be a challenge too. The island lifestyle is more suited to younger staff as they have less ties normally, but having them stay longer than 4-5 years is rare.

Access to the course for staff is via our ferry, but because we can't work the skippers longer than 12 hours a day, we can't start work as early as we would like. The boys leave Hamilton Island at 6.15am and by the time they arrive on Dent and drive up to the shed, they realistically don't jump on a greens mower until 6.40am-6.45am. We only get a 30-45-minute head start on golf, but not having a member comp to keep in front of makes it a bit less stressful.

In my early days here I commuted from Airlie Beach as my kids went to school on the mainland, meaning my assistant Nathan would get the boys going and I would get to the office about 7.30am. The kids have since moved away, so my wife Simone and I moved into one of the lighthouse keeper's cottages. In 1887 they built a lighthouse to mark the main shipping channel that runs along the western side of the island. The lighthouse has been automated since the 1980's and is maintained by the Australian Maritime Services. We maintain the cottages and grounds.

Logistics can be a challenge, especially making sure we have enough parts, fertiliser and fuel. We have a small barge (called 'Mini-Me') which at high tide can come over the reef. It's our main source of supplies and delivers twice a week. It brings a van over with clubhouse restaurant supplies and as that unpacks we take rubbish bins and a ute back to Hamilton Island. Our ute then goes to the workshop and picks up machinery parts while the bins are being emptied, then the ute and



*An island paradise. The golf course resides on Dent Island, 1km to the west of Hamilton Island*

PHOTO: ANDREW PEART





**Barges provide a critical supply link to nearby Hamilton Island and the mainland**

empty bins come back to Dent and the van goes back to Hamo.

We can transport one pallet in front of the van/ute which we unload using a telehandler. Sometimes we might have eight pallets of fertiliser to bring across, so it might take a few trips or a few days to get it to island, tides permitting. There is also a large barge (pictured above) that can deliver tipplers of sand, fuels and large machinery. It only has access on very high tides and during winter they are mainly at night.

We hold 5000 litres of diesel and 3000L of ULP on the island, so it is important to keep track of usage and plan the next barges well in advance. There is also a high cost with land transport, not just barging costs. A \$500 tipper worth of topdressing sand from Mackay costs \$1500 in transport as the tipper has to come across to Dent and go back again.

Our head office is based in Sydney and other departments are spread out, so most of my work is on the computer with communication via emails. Recruitment, accounting and payroll departments are based in Sydney, barging and logistics are on the mainland and human resources, stores, services, purchasing and my managers are all on Hamilton Island. Good communication is therefore very important.

### **What are some of the unique features about HIGC from a turf management perspective?**

The golf club is a small department in a big organisation. Decisions aren't made around the course's requirements or even the golfers. Golf isn't our core business and that took some getting use too. We have to fit in and work around different demands. We just can't pick dates to do renos or major works

and plan the golf around that. It doesn't work at large resorts and as important as we feel golf is, we're one of many activities and departments in the company. We have to schedule works in and around other events that might be happening on Hamilton Island, which is not always suited to the turf's requirements.

We do weddings on the course and sometimes the course is closed for half a day because all the buggies are needed for the guests to be transported to the 5th tee for the ceremony. We also have a very popular restaurant at the clubhouse and part of the lunch package is a guided tour of the back nine holes. There will be a convoy of up to 15 buggies drive around twice a day. They're madly taking photos so it's important the back nine paths are neat and wooden rails trimmed, so we'll often start those jobs out the back before the front nine gets done. Years ago when we had to push up bunkers in the wet season, the back nine would get done first. Sometimes in the wet we would have more guests on the tour than golfers for the day, so our priorities had to change to suit who our customers were at that particular time.

**Any special environmental considerations that you have to incorporate into the management of the course?** We work with and are audited by the Great Barrier Reef Marine Park Authority and follow an extensive environmental management plan. Now the course is built it's not too hard to follow the requirements, but I can't imagine what the design and construction team would have gone through. Doug Robinson and Ben Marshall did an amazing job keeping the construction within the site allocated and in such harsh and regulated conditions. I know there were 26 EMPs to follow, protecting flora, fauna and the surrounding reefs. The main thing is making sure there's no runoff or erosion from the island. Even the rain water collected around the shed and workshop goes through an oil separator and then gets sent back to Hamilton Island via sewage lines to be treated and used over there for irrigation.

### **Outline any major course improvement works recently completed or coming up?**

In 2018 we had our bunkers rebuilt by Kustombind which was a huge win for us. With heavy downpours during the wet season, the bunkers would wash out and get contaminated and required a huge amount of work to reinstate, sometimes knowing that another downpour was on the way. It took us two years to source the sand as the only local supplier with suitable material went out of business. We looked at a few options for the bunkers and had trialled some matting over time, but found Kustombind's method suited us best.

We had just started bringing sand over to the island when we were hit by Cyclone Debbie in late March 2017. A year later and two months before Kustombind were on site, we started barging the 2200 tonnes of sand and 7mm rock on to the island. Barges were coming in at night using light towers on the



*There is over 100m in elevation change throughout the Hamilton Island GC layout. Pictured is the 1st which is at the foot of the highest peak on Dent Island*



ramp to stockpile the material. Kustombind arrived on site and went flat out for six weeks. They dug out all the old material, flushed the existing drainage and made some small changes where needed. They installed the rock layer, applied their glues and spread the new sand. Transporting material from the stockpile around the course was a constant job; it's several kilometres out to the 15th green on the southern part of the island and 11kms around the whole course. We now have great bunkers that have stood up during the last two wet seasons perfectly.

Our next project is to cut out the encroachment on the greens and get them back to their original sizes. Hopefully this will happen next year and the aim is to replace a strip of Greenlees Park with a strip of TifEagle around the edges.

**Water is obviously a critical issue for any golf course. How does HIGC fare in the water stakes?** We are lucky we have fresh water on site. As a backup, there are underwater pipes connecting Dent Island to Hamilton Island so they can transfer their irrigation water over to us if needed. We came close to running out one year after a light wet season didn't fill our dam. We had dramatically scaled back our usage and were receiving 100,000L from Hamilton Island each day. The one good thing about being in the tropics is you know the rains will definitely come, although sometimes more than you want.

Our potable water for the clubhouse and shed is pumped across from Hamilton Island. I received a phone call one day saying the potable water wasn't reaching the holding tank on Dent. We searched for a leak everywhere but couldn't find one. We closed off the pipe coming onto the island, connected a compressor to the other island and discovered a mass of bubbles coming up in the middle



*In 2018 all Hamilton Island GC bunkers had Kustombind installed which has vastly improved their maintenance and playability, especially during the wet season*

of the channel! The pipe was in about 60 foot of water, so divers put a clamp on it. The infrastructure under the 2km-wide passage between the islands is incredible – pipes to transfer potable and effluent irrigation water to Dent, pipes to send our dam water and sewage back to Hamilton Island, plus power supply and fibre optics for communications.

**The weather and climate is always a great leveller. How has Mother Nature treated the course in recent times?** We have had numerous cyclones over the years, with Cyclone Debbie (2017) the most recent and worst. You get plenty of warning when a cyclone approaches and we have developed good procedures for securing everything, isolating services and protecting machinery. Getting prepared early is our key as the port authority closes the waterways, sometimes two days before it hits, which means we can't move between islands. The jetty is our weakest link and it has been damaged a couple of times and can take a week or two to repair. We

had to use helicopters to get to and from work one year which we loved!

**The one product I couldn't manage my course without is...** Primo on the fairways during the wet season is our saviour and before a cyclone hits as it could be a couple of weeks before we can get a mower on them.

**What are some pros and cons of being a regional superintendent?** The big pro up here is definitely the lifestyle and the weather for the majority of the year. The holiday atmosphere is also nice – most of the guests are great to deal with and talk to. The negatives would be that you don't have that network and support of other superintendents, reps and clubs nearby.

**Are expectations of course presentation and conditioning any less than that placed on your metropolitan counterparts?** These days I think everyone expects courses to be at their best, not just in the metropolitan regions. Being a resort course the expectation is high. Most members understand the maintenance that's required on their home course and see the benefits, but they don't like turning up on a holiday to find out greens have just been cored or its carts on paths.

**Do you use volunteers to assist with the management of the course?** No we don't, but due to COVID-19 my manager Chris Bailey and activities manager Tim Horwood have been helping us three days a week cutting surrounds, rough, tees and helping with renos which has been great. I think they love it.



*Being a resort course, conditioning expectations at Hamilton Island GC are high*



### What are some of the more unusual requests you've had as HIGC superintendent?

Race Week (held every August) used to be sponsored by Audi, so each year we had 10 cars positioned at different locations – it's not the easiest course to get cars around. Bentley also had a golf day once and it was a little scary getting two of them, worth a million dollars, off the barge!

**What have you got in your shed?** Four Toro TriFlex 3040s (green and tees), two Reelmaster 5610s (fairways), two Reelmaster 3100s (surrounds), Groundsmaster 3500 (rough), Groundsmaster 3280 (step cut around paths), Multi Pro 1750 sprayer (greens applications), Multi Pro 5800 sprayer (fairway applications), six Workman MDX utilities, two Tru Turf rollers, Pro Core, telehandler, forklift, positrack, tractors and trailers.

Our favourite piece of equipment isn't found in the shed. 'Mini-Me', our little barge, is invaluable and without it we wouldn't be able to operate. The skippers are brilliant and are so good to work with; nothing is ever an issue. Our JCB telehandler is also pretty unique, although it is getting old and rusty given that it has been here since the days of construction and operates in a salty environment. It's needed to unload pallets off the barges and we'd be buggered without it. Touch wood it'll stay together a bit longer as they aren't cheap to replace.

We are due to replace a tractor/trailer and a tow-behind topdresser. The paths here are steep and I would like to reduce the tow-behind equipment, so looking at a Toro HDX



*With the kids grown up, Hole and wife Simone now live on Dent Island in a lighthouse keeper cottage*

to replace the tractor/trailer and get a ProPass attachment. I think that would make dusting a lot easier and quicker.

**Favourite spot on your course?** There's a lookout on the par three 14th tee that looks over the southern tip of the island and the 15th hole. Stunning!

**Best advice you have received about being a superintendent.** I was only 26 when I got my first superintendent role in Thailand. It was quiet daunting arriving in a country where you didn't speak the language and had 50 staff to move around. David Abell, who employed me, said don't expect the locals to work like Aussies and don't try and make them. I saw a lot of ex-pats struggle in Asia by not adjusting their management strategies to where they were. I lasted 10 years there on David's advice.

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

Coming back to Australia in 2005, I had missed the whole introduction of OH&S rules and

regulations and the paperwork that comes with it. The younger guys that have come through are probably used to it, but it's something that took me by surprise and still does. As I write this, I just received a note to write up relevant COVID-19 SOPs for machinery, hand tools and a risk register; with only a couple of staff I'd much rather be out on the course.

**What have you worked on personally in recent years to improve your skills as a superintendent?** I hadn't been playing much golf over the last 10 years, with growing kids and a long commute from Airlie Beach. Now that I'm living on the island and have more time to play, I've been experiencing the course more from a golfer's perspective. That helps with some of the decisions we make trying to keep the course as golfer-friendly as we can. It hasn't improved my swing though.

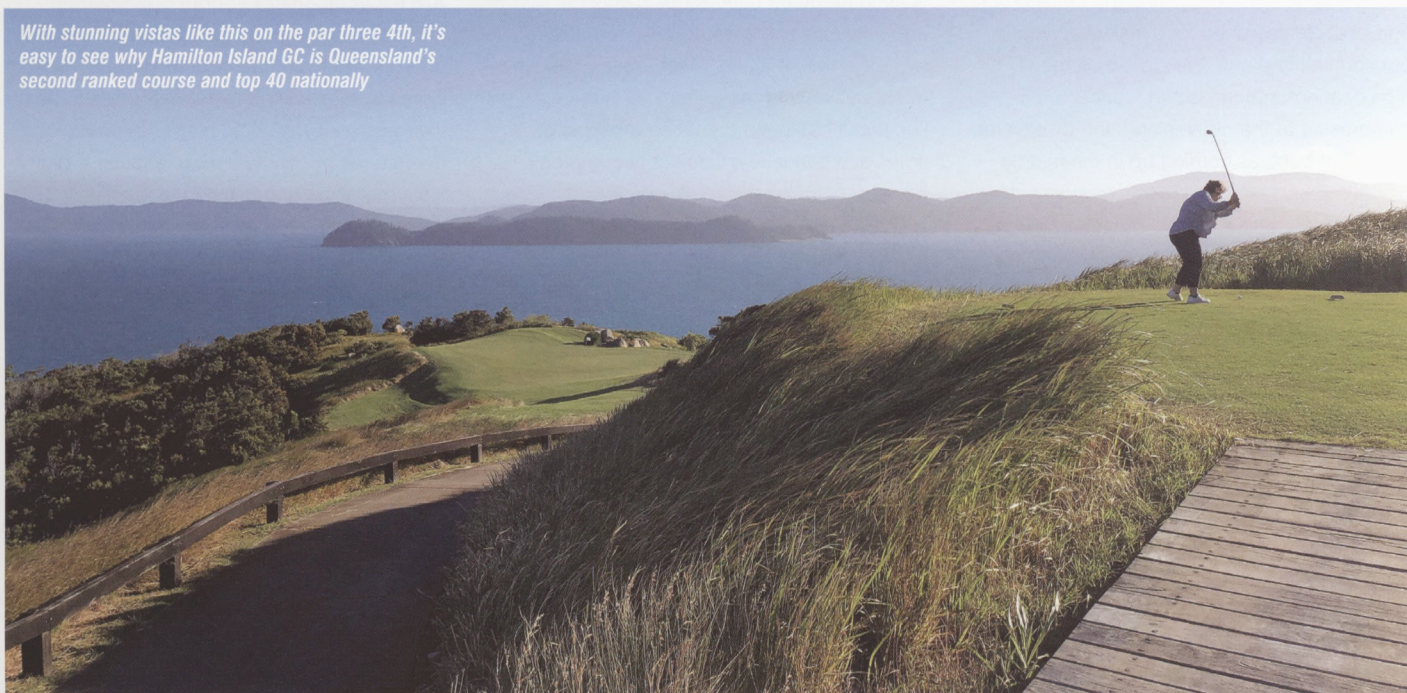
### What gives you the most job satisfaction?

I love showing people the course that haven't seen it before, especially new staff. Last year I was showing a new groundsman around the course. He had never seen a whale before and as we got to the 14th tee we watched about half a dozen of them playing down below us.

**Most pleasing/rewarding moment during your time as HIGC superintendent?** Any day the weather's good; it's a treat to be out on the course.

**If you could change one thing about your job what would it be?** Nothing, I live in paradise...🌴

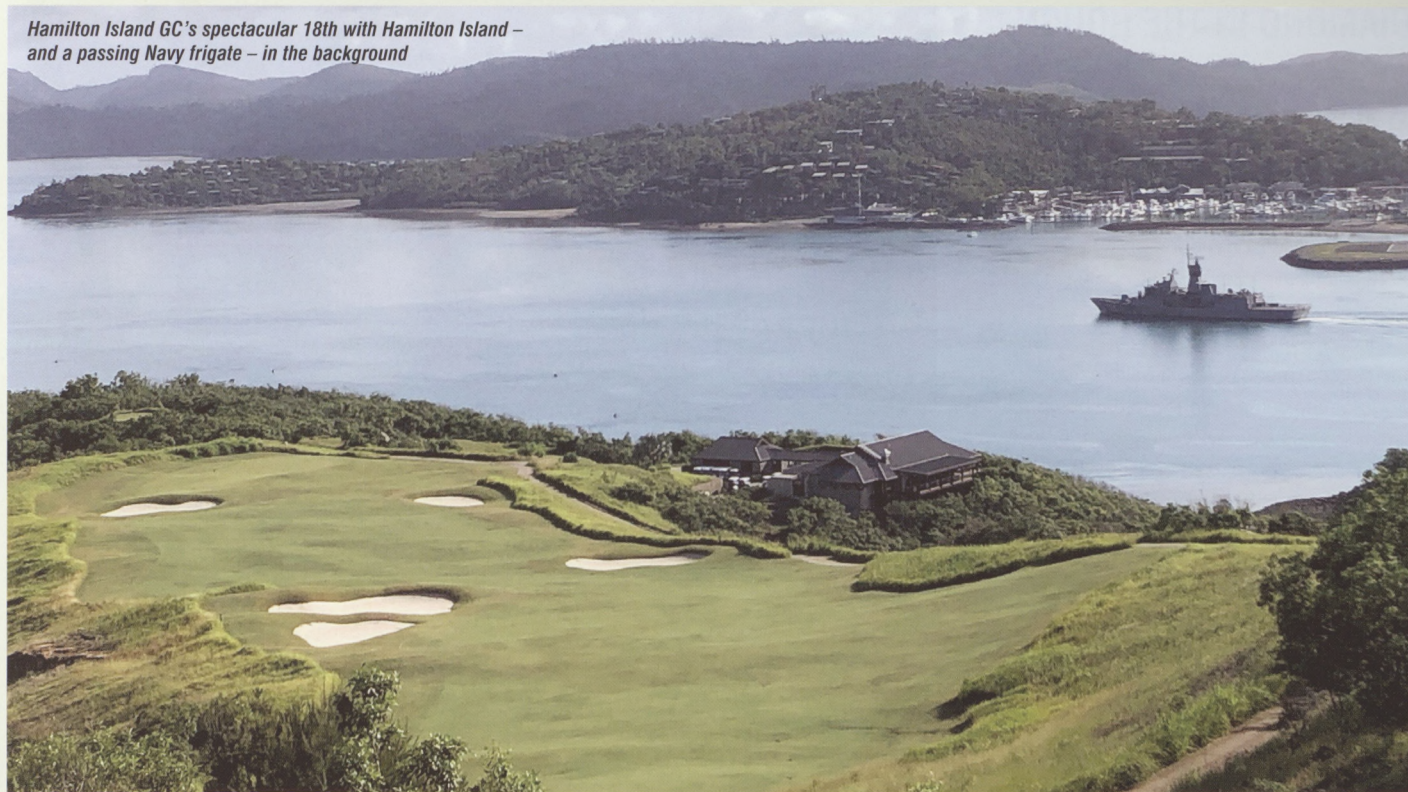
*With stunning vistas like this on the par three 4th, it's easy to see why Hamilton Island GC is Queensland's second ranked course and top 40 nationally*





## AT A GLANCE – HAMILTON ISLAND GC, QLD

*Hamilton Island GC's spectacular 18th with Hamilton Island – and a passing Navy frigate – in the background*



**Course specs:** One hectare TifEagle greens, 30ha Greenlees Park couch fairways and rough. 6140m. Annual rounds 16,000.

**Major tournaments/events:** PGA Professionals Championship which for the last seven years has been played in conjunction with the Vicars Shield and the Hamilton Island Amateur Championship.

**Staff:** Our normal full crew is 12, but due to COVID-19 and the course being closed to guests, many staff were temporarily stood down. At the time of writing I have my assistant Nathan Lindsay and greenkeepers John Myers, Will Neill and Josh Cupples working four days a week. Greenkeepers Luke Thies, Lachy Muncaster, Jeff Wilkinson, Elliot Davies and our mechanic Anthony Cromarty have been stood down until things improve.

**Climate/rainfall:** 1.5m on average.

**Terrain:** Steep rocky terrain, the course runs along the top of the island and is therefore very exposed and weathered. Lots of native grasses, although the vegetation doesn't get very tall, mostly brush box, melaleucas, hoop pines and grass trees.

**Soil types:** The fairways and roughs are on a local rocky loam material which was sieved and reused during construction. They also crushed a lot of excavated rock and used it throughout the course, backfilling trenches, fill etc. Imported sand in the tees and greens.

**Water sources:** Freshwater 240 megalitre dam on the island which collects runoff from the

front nine. It is crucial that the dam fills by the end of the wet season (December-March) and if we are careful that's enough for the year.

**Irrigation system:** Rain Bird decoder system with Nimbus controller. Wall-to-wall coverage with half circles around the fairway edges so no irrigation goes into native areas. Four different pump stations are need to transfer water and deal with distances and elevation changes (lowest point is 40m above sea level and highest 145m). There are nine pumps in total and another two for potable water.

**Cutting regimes:** We cut greens six days a week at 3.5mm, tees three times a week at 10mm, fairways twice a week (or once if Primo is on them) at 12mm and roughs once a week.

**Renovations:** With an almost constant growing season, thatch control is an issue. In the past we have renovated twice a year using East Coast Renovations; Mick and his team have been great to work with, it's a long drive and two barge trips to get their equipment on island. We usually scarify multiple directions, core with 5/8" tines, add amendments and topdress. We haven't gone as hard as we would like as getting a surface back as soon as possible is always the goal having resort guests waiting to play. We have purchased a Pro Core to try and do some smaller, less severe renovations during the year.

We got caught last April with horrendous weather, copping 300mm rain. We opened the course with renovated greens, soggy long

fairways, carts on paths, but the hotel guests were just happy to get out of their rooms and have a hit. We also run a vertidrain over them a month before the PGA event. We can't renovate the fairways because of the rock that's in them, so we use a Terra Rake regularly to scratch them up and flick out some thatch. The tees we scarify twice a year and Vertidrain any struggling ones.

**Major disease pressures:** We have had some ERI and brown patch over the years. We try and get some preventatives out before the susceptible periods, but mostly only curative to reduce applications. Couch mite has been the more recent headache. Combinations of product seem to work okay, but getting the follow up sprays out at the right time is hard with the high winds we get. It's not uncommon to get several weeks of 40-50kph winds and you might only get one day below 20kph to do some spraying. Even the shrouds on the sprayers can't compete. It's almost impossible to follow a programme.

**Nutrition:** Same issues with the wind, greens can get hungry waiting on the right conditions. We try and go often and light but if we can get a foliar out every 10-14 days we're happy. We apply granulars every now and then also and to adjust nutrient levels depending on soil tests which we do every year. We don't fertilise the fairways during the wet season, but apply granulars either side and on tees. Gypsum is applied at least once a year wall-to-wall.



## JACOBSEN'S AR530 A NEW DIAMOND IN THE ROUGH

**A** STMA Gold Partner Jacobsen has started a new era of end-user focused products with the launch of the AR530 rough mower. The AR range has been redesigned from the ground up with the focus on re-establishing Jacobsen's commitment to engineering best-in-class mowers.

To achieve this, customers and dealers participated in one of the largest research programmes commissioned at Jacobsen to establish the everyday challenges operators face. The results focused on features, quality and durability which were crucial elements in the design process for Jacobsen product manager Lee Frie.

"This was really a ground-up redesign of a good machine that we wanted to make better," says Frie. "We wanted to improve the experience of cutting with the AR and the results you get from it."

"We've improved the cut quality as well as the after cut appearance with grass clipping dispersal. We've also improved the traction system, so it does a fantastic job of climbing and side hill performance. The ergonomics are greatly improved and it's much easier for operators to get on and off because you don't have to climb over the units. I think they are going to see a vast improvement."

The new AR models are available with five or seven floating 58cm articulated contour rotary decks, with the AR530 providing a cutting width of 2.3m and the AR730 – which is due to launch in September 2020 – 3.15m. The new TrueDeck design uses smaller decks to follow tight undulations, eliminating clumping, producing a better after cut appearance and making HOC adjustments quick and easy.

To harness the cut quality, the traction system has been enhanced to a best-in-class standard using SureTrac 4WD. This parallel-cross diversion hydraulically-powered traction system, with momentary 4WD differential lock, provides superior traction when climbing difficult contours and side slopes by transferring power from the wheel that slips to the one that grips. Using this system allows the AR to glide over hilly terrain with acute undulations, while giving an even cut by utilising the weight transfer system.

The sound level of the machine has been lowered to make it quieter for the operator and to reduce passer-by noise. Vibration has also been looked at in detail, with reduced vibration levels minimising operator fatigue.

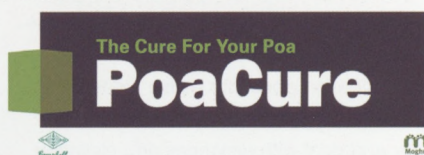
The new and improved Jacobsen AR530 rough mower



The seat position and InCommand II control system have all been adjusted for maximum comfort and productivity, while the new step design makes getting on and off the machine significantly easier.

**For a demonstration of the new AR530, contact your local Jacobsen dealer or visit <https://www.jacobsenbuilt.com>.**

## POACURE REGISTERED IN AUS



In one of the more significant chemical registrations for the Australian turf industry in years, Campbell Chemicals has confirmed the APVMA's full turf registration of PoaCure for the control of *Poa annua* in recreational turf.

PoaCure contains the active ingredient methiozolin that has a mode of action unlike any other herbicide before it. PoaCure is slow-acting, long-lasting and is able to reduce and eliminate *Poa* from turf without disrupting playing surfaces. PoaCure not only works on *Poa annua*, but also on all biotypes of *Poa* commonly found in Australia that have been difficult to control.

"We are proud to be able to offer PoaCure to Australian turf managers for the first time," says Nadeem Zreikat, marketing development manager for Campbell Chemicals which is celebrating its 80th year in 2020. "*Poa* is one of the most difficult weeds to control due to its adaptable nature in Australia and has been an issue in turf management for as long as anyone can remember."

"The results in the independent replicated trials (which started back in 2012/2013) and from the APVMA research permit trials (which started in 2018 with Campbell Chemicals) have been very encouraging, even on high-population *Poa* areas on greens. The other encouraging aspect is its ability to control *Poa* with known resistance, whether it be on fairways, surrounds, sportsfields or greens."

PoaCure was developed by Moghu Research in South Korea in 2007 and Australia joins the likes of South Korea, Japan and the US to have it registered for use. PoaCure can be used on all types of cool-season (except Chewing fescue and browntop bentgrass) and warm-season grass surfaces, including golf and bowling greens, fairways, surrounds and approaches, tees, sportsfields, turf farms and racetracks. Available in a 500ml pack size, PoaCure is available through Campbell Chemicals' network of distributors.

**For more information on PoaCure, visit [www.pocure.com.au](http://www.pocure.com.au) or call Nadeem Zreikat on 0403 110 608 or (02) 9725 2544.**

## INFINICUT THE PERFECT CUT

**T**he new Cub Cadet Infinicut sets the standard when it comes to getting the best potential out of playing surfaces. The all-electric, lithium-powered drive reduces noise and features extend well beyond simply cutting turf with a wide range of available TM System cassettes. The Infinicut is now available with a floating or fixed head and its unique design and flexible set-up delivers precise operator tuning and .10mm increment height-of-cut adjustments.

The new Bluetooth-enabled Infinicut joins an extensive range of Cub Cadet mowers, zero





#### The new Infinicut from Cub Cadet

● Cutting widths – 22", 26", 30" and 34".  
For the opportunity to have a demonstration at your turf facility, contact Mick Holohan on 0477 714 488 or visit [www.cubcadet.com.au](http://www.cubcadet.com.au).

#### IMPALA RE-ENTRY CHANGE

**A**STMA Bronze Partner Turf Culture was recently granted a re-entry period change by the APVMA for its Impala fungicide product (APVMA No: 80146/120870). In summary, the restrictions for mowing and irrigation were removed, while the high exposure restrictions regarding transplantation and hand weeding (previously 16 days) were also removed. The new and now applicable re-entry periods are;

- **Public:** Do not allow entry into treated areas until the spray has dried.
- **Workers:** Do not enter treated areas until the spray has dried. If prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

Turf managers with Impala in stock can download the latest Impala label/leaflet at [www.turfculture.com.au](http://www.turfculture.com.au).

turns and professional turf care equipment. This new model provides turf practitioners even more control over their mowing needs, with features including;

- Bluetooth application control, ability to adjust and save settings to the course conditions, reel speed and walk speed are all controllable through the app.
- Battery life tracking and on board backlapping;
- On board fault code reporting;

- New controllers, battery system, motors and wiring loom – automotive style CAN BUS control – delivering battery to battery communication;
- Two sizes of battery – 30AH and 60AH;
- Transport wheel kit as standard;
- Balanced weight distribution with split rear roller;
- Highly adaptable and adjustable cutting cassette with a full range of compatible TM System cassettes; and

#### INDUSTRY APPOINTMENTS

##### GTS OPENS UP IN THE WEST



**New GTS appointments (from left) Glenn Cross, Steve Jones and John Hume**

ASTMA Bronze Partner Greenway Turf Solutions (GTS) has opened up a Western Australian customer service centre in Perth. **Stephen Jones** and **Glenn Cross** have also been appointed as technical field agents servicing the WA turf industry from the new Belmont location.

"There are 18 GTS technical field agents servicing every state and territory across Australia," says GTS director Chris Chapman. "We are looking forward to establishing GTS in WA, and in Steve and Glenn we have two highly experienced turfgrass professionals who bring a wealth of knowledge to GTS."

The WA customer service centre is located at 15 Belgravia Street, Belmont, WA 6104. Jones can be contacted on 0477 051 713 or email [stevej@greenwayturf.com.au](mailto:stevej@greenwayturf.com.au).

com. Cross can be reached on 0413 877 033 and [glenn@greenwayturf.com.au](mailto:glenn@greenwayturf.com.au).

In other company news, **John Hume** has joined the GTS Queensland team as a technical field agent. Hume can be contacted on 0411 295 843 or email [johnh@greenwayturf.com.au](mailto:johnh@greenwayturf.com.au).



##### CACHIA MAKES MOVE TO BAYER

ASTMA Silver Partner Bayer announced in early June the appointment of **Aaron Cachia** (pictured) to the role of territory business development manager – turf (NSW/Qld/ACT). Cachia, who started his new role in late June, arrives at Bayer with an extensive background in turf management, having most recently spent nearly three years as assistant superintendent at Sydney's Ryde-Parramatta Golf Club. His career has also included time as superintendent at Bexley Golf Club (Sydney) and Toronto Golf Club (Central Coast, NSW).

Cachia will be responsible for providing service and support to agents and end users in NSW, Queensland and ACT and be responsible for developing new business in both the turf and ornamentals markets.



##### JOHNSTONE, BELL JOIN LIVING TURF

ASTMA Silver Partner Living Turf continues to expand its operations with two key appointments announced in May and June. **Chris Johnstone** (pictured top) has joined Living Turf's Queensland team, while **Adam Bell** (pictured bottom) takes the



company's Victorian team to four, joining Mark Prosser, Tim Bilston and Mac Ross.

A bowling greenkeeper by trade, Johnstone has spent the past decade serving the northern Queensland turf market as a sales representative where he has developed a strong business network from Rockhampton to Port Douglas. Living Turf will support him from a warehouse in Townsville serviced out of Brisbane.

Similarly, Bell brings with him a strong network of professional contacts and an intimate understanding of the Victorian turf market. Bell has been serving the Victorian industry as a sales representative for the best part of a decade with a practical background including time at RACV Cape Schanck and Peterborough Golf Club.



# NZGCSA



**A**s I write this, the calendar has just rolled over to 1 June and I take the time to reflect on the past few months. The world has been turned upside down and shaken and the resultant pieces are still taking their time to settle and find a place in the new norm.

On Saturday 21 March, the NZ Government launched an Alert Level system from 1 to 4 (from low to high) and placed us into Level 2 alert in response to the escalating COVID-19 pandemic. Then, at midday on Monday 23 March, the government suddenly announced we would be going into Level 4 lockdown from midnight on 25 March. It was a total lockdown, other than for workers in essential services, and the turf industry was not deemed among that.

At Alert Level 2 golf courses had to remove all flagsticks, close off course toilets, drinking fountains and ball washers and remove all rakes from the bunkers. Clubhouses were shut, course staff ideally had split start and finish times, social distancing of 2m was required and hands were washed, washed, washed and then sanitised continually.

Once the realisation of courses being closed in just two days under Alert Level 4, course staff around the country were in survival mode – cutting as much grass as they could, putting out fungicides, insecticides and herbicides, growth retardants and anything else they could think of that may assist them with a lockdown period of four weeks.

There was the agonising dilemma of whether to keep irrigation systems on or not – what if you blew a main line on day one of lockdown, what if valves stuck for four weeks versus the quandary of what if we don't get any rain over that period and the greens perish. Each superintendent had to make their own mind up as to what they thought was the best scenario for them.

Yes, this was total lock down and we would not be able to set foot on our courses for four weeks. Unprecedented. No history ever before of such. What if our courses were dead a month later? How would we deal with the length and volume of grass that would freely grow over the month without being attended to? And disease, even with having applied a fungicide, could destroy a green if the right conditions prevailed.

Wednesday 11.59pm arrived and New Zealand went into total lockdown. Airports shut. Shops shut. Only essential workers who would provide access to food, medicine,



*After four years as president and eight on the NZGCSA Board, Westown Golf Club superintendent Steve Hodson will be stepping down at this year's AGM*

medical care and other essentials would be able to leave the four walls of their home. Come 6.30am Thursday my mobile started ringing and never stopped until later that evening. The panic and realisation of what we had just entered had dawned upon turf managers, the realisation that they could not attend to their patches of passion for a month.

A lot of phone calls were simply why could they not go to work – surely they would be in a safe environment with no one else around. Some unscrupulous boards and committees were demanding that their course staff get out

comment from me – was it fair we were shut out, what would happen to our golf courses, why were we different from other industries and not staying home, why did we think we were essential, what job losses would there be?

On day one I had a TV interview for one of the sports news stations which was a little daunting to say the least – our turf training certainly does not extend to media! Fortunately, having a face only my mother could love, this was the only TV interview I did, but I did do numerous other radio interviews

*“I am immensely proud of the way NZGCSA members dealt with the COVID-19 challenge, taking a united front and by and large sticking to the game plan until we received the green flag to return to our courses.”* – Steve Hodson

and carry on as normal despite the ban on them doing so. Some were threatened with dismissal if they didn't go to work. I found it unbelievable that in this day and age that some committees and boards still have these dinosaurs running clubs.

My advice in this situation was to get it in writing and signed from the board/committee that they were required to work during this lockdown period, and to confirm that these instructions were against what the government had decreed, against health and safety principles and, finally, totally contrary to the State of Emergency that had been declared. I am not aware of any of those dinosaur bullies committing to paper and signing their future away.

Suddenly, the media had an interest in our golf course industry. All and sundry wanted a

that day and in the following couple of weeks as we fought to get us back to work.

Fortunately, some 17 days later, sanity prevailed and the government agreed to allow us dispensation to return to our courses for urgent upkeep and maintenance of turf, albeit at a minimal level. This was achieved only through some constant negotiating with our voice at the government table, being both NZ Golf and Sport NZ who advocated on our behalf. I will be forever grateful to **Alex Glasgow** and the team from NZ Sports Turf Institute for their updates, advice and personal support to me and the NZGCSA through this challenging period, and of course **Dean Murphy** and the team at NZ Golf.

Looking back now, I can say I am immensely proud of the way our members dealt with the challenge, taking a united front



and by and large sticking to the game plan until we received the green flag to return. The unknown of what lay ahead on return was of concern, but we were lucky with the fine weather over the 17 days of no maintenance and members were relieved with the conditions of their courses.

Growth had been steady but not out of control and we all set about to slowly bring our courses back to pre-COVID-19 conditions. Golfers returned to our courses on 14 May and as I write we remain in Level 2 Alert in the hope that Level 1 is only days away. Only time will tell if the drastic steps of completely locking down the country was the way to go or whether the economic toll as a result will be too much relative to the low number of deaths. This event was unprecedented so either way there was a 'damned if you do, damned if you don't' outcome.

If we were to take positives out of this lockdown, it is that families were able to spend some quality time together, young kids could enjoy having their dads at home to interact with and people generally just seemed to be

a little more chilled. It was a time for many to reassess both their work and home life model and try to figure out a better balance. When golfers returned to their courses, they too were more relaxed than before and thankful to be out and about again. I don't think I have had a time of more compliments and thanks from our golfers than upon their return and long may that continue.

COVID-19 continues to have an impact. We will not be having a turf conference nor Fine Turf Seminar this year which is most unusual and sad, as outside of their educational value they provide a welcome opportunity of catching up with peers and discussing all and sundry, often over the comfort of a beer. Our NZGCSA AGM's are always at these venues as well, so it is likely we will be following the trend and holding our AGM by way of a Zoom meeting. Extraordinary times.

I will be stepping down from my role as NZGCSA president at the AGM after almost four years in that role and eight years on the NZGCSA Board. It has been an absolute

privilege to have been able to assist the industry over this time and I have enjoyed my time with the NZGCSA immensely – great team, great people and great ideas. We have a lot of capable and well-meaning younger members coming through the ranks and I know they will take us successfully into the future.

I'm grateful to have been involved with the inaugural Australasian Turfgrass Conference here in New Zealand in 2018 and the relationships that developed with our Australian counterparts at the then AGCSA (now ASTMA). A lot of good times and memories that will remain forever.

I wish everyone all the best for the balance of the year and with your turf profession going forward. Remember to believe in yourselves and follow your dreams. Be the best you can and remember we only get one crack at this thing called life, so make the most of it. There is no practice run. Take care and stay safe.

**STEVE HODSON**  
**PRESIDENT, NZGCSA**



*The inaugural Australasian Turfgrass Conference held in Wellington in 2018, which brought together Australian and NZ turf managers, will remain as one of the highlights of Hodson's time as NZGCSA president*

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# GCSAWA

**F**irst off, I want to thank **Mark Unwin** and the team at the Australian Sports Turf Managers Association for their communication over the last few months. It was an uncertain and at times confusing period. With JobSeeker, JobKeeper, other rebates, the legalities about laying off staff and cutting hours etc, the links and emails sent and also the courtesy phone calls were very welcome and clear for everyone.

Friday 27 March was the day that most golf clubs here in WA closed and dozens of staff were let go or had their hours slashed. It was the darkest and saddest day that I've seen in the industry. We didn't know how long the closures would be or if we would get to a situation like New Zealand superintendents found themselves in. I didn't know what the future held and I wasn't confident all golf clubs would survive.

The first few weeks saw clubs work alternate shifts with limited staff numbers and hours. Some courses even reduced their staff hours by 80 per cent. But fast forward two months and almost all maintenance departments are operating back at pre-COVID-19 levels with most staff returning to their jobs. Apprentices are being hired and there are current job ads looking for groundsman, qualified guys and mechanics.

As I said, no one was sure what to expect. But I didn't expect most private clubs to have a massive forecasted budget surplus. With most casual staff laid off, JobKeeper covering a high percentage of full-time staff, new members, clubhouse utilities such as electricity, gas and water heavily reduced, cancellation of cleaning contractors and no wasted stock, most clubs are well in front of where they originally were. While no one would want to go through this again, it's good to see clubs come out in front.

Talking to fellow superintendents around WA, one thing was common – they have never been as busy as they were through the COVID-19 period. With all the restrictions across the state and a lot of other jobs shut down, it seemed everyone wanted to play golf. Most private clubs restricted play to members only and with council courses shut down for close to a month, all private clubs saw a nice welcomed increase in new members as that was the only way golf could be played.

Here at Mosman Park GC, we tripled our golf rounds from a normal April. Council courses closed for up to a month, but all staff were retained. Bunker rakes have been removed and pool noodles used in cups and



*Joondalup collected the Metropolitan Golf Course of the Year title at the WA Golf Industry Awards, while its course superintendent Ashley Watson won the GCSAWA Superintendent of the Year Award*

it looks like staying like that for a while longer. Golf was restricted to a maximum of two per group with no practice facilities open and separate carts if you had them, then after a month it went to groups of three. Competition golf was suspended until about mid-May when groups of four were allowed again. Clubhouses remained closed until early June when state restrictions were lifted on licensed premises. Social groups and public golf are slowly being brought back into clubs' diaries.

A couple of courses didn't close at all and the majority of private and privately-owned courses only closed to golfers for about a week. Cottesloe GC (superintendent **Simon Bourne**) took advantage and put the finishing touches on their greens construction programme before opening back up fully to the membership. As of the first week of June they also have just two fairways left on their irrigation install. It was also perfect timing for **Rod Tatt** at Mt Lawley GC who overseeded all their greens with 007 bentgrass.

During this time, WA was split into 12 regions and you couldn't travel between the regions without paperwork and driving through roadblocks. One young superintendent, who has only been at his new club for less than six months, worked in one region and lived in another. With his staff losing hours, the course being busier than ever and the travel time and restrictions, he decided to live onsite for six weeks to keep the course maintained. Many supers sacrificed some of their salary and worked extra hours, but living onsite for six weeks was a big effort. A few groundstaff who had their hours and pay reduced volunteered their time and went into work and helped prepare the course. The dedication of everyone in the industry definitely shined through these last few months.

Perth and the southwest were hit by three fairly significant storms over a two week period in mid-May. While the clean ups added to the workload of already busy crews, the one good thing that came out of it was it meant an early end to the watering season with a wetter than average May.

On 4 June the WA golf industry held an online awards ceremony to honour its leading lights from the past year. The original awards night was scheduled in late March, but had to be postponed due to the COVID-19 pandemic. Instead, event organisers took the event online with the GCSAWA handing out two awards as part of the evening.

Congratulations to **Ashley Watson** (Joondalup G&CC) who was bestowed the GCSAWA's coveted McIntosh and Son-Jacobsen Superintendent of the Year Award. His award was one of two on the night for the club, with Joondalup also taking home the Metropolitan Golf Course of the Year title, edging the likes of Cottesloe and Meadow Springs.

Mandurah CC's **Mitchell Clay** was named the GCSAWA Apprentice of the Year and will now represent the association in the national ASTMA Graduate of the Year Award, sponsored by Toro (*see Graduate of the Year finalist profiles on page 32 – Ed*). A special mention must go to Mandurah superintendent **Neil Graham** who has mentored three apprentice award winners in the last five years. It was also a big night for Bunbury GC winning three awards including Regional Golf Facility and Regional Golf Course of the Year. Congratulations to all winners.

**SHANE BAKER (CSTM)**  
**SECRETARY, GCSAWA**



# TSTMA

It is the craziest of times at the moment and something that we will hopefully never have to experience again. The COVID-19 pandemic has tested us all on so many levels and it is now great to see government restrictions easing here in Tasmania and the state returning to some form of normality.

No doubt, the pandemic has impacted every sporting club or council-run facility at different levels. In some certain cases it provided an opportunity to bring some much-needed construction or renovation practices forward without the impediment of competition sporting events. I have spoken to numerous turf managers of late and here is a snapshot from a couple of them...

- **Steve Lewis** (Royal Hobart GC) has been continuing on with Master Plan works. With restrictions in place, this has allowed the crew to focus on turf establishment of the newly developed holes and practice facility. Steve planned for lower input turf management by applying a growth retardant to greens, tees and fairways to keep the course in acceptable condition under the current circumstances.



*Barnbougle's Bradley Whish-Wilson will represent the TSTMA in the final of the ASTMA Graduate of the Year*

- **Bryan Dunn** (UTAS Stadium) reports it being quite eerie with no AFL and state football fixtures that would normally dominate the calendar. On the upside, however, it has allowed the recently reconstructed playing surface some extra time to mature and strengthen without the pressure of wear and tear.

Down here at Barnbougle the courses were closed which has allowed us to devote nearly all of our labour and resources into the construction of the 'Bougle Run' short course, while doing bare minimum turf maintenance

on the Dunes and Lost Farm courses. With the construction due to be completed on time on 30 June, we can then divert our attention back to where we were pre-COVID-19.

I must also congratulate one of my crew members **Bradley Whish-Wilson** for being awarded the TSTMA Graduate of the Year. Bradley will now have the opportunity to present to the judging panel for the national ASTMA Graduate of the Year Award. (See **Graduate of the Year finalist profiles on page 32 – Ed**).

**Adam Spargo** (UTAS Stadium) is still pinching himself having recently returned from the ASTMA and Jacobsen-sponsored Future Turf Managers' Initiative in Melbourne. Adam encourages any of our aspiring turfies to apply for next year's programme.

With restrictions now lifting slowly we are still keen to hold a significant educational event in either October or November. More details will be forthcoming once we have a date and venue locked in. Until then, stay safe.

## PHIL HILL PRESIDENT, TSTMA

# GCSAQ

It is been fantastic to hear many great news stories from members and their teams throughout Queensland during the COVID-19 pandemic. The industry has truly come together to support each other in such uncertain times. The messaging in Queensland, like everywhere in the world, was changing by the hour and clubs were working hard to respond to the dynamic environment.

As part of the major shutdown of Queensland, clubs with liquor licences were ordered to close to reduce the spread of the virus. Under immediate heavy lobbying from industry groups, including Golf Management Australia and Clubs Queensland, the golf course component of liquor licencing was separated from the clubhouse, allowing golfing activities to return under strict social distancing and hygiene conditions.

Clubs throughout Queensland each responded to the new conditions with different strategies. It was quickly apparent that the digital world of knowledge sharing was providing strength during this time and social media channels became a great way for strangers to work through and create solutions for the industry.

Police and staff members representing the Office of Liquor and Gaming Regulations visited several clubs to ensure that social distancing guidelines were being met. While the primary focus was the clubhouses, visits extended down to the maintenance area in some cases. **Luke Helm**, superintendent at Meadowbrook Golf Club, welcomed the police and took on board their feedback to assist with safety. Police suggested they paint lines to direct people around the pro shop area and putting green as it was difficult with so many people congregating in this area.

**Stuart Campbell** from Maroochy River Golf Club was pleased to retain his entire team even though the club's management decided to close the course for several weeks. During that time Stuart and his crew undertook some drainage projects and wetland rejuvenation.

Not surprisingly, **Matt Holmes** from e-par reports that in this ever-changing regulatory environment they have been busier than ever. They have had many calls from superintendents and also managers seeking guidance on safety and compliance.

Many clubs have taken the opportunity to have their staff on reduced duties undertake

those jobs that often get left behind in busy times, such as performing equipment competencies, reading SOP's and undertaking online training. It has also provided an opportunity to ensure things like PPE and first aid kits are stocked and emergency eye wash and shower units tested.

Several clubs reported that staff were moved from food and beverage areas that were forced to close to the golf course maintenance team in an effort to keep them employed. **Mark Hauff** at Palmer Golf was one such superintendent to benefit, with the extra hands used to complete major landscaping improvements to areas of the course that would have been hard to maintain under normal staffing conditions.

The GCSAQ continues to remind members to be mindful of their team's general well-being, especially their mental health during these challenging times. Remember to ask your staff regularly 'Are you OK?' as mental health may be more important now than ever before. Stay safe everyone.

## PAUL MCLEAN PRESIDENT, GCSAQ



## STA VIC



**S**TA Victoria, like all other associations in our sector, has been impacted due to the current COVID-19 pandemic.

While educational and networking seminars have been cancelled due to the restrictions, among them the July Sports Turf Seminar at the MCG, we are working hard to see if there are opportunities to reschedule certain industry days to later in the year when the situation may allow small gatherings.

We are keeping our members updated with regular communications on social media and welcome any submission from members or sponsors alike to contribute and keep in touch during these times. With the gradual return to community sport now occurring, we can expect the football season to be extended and a slightly delayed beginning to next summer's cricket fixtures in most competitions.

Some STA Victoria sponsors have taken advantage of the Sponsor Showcase series, appearing on our Facebook page and via Mailchimp mailout to members. It is still not too late if you are a paid up sponsor to send Jan some information to post.

As with all businesses, Endeavour Turf Professionals reports it has implemented numerous protocols in relation to social distancing as per government guidelines. The consulting team has been as busy as ever over the last few months and have worked remotely where required.

Lilydale Instant Lawn has continued to trade on through COVID-19 with strong demand for its contactless delivery service. There has been some increase in demand throughout the lock down and they have moved quickly within the business to make sure it can still operate safely for all staff and customers.

Some of the changes implemented are having Lilydale office staff set up and working from home, modified operations on farm – everything from lunchroom usage, to shared equipment and machinery cleaning – Zoom meetings between the three production sites and daily temperature checks. Lilydale is busy and adjusting but very happy to have been able to keep all staff employed and maintain its end of the supply chain to the thousands of tradies working through.

## GRADUATE OF THE YEAR

STA Victoria was very excited to receive three nominations for the 2019 Graduate of the Year Award. It was a difficult task for the interview panel to choose a winner as all three



PHOTO: COURTESY OF CITYWIDE

**Jayde Robson will represent STA Victoria in the national Sports Turf Graduate of the Year Award**

nominations were worthy of going through to the finals. Representing Victoria in the national Sports Turf Graduate of the Year Award will be **Jayde Robson** who studied at The Gordon and who now works with Citywide, Melton.

Jayde describes herself as a country girl who loves working outdoors and in different locations. She works as part of a four-person team maintaining over 50 hectares of irrigated turf surfaces made up of a variety of sporting facilities and high profile sites. As well as mowing, they undertake all renovations, chemical applications, turf upgrades and irrigation repairs. Jayde just happens to work with 2019 award winner Nathan Andrews and was nominated for the Women Working in Horticulture Scholarship. She was also a finalist in the Gordon Awards for Excellence – Environmental Apprentice and is currently studying a Certificate III in Horticulture at The Gordon.

## DIPLOMA SPONSORSHIP

STA Victoria is also happy to announce two applications were received for the Diploma Sponsorship. This year, being certainly the most unusual and challenging we have faced, it was decided to accept and sponsor both students. Congratulations go to **Dan Nichols**, who is studying at Holmesglen and working at Latrobe City Council, and **Tyler Stanner-Farley**, who is studying at Melbourne Polytechnic and working at Hume City Council. For more information on this sponsorship contact Jan via email [vic@sportsturf.asn.au](mailto:vic@sportsturf.asn.au).

## TRANSITION TRIAL

STA Victoria is supporting the ANTEP 5 trial undertaken by the Australian Seed Federation (ASF) and is running a herbicide trial in conjunction to compare the various chemical options available to assist in transitioning out ryegrass from a couch base.

The trial site was established at Evergreen Turf in Pakenham by the team from AGCSATech, with the surface oversown on 21 April. Rabbits caused some issues initially, so a rabbit-proof fence around the entire trial area has been installed. The area has been divided into plots with eight treatments replicated three times, including the control which will be maintained as couchgrass. Wear has been avoided for three weeks to allow the seed time to establish. We look forward to bringing you more updates on this work. **(For more on this and the ANTEP 5 trials, read Bruce MacPhee's article on page 36 - Ed)**

## COMMITTEE, STA VICTORIA

### ON THE MOVE...

**KYLE BROCKLEY:** Appointed assistant superintendent Parkwood International, Qld.

**ROD COOK:** Departed as superintendent The Grand GC, Qld.

**GLENN CROSS:** Resigned as superintendent Carramar GC to move into a sales role with GTS's new operation in WA.

**PHIL MOYLAN:** Departed as superintendent Gosnells GC, WA to take up a position at The Cut, WA.

**SHAUN QUINSEE:** Resigned as superintendent Hillview GC, WA.

**CHRIS REGAN:** From assistant superintendent to superintendent Shoalhaven Ex-Servicemen's Club following the retirement of Tony Webster.

**TOM TRISTAM:** From assistant superintendent Mt Lawley GC, WA to superintendent Carramar GC, WA.

**TONY WEBSTER:** Retired as superintendent Shoalhaven Ex-Servicemen's Club, NSW after a total of 39 years in the turf industry, including more than 20 years at Shoalhaven.



To say NSW superintendents and the golf industry have been through some extremely trying times over the past 12 months would be an understatement. Severe drought through spring and summer led into significant floods at the end of summer and then came the COVID-19 pandemic.

Here in NSW, golf was only shut down for one day, but on the return to play strict rules applied and as we know the rules were changing by the hour. On top of rumours and predictions, it made for a very stressful period for many course superintendents and course Staff. Some courses took action immediately to reduce staff to a bare minimum, while others made the decision to split crews into half with a 12-hour, day-on/day-off routine. I believe there was no right or wrong plan, it was totally an individual case by case scenario.

As I write this report golf has returned to groups of four with still only one per cart. On 1 June clubhouses were given the go ahead to open with a maximum of 50 people at one time, table service only and strict hygiene rules in place.

To date there have been no horror stories reported to NSWGCSA of courses closing the doors for good, but no doubt many, if not all, have taken a dramatic financial hit. I know my club at Eastlake was down \$40K in April for social fees but up \$27K in members comp fees as members came out of the woodwork to play, meaning seven days a week competition was booked out.

On behalf of NSWGCSA members, I would like to thank the Australian Sports Turf Managers Association and CEO **Mark Unwin** for their tireless work through this pandemic. The communication has been second to none and it is much appreciated.

The NSWGCSA Board has now moved to Zoom online meetings which has allowed board members that are six hours away to attend without the troubles of travelling and being away from their courses.

The first meeting was held on 25 May with great success. At this meeting the Board made the decision to postpone all NSWGCSA events until at least November which is when our Rube Walkerden Trophy event and

AGM are planned at The Lakes Golf Club (superintendent **Anthony Mills**). The Board has also decided to employ the services of a social media and website professional.

Work is continuing on the report to present to water authorities in relation to the use of potable water against each level of water restriction. **David Somerville** (NSWGCSA vice-president) and **Simon Cooper** (NSWBGA) are working with a water consultant to write up the proposal and we hope to have more information on this in the next edition. The Board will be meeting again in July to discuss any changes to the restrictions and at that time make decisions regarding any planned events.

Finally, we wish NSWGCSA life member **Peter McMaugh AM** all the best after he suffered a heart attack in April. In Peter's own words "it hasn't left much residual damage" but we wish him a speedy recovery and look forward to seeing him out and about once COVID-19 is under control.

**NATHAN BRADBURY (CSTM)**  
**PRESIDENT, NSWGCSA**

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# Castaway

- a life in lockdown



*The Kiwi version of Tom Hanks' famous friend. A rugby ball left behind in the park made the perfect company for Barber during isolation. He was duly named 'Jeff' Wilson, in honour of a famous All Black rugby player*

*The COVID-19 pandemic has tested the mettle of all, but for Leo Barber, the dual superintendent/general manager at New Zealand's Paraparaumu Beach Golf Club, it took on a somewhat different dimension after returning home following the FTMI in early March.*





*Home away from home. A tent pitched in the far corner of a park among the foothills of a local mountain range provided Leo Barber with the necessary shelter from the elements and a place to rest the head each night*

and some freedom from work and family sounded pretty appealing at this early stage. A plan was put in place with the family as I boarded the plane in Melbourne so as to manage the potential risks when I returned – I was to commandeer the main bedroom and ensuite in the family abode, the kitchen would be off limits and distance would be maintained at all times. I had wi-fi, space, prepared meals and it all sounded manageable, if not more than a little advantageous.

By the time I landed in Wellington, however, the world had certainly changed and the reality of what I faced hauntingly echoed the sentiments of that earlier message from my friend. This was a country that was taking COVID-19 very seriously and acting early. While the Government advised that quarantining would be self-managed, society was quickly maintaining the enforcement and should I step foot back inside my own house, several emails received explained my kids would no longer be welcome at their school and my wife would be unable to work alongside her team. You got the immediate feeling that you were being held to a higher account than Government decree and, despite being symptom free, it was being assumed by all that you would be carrying the disease.

As I collected my vehicle and drove from the airport, I started heading to... I didn't know where. A ute that would normally be filled with music was a giant speaker for my phone as I hurriedly made calls searching for a Plan B. Each potential alternative to heading home impacted in some way on someone else.

As I neared my home in Paraparaumu, I made one last phone call and out of options I instructed my wife to prepare some camping equipment – a tent, a small cooker, sleeping bag and some food – and leave them on the driveway for me to collect. As we say over this side of the Ditch, I was going to “go bush”.

It was a surreal feeling driving into the small cul-de-sac where I reside and while neighbours peered from behind their windows and my own family stared at me through the safety of glass, I collected the possessions, mouthed that I loved them and headed, quite literally, for the hills. I had Googled and found a simple remote campsite just less than an hour north. This wasn't the kind that would have a kitchen, ablution block, swimming pool or games room as you might be picturing, rather this was remote enough not to have mobile phone reception but salubrious enough to offer one simple long drop toilet where I could take care of ‘business’. I found the furthest patch of grass in the park and pitched my tent. Honey, I was home!

I was in Melbourne attending the ASTMA and Jacobsen's Future Turf Managers' Initiative in a mentor capacity when New Zealand's Prime Minister, Jacinda Ardern, announced border restrictions and a requirement for all inbound travellers to quarantine for 14 days as part of the country's efforts to contain the rapidly spreading risk of COVID-19. “Be prepared to be treated like a

leper” was the simple but frank text message received from a friend as I digested the press conference and pondered the implications for my return travel back to New Zealand.

The guidelines were pretty clear – stay at home and social distance – and the responsibility for compliance largely sat with the individual. If I was being honest, the thought of a few weeks' of rest and relaxation





Despite the challenges of sleeping in a tent, living out of my ute and surviving on care packages from home (which were dropped at agreed locations), the real challenge was leading my team back at the golf club during this period of crisis. The situation was literally changing by the day as the business of our club went through various stages of shutdown alongside the rest of the country in a very short space of time.

Planning sessions held remotely, board meetings dialled into and emailing off the phone all offered degrees of connectivity, but being in an isolated world the most difficult aspect was having very little feel for how things were on the ground, sensing the vibe of the membership and how my staff were coping in reality. It is one thing to delegate and direct from a command post, but my style is more akin to that of an old-fashioned leader who enjoys being in the trenches and right now was the time to be going over the top.

Five days into my own personal quarantining, the Prime Minister made a further announcement with the unprecedented decision to effectively quarantine the whole country. New Zealand was about to enter the world I had been living in, albeit from the relative comfort of their own homes, with a nationwide lockdown. Still symptom free, we made a family decision and after seven days 'living rough', I packed up my tent and headed home. Schools were now shut down and everyone was working from home unless deemed essential.



*Masterchef iso-style – two-minute noodles cooked on the roadside where there was phone reception*

Surprisingly, unlike many other countries, the maintenance of sports turf was deemed non-essential by the NZ Government which meant absolutely no maintenance could be carried out during the lockdown. Another day and with another plan, we prepared for the worst during the 48 hours we were afforded to prepare and having applied a growth regulator and fungicide to the greens and given the course a final mow, we closed the gates and headed into our socially-isolated bubbles. It was only after three weeks that our status as sports turf workers changed to 'essential' and those gates were opened marginally with just two staff members heading back in and only then allowed to undertake very minimal and only urgent maintenance.

We were fortunate that it was mid-autumn and not the beginning of summer and despite no maintenance at all, the course held up very well. The treatments applied prior had worked and even with such a small crew and hours of work limited, we had the course ready for

*Although unmaintained for three weeks, the Paraparaumu Beach course enjoyed the rest and showed just how resilient turf can be*

opening as New Zealander's were allowed back out of their houses after five weeks.

During my time out in the hills and away from the modern distractions of life, I decided to keep a journal, sharing it each day on social media after a short drive to the top of a hill to find reception. It was largely about the lighter side of life and the modern hardships I encountered while camping that I am sure my grandparents, who lived through WWII, would find laughable. Each day I tried to conclude my musings with a thought and this is an excerpt from my 'Day 14' entry which I am sure will be just as relevant now as I hope it will be by the time you read this and we find ourselves hopefully well into the phase of trying to return to normal.

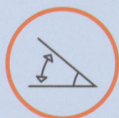
"Pandemics are a hotbed of fear. Fear we might catch it, fear we might spread it, fear for our families, fear for our clubs, fear for our jobs... it can be overwhelming. I always enjoy finding inspiration from great speakers and a recurring theme from some of the best I have listened to is that whilst fear can be consuming, the very best in their individual disciplines, whether it be sport or business, learn to process that fear by firstly acknowledging that it's a perfectly normal emotion and then looking for ways to quickly overcome it. That's my goal for coming out the other side of this anyway and I'm sure many will be thinking the same. Golf has a wonderful opportunity in a society that will be correcting post-COVID-19 and we should aim to be known as leaders that were calm, measured and helped steer our clubs through."

## LESSONS LEARNT FROM ISOLATION

- Have a plan, but then be prepared to adapt it quickly should the situation change – and expect it will.
- Acknowledge fear, but don't let it consume you. Aim to overcome it quickly and develop strategies to do so.
- As uncertain as you will be feeling right now, your neighbour is feeling the same and so is the superintendent up the road. We are all in this together and don't be afraid to be the one that reaches out first.
- Determine individually how you wish to be remembered and then adopt a calm and measured approach. Try and be remembered for being the leader that steered the club successfully through this period.
- Be kind.....full stop! What gestures can you perform right now as an individual to make someone's burden lighter or their wellbeing brighter?
- Take time for yourself. As leaders we are adept to thinking about others, but each day we should be allowing a moment to think about ourselves. Read a book, watch a show, take a walk – in simple terms, let your mind escape.
- While we have been encouraged to this point to socially distance in a physical sense, try and remain socially connected. There are so many apps available now where you can do both, so make sure you book that catch up with friends and family. The benefits from a familiar face or a friendly voice should not be underestimated and as the situation returns to normal and the appropriate advice from the Government determines that it is safe to do so, we should look to become more present in the lives of those that are close to us just as we did pre-COVID.



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