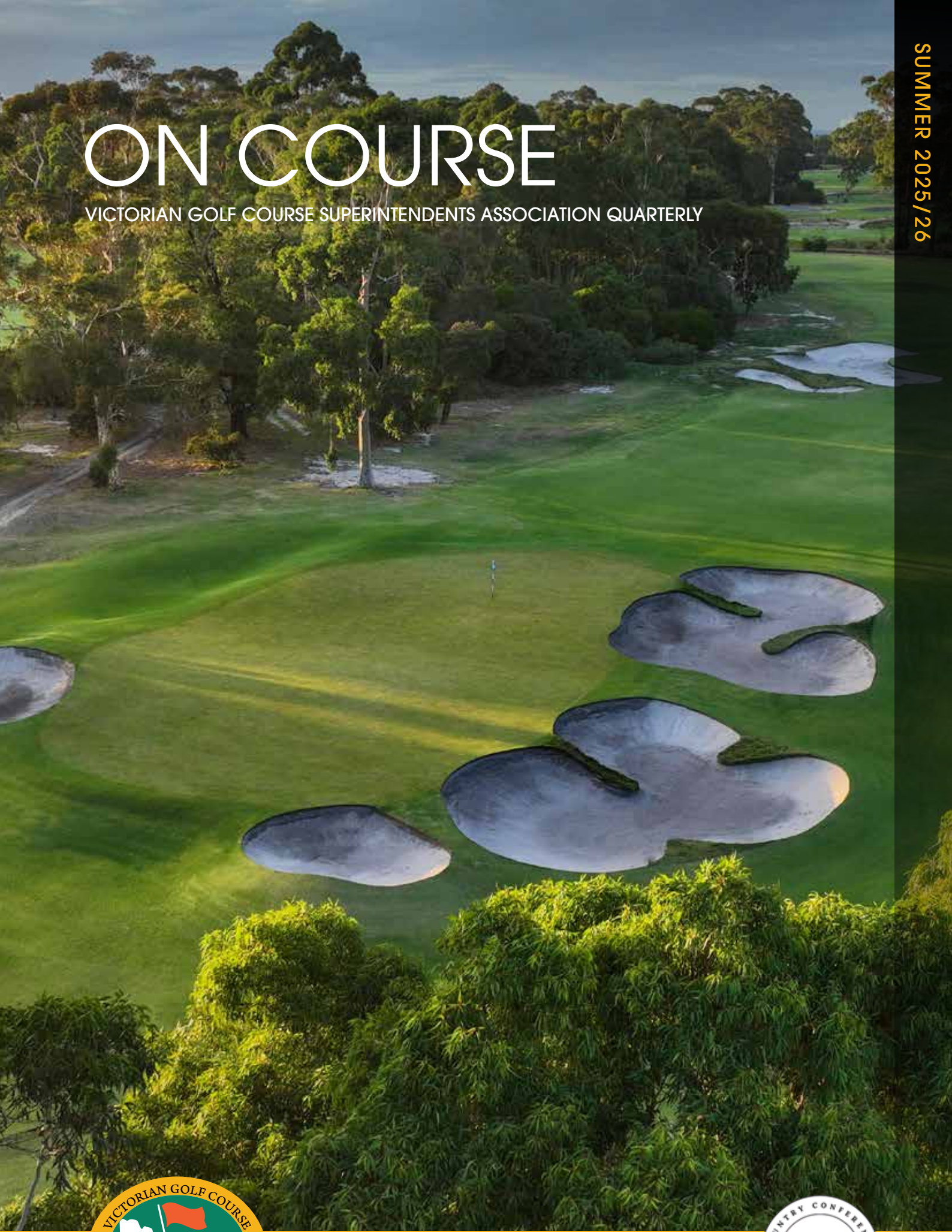


ON COURSE

VICTORIAN GOLF COURSE SUPERINTENDENTS ASSOCIATION QUARTERLY



ERI Project Report | Meet our international guest speakers



WE'VE UNLEASHED ANOTHER MONSTER FUNGICIDE

Anthracnose
(*Colletotrichum
graminicola*),

Brown Patch
(*Rhizoctonia solani*),

Dollar Spot
(*Sclerotinia
homoeocarpe*),

Fusarium
(*Fusarium nivale*,
Microdochium nivale),

Grey Leaf Spot
(*Pyricularia grisea*),

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

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



Tribeca Fungicide

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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ON COURSE

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COVER IMAGE: The Metropolitan Golf Club (Photo: Gary Lisbon)

UPCOMING VGCSA MEETINGS

Tuesday 3rd March 2026

Education meeting, The Metropolitan Golf Club

THANK YOU TO OUR 2025 MEETING SPONSORS

The VGCSA would like to thank the following trade companies for their support.



PRESIDENT'S REPORT

Adam Lamb



After what we hope has been a positive spring season for everyone across the state, and perhaps a welcome boost in motivation following another winter, summer now feels just around the corner. In fact, for some, it may be much closer than others. With many in Melbourne spending plenty of time on the end of a hand-watering hose, it certainly feels like summer has started... albeit without the high temperatures. As I write this report, some decent rainfall has just been recorded to close out October and early November is also looking promising for some much needed follow up rain.

Welcome

We're pleased to report that the VGCSA has carried its strong momentum through to the end of the year, wrapping up our final meeting at the Riversdale Golf Club, kindly hosted by Superintendent Barry Proctor. More details on this meeting can be found later in the magazine under the meeting minutes.

It was also a pleasure to attend the Victorian Golf Industry Awards night in late October at the Southern Golf Club. Leigh Yanner was presented with the 2025 VGCSA Superintendent Recognition Award and spoke superbly about his passion for the job and the pride he takes in presenting such a remarkable facility. Zac Amer was also recognised with the 2025 VGCSA Apprentice of the Year Award. Both delivered excellent speeches and represented our industry with great professionalism and enthusiasm.

It was great to see Graeme Grant inducted into the Victorian Golf Industry Hall of Fame, certainly a deserving recognition of his career. Graeme elevated the standards of turf management throughout the 1980s-90s, particularly through his restoration work at Kingston Heath and his efforts and leadership in *Poa annua* management. He was

also celebrated for his many golf course design contributions over the years.

Looking ahead, the VGCSA committee has secured a fantastic program for the 2026 meeting calendar, which will again present various specialised workshops. This includes the much-anticipated joint meeting with the NSWGCSA at Corowa, which has attracted strong interest from both Superintendents and sponsors. The confirmed meeting dates and venues are:

- Education meeting, Tuesday 3rd March, Metropolitan
- AGM, Tuesday 28th April, 13th Beach
- Course Staff Education meeting, Tuesday 2nd June, Keysborough
- VGCSA - NSWGCSA Country Conference, Monday to Wednesday 3rd - 5th August, Corowa
- Education meeting, Tuesday 8th September, Huntingdale

A huge thank you to the clubs that have generously agreed to host our events in 2026, and to the sponsors who continue to support these initiatives and our Association.

Wishing everyone a safe and successful season and we look forward to seeing you soon.



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FROM THE SUPER EDUCATION MEETING

Tuesday 3rd March 2026

Background

In 1957, the state education department compulsorily acquired the land which housed holes 12-16 of the original Metropolitan routing to build what was the Oakleigh Technical School. The parcel of land ran in a southerly direction, with only Centre Road separating the Metropolitan and Commonwealth Golf Clubs. Following the compulsory acquisition, the golf course had to be rerouted to incorporate the newly purchased land, and the original routing was altered permanently, most notably on the back nine holes.

The Club engaged the services of American golf course architect, Dick Wilson, to design a new routing that incorporated the new land. Holes 6, 7, 10, 11, 12, 13, 14, 15 and 16 were changed during this work. Unfortunately, due to Wilson's ill health, he was unable to be on site during the construction, which was undertaken by a civil construction company unfamiliar with golf course work. Consequently, much of the finer architectural detail, such as bunker shaping, scale, balance and subtle land movement never made it from Wilson's plans into fruition.

Stage 2 - Back nine

Logistics and scheduling

Following the front nine construction work during summer 2023/2024, work on the back nine commenced in November 2024. The greens reprofiling was undertaken identically to the front nine (see VGCSA *ON COURSE* Spring 2024). The architectural changes were significantly greater on the back nine than on the front nine, due to the land acquisition in the 1950s, as well as the need for drainage to be installed due to the heavier

nature of the back nine soils. Crafter and Mogford Golf Strategies had identified the very best characteristics of the original holes and sought to incorporate them throughout the entire layout.

To kick off the project, the 11th hole was taken out of play and the 19th hole was introduced into the routing, so that 18 holes could remain in play. Two weeks later, the entire back nine was closed for three months, whilst the front nine remained in play for member and limited guest play.

The back nine being further away from the maintenance facility and sand staging area added further logistical complexity and time to the already tight schedule. Getting machinery across the course without interrupting golf or damaging any turf was a challenge, mostly navigated without issue, save a few minor ones. The Club is fortunate to have good boundary access tracks

and McMahons, who conducted all of the earthworks and drainage work, did a great job in getting large-scale machinery around the site without making too much mess and interfering with golf being played on the front nine. The water truck became one of the most important pieces of equipment to keep dust suppressed and the neighbours happy (most of the time).

Turf

Learning from the front nine work and, given the tight schedule and increase in scope of work, the decision was made to use the 12th hole, which was the largest area of disturbance, as a couch nursery for most of the turf requirements. Following the completion of the earthworks on the 12th, deliberately positioned towards the end of the schedule, the entire fairway was

continued overleaf





Between the course team and Vic Lawn Layers, headed up by Richard Obee, 3.5 hectares of turf was lifted, relaid and reused with the remaining 1.5 hectares purchased as maxi rolls and installed by Australian Seed and Turf. This excludes one hectare of SR1019/SR1020 bentgrass, which was handled diligently by the Metro course team. Each green was sod cut, the turf picked up, laid on to tarps on the fairways and then picked back up again and relaid on each green following the completion of earthworks and rootzone sand installation, with the team effectively lifting and laying two hectares of bentgrass.

Building on the lessons learned from the front nine work, it was decided not to introduce the 'Metro Mix' from the green nursery into the greens in lieu of turf lost during harvesting, or turf that was contaminated with couch grass or *Poa annua*. The nursery sods used in the work on the front nine had a higher requirement for nutrition and moisture than the existing SR1019/SR1020, likely due to the difference in maturity, which had created some management challenges. Instead, the 'Metro Mix' was used to re-establish the collars.

Architectural Changes

Of the 43 bunkers on the back nine, 39 have been altered to varying degrees. Significant changes were made to holes 12, 13, 14 and 16. Fairway bunkers were rebuilt and reconfigured entirely on holes 12, 14, 15, 16 and 18 by Shane Newman from Newscope Turf and Civil. New

then reinstated using maxi rolls. For the larger-scale turf jobs on the 16th (6000 m²) and 17th (4000 m²), Australian Seed and Turf were engaged to use their turf harvesting machine on the 12th hole to cut and palletise the turf, ready for laying. Interestingly, the 12th fairway was a mix of Santa Ana and Wintergreen couch, with the Santa Ana clearly more aggressive and becoming the dominant grass. Metropolitan has an interesting mix of grasses, with fairways on holes 1-9, 17 and 18 being Wintergreen couch. The remainder of the fairways and all tees, surrounds and transitions, and 100m in on the 1st and 18th holes, being Santa Ana.



teeing ground was added on the 13th, 16th and 18th holes.

Without question, the 12th, 13th and 16th holes involved the most amount of work. The 12th hole has been rebuilt entirely, with two fairway bunkers on the left in place of the old left and centreline bunker and two bunkers filled in along the right side, with one remaining. The green has been brought closer to the tee to create a sense of space and an increase in scale around the green. This also shortened the hole, making it almost drivable in the right conditions. The green pitches from front to back in a similar fashion to the old 12th, before the hole was changed in the early 2000s, albeit with a different orientation.

The 13th hole has had a checkered history. The old hole was reoriented to play further away from the boundary in 2005 and has been modified on several occasions since, to strike the delicate balance of being challenging for the better golfer while still being playable for all.

The decision was made by Crafter + Mogford, with encouragement from the Greens committee, to add some variety to the set of par 3s and create a shorter hole. The 13th hole now plays a maximum of 125m



down from the previous 146m and sits across the golfer rather than straight up and down like the old hole. Bunkers protect the right and centre right of the green, and a ridgeline separates the front two-thirds from the back third.

On the 16th hole, the poor quality vegetation was cleared along the right side of the hole to create a clear view from the white tee to the green. The green was raised 400mm to give golfers a clear view of the green's surface. The course architects' aim is to tempt golfers into overestimating their own ability and going for the green! Two short fairway bunkers were removed, and the remaining four bunkers were rebuilt with some of the bunker movement drawn out into the fairway to add interest to what was previously a flat fairway.

40,000 indigenous grasses and shrubs were planted on the back nine to complement the architectural changes and to have the vegetation style on the back nine match that of the front nine. The Club is committed to purchasing the same number of



plants in the coming twelve months to continue improving the out-of-play areas.

Staff

It was a massive undertaking for the course team here at Metropolitan. The backbreaking work of lifting and laying turf, as well as building bunkers and bunker edges, was conducted through the hottest part of the year. Their attitude was exemplary throughout and the project would not have been as successful as it was without their hard work and

attitude. Second to the water truck, the Makita battery-operated radio was one of the most utilised and important pieces of equipment during the project!

Thanks also to our partners and contractors, including McMahons, Newscope Turf and Civil, Think Water, Australian Seed and Turf, and Vic Lawn Layers, for their flexibility, can-do attitude and hard work throughout the project.

John Mann

Course Superintendent

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MINUTES EDUCATION MEETING

Tuesday 9th September 2025

Riversdale Golf Club

Apologies

Brett Balloch
Casey Johnson

8am Arrival and registrations

8.25am Welcome

President Adam Lamb welcomed all attendees, including guests, life members, ASTMA and trade representatives, and provided the day's schedule prior to introducing the first guest speaker.

8.30am

Live webinar with Dr Philip F. Harmon, Professor of plant pathology and extension specialist

Topic: Warm-season turfgrass diseases

Dr Phil Harmon's research focuses on diseases of warm-season turfgrass species and developing efficient disease management strategies. His extension work provides rapid and accurate diagnostic services, offering practical, research-based solutions. He has served as an assigning editor for *Plant Disease Management Reports* and as Associate Editor of *Applied Turfgrass Science*.

Session key points

- An overview of the Plant Diagnostic Centre (UF IFAS Plant Pathology).
- The diagnostic process - identifying pathogens versus environmental stress factors.
- Misdiagnosis challenges and tools such as moist chambers (25°C incubation, 24–48 hour results), water agar, qPDA, PART, TM, and TM+.
- Discussion of host varieties and recent diagnostic 'hot lists' (2012–2019; 2020–2021).

• Case studies:

- Leaf and Sheath Spot - showing graphs and fungicide trial results.
- Pythium Blight - with microscope images, agar medium examples and nematode interaction graphs.
- Take-All Root Rot - with photos, graphs of fungicide trial results, and cultural practices (stress reduction, mowing, fertiliser, pH testing and manganese inputs).
- Integrated disease management, demonstrating fungicide efficacy depends on disease stage, with prevention often more effective than curative use.
- Trial design - small plot, randomised block with untreated controls to ensure accuracy.
- Overview of turf fungicides in the US, including newer DMIs and products such as Serata (Picarbutrazox, FMC).

Q&A

Adam asked if disease sample submissions are increasing. Dr Harmon confirmed a significant rise since 2001, particularly post 2007, due to improved performance and greater awareness.

Adam thanked Dr Harmon and closed the session.

9:30 am

Presentation with Sports Turf Agronomist, Michael Robinson (STRI Australia)

Topic: VGCSA - STRI Wetting Agent Trials

Michael Robinson has over 38 years of experience in turf research and consultancy across Australia and internationally. His expertise includes pesticide and fertiliser trials, turfgrass variety testing, management techniques, soil/water analysis and benchmarking of sporting surfaces.

Session key points

- Purpose – to evaluate wetting agents as essential tools for turf management in Victoria.
- Trials were conducted at Cranbourne, Waterford Valley and Yarra Yarra Golf Clubs.
- Trial details:
 - Duration five months.
 - Plot size 2m x 3m.
 - Seven wetting agents tested.
 - Four applications at monthly intervals, applied at label rates and watered in (3–5mm).
 - Clubs managed treatments under a standardised protocol.



- Assessment criteria:
 - NDVI (turf performance).
 - Soil moisture sensors.
 - Surface firmness (Klegg hammer, rounded head 80–120).
 - Turf quality, dry patch incidence, water droplet penetration time (WDPT) and soil repellency.
- Assessments were conducted from 30 October - 19 March, with the final assessment six weeks post last application.
- Results Summary:
 - Clear differences between products in NDVI, soil moisture, firmness, and dry patch prevention.
 - Water repellency and WDPT tests highlighted product efficacy in reducing hydrophobicity.
 - Overall, wetting agents provided measurable improvements in turf performance across the three sites.

Adam thanked Michael, noting that results have been published in the VGCSA Spring *ON COURSE* Quarterly issue.

10am Morning Tea

10:25am

Brandt - John Deere presentation

Topic: Op Centre Pro Golf

Max Otten (Brandt) opened the presentation by introducing Corey Clark (John Deere) and Brenton Clarke (Settlers Run GCC).

Session key points

- Corey Clark gave an overview of their program and its benefits as an all-in-one platform for labour tracking, machinery and servicing tracking, chemical applications and inventory.
- Brenton Clarke explained that they have been using the platform since 2023. Prior to this they were writing everything on a whiteboard but wanted a more professional and holistic way of managing the staff, fleet and labour, as well as the ability to track machines in real time on course and show where productivity could be improved.
- Corey explained that all machines have attached modems which give alerts back to the ops centre with

working time, transport time and idle time. Brenton added that it was an efficient way of reporting to committee at more in-depth levels, noting where their time is spent and accurately being able to portray the productivity loss when a busy field of golf delays your machinery.

- Corey showed attendees a GPS map of Riversdale, with all turf areas sized in hectares. This included real-time tracking of their spray unit and the route it was taking around the course that day, as well as application uniformity.
- Brenton demonstrated the labour board and the in-built calendar which showed split-shift rostering for their greens renovations as well as annual leave so you can easily roster staff and assign tasks knowing exactly when your staff are available. Further outlining the labour board, Corey explained that staff can add notes via their phone to the app, about the task they are assigned to or machinery that they are using. In working together, the mechanic can also create a service and maintenance schedule, including parts required for orders.

Q&A

Brenton was asked if there was any pushback from staff, perceiving the amount of tracking as 'big-brother'. Brenton explained the goals of using the system to the staff, and that it was simply to make all staff, including himself, more accountable and operations would improve through the use of this software. He can then go to committees and accurately



showcase where labour hours are spent and lost, making an easier case for machinery replacement, or additional machinery and staffing which is required to achieve the standards and goals of the golf club.

In conclusion, Corey Clark stated that the next advancement of the software will be working alongside new technologies in autonomy through the use of the GPS mapping.

10.55am

Q&A with Course Superintendent, Barry Proctor

Adam interviewed host Superintendent Barry Proctor preceding the course walk.

Barry Proctor was born in Loch Lomond, Scotland. As a child he played golf and enjoyed the game, but wanted to be a farmer like his grandparents. He was asked, "Have you ever seen us take a holiday?" Replying he hadn't, they suggested he follow a different path. This is where he first thought of turf management as a career. He completed his apprenticeship in Scotland and then worked at the famed, Loch Lomond GC and St Andrews GC. Barry then did a stint in the USA working at Merion

continued overleaf



GC and Shinecock Hills GC before catching a flight to Melbourne for what was supposed to be a limited time, gaining a Visa through Melbourne University. Adam Lamb picked Barry up from the airport when he arrived and they went for a few drinks. On the second day in the country, Barry met his now wife, Mandy, and they have been together ever since.

While Barry's management style prioritises efficiency and high standards, he really enjoys the company of the staff and comradery of a team environment. Outside of work, Barry loves socialising and has a few favourite pubs where he has a good group of friends and can take his dogs. He loves running and has done a lot of running events. He also goes to the gym regularly. His favourite pub? The North Port Hotel in Port Melbourne but has local favourites as well.

His favourite job is anything where you are working in a team. Tournament time is his best.

Q&A highlights

How much stock do you put into professional development? What have you done yourself?

Very important. I have done the Ohio State Program, Diploma in Turf Management, a Diploma in Management and, most recently, attended the ITRC in Japan.

What's your favourite course in Melbourne?

It is interchangeable between Royal Melbourne and Kingston Heath. Barry is also lucky to have played

the number one course in the world, Pine Valley in the US.

How was your time on the VGCSA committee, eventually becoming president?

It was Barry's first year as Superintendent when he was approached to join the committee. His previous Superintendent suggested he wasn't ready to be one yet, and so being on the committee with so many experienced guys who he could extract knowledge and advice from was invaluable. Being on the committee also gave him so many skills in leadership and public speaking, with which he is now very comfortable.

11.15am

Course walk with host Superintendent, Barry Proctor

Barry took attendees outside and showed an impressive view of the city skyline from the course. He explained his love of the golf course and that it wasn't until the



third time he had applied for the Superintendent position, that he finally got the job at Riversdale in late 2023.

History

The site was purchased in the 1860s by John Cunningham, mayor of Prahran, and the original homestead is still there as part of the Clubhouse. In 1880, the site was purchased by the judge who sentenced Ned Kelly. There is a strong rumour that Ned Kelly was kept in the stables on site the night before his sentencing.

The course was built in 1924 as a 73Ha site. The government then bought some land for the train and the site was reduced down to approximately 50Ha.

Current works

Barry showed attendees the PoaCure trials which are taking place on the chipping green. Both the SC and EC formulations are being trialled, with half the trial on sand draining at 100mm/hour and the other at 240mm/hour.

Applications are 20ml/100m² with four applications in total, spaced two weeks apart.

Initially scheduled for this year, design firm OCM will be starting works rebuilding the greens in 2026. The OCM briefing is that the greens need to all become more uniform. With over 60,000 rounds per year, there must be more room for pin positions on greens than there are currently.

Bunkers will also be changed to provide more uniformity and to be more suitable to the course style and soil types.

The course has Santa Ana fairways which receive minimal inputs due to the heavy soils not requiring high

inputs. Barry commented that he believes that Santa Ana on heavy soils actually produces a finer leaf than those on sand.

Fairways are scarified and then receive no nutrition to recover. Barry believes these are the oldest Santa Ana fairways in the state.

Greens are bent/*Poa* mix with a modified USGA construction method typical of most on the course. Greens are kept at 20% moisture ideally - 1.2kg actual N applied, with PGR applied on a growing degree days schedule of 200GDD. Ethephon is applied four times a year for seedhead suppression. The greens are mown three times a week for most of the year, with dusting every 2-3 weeks depending on the season using kiln dried sand. Barry commented that he applies "One Range Rover's weight of sand" to the greens per year (2.7 tonnes). Greens are rolled on other days they aren't mowed.

The course has 26Ha of *Poa annua* roughs. It is remarkable how clean the fairways are considering this fact. Barry applies glyphosate in summer to roughs to get good contrast from fairways. Over the past two years the Club has invested heavily in eradicating

Kikuyu from rough lines. They are down from 12Ha of Kikuyu to just six at present.

Droneland have been mapping the roughs which assists in chemical applications of quinclorac, Roundup and metsulfuron.

The Club harvests water from Damper Creek and, with a good 10mm rain event, their dam is full again. Barry showed attendees bentgrass trials that have been undertaken on the property. The trials were seeded in May and had their first mow in June - a good establishment rate. The cultivars included are Macdonald, 007XL, 777, Pure Distinction, Penn A1 and a variation of the 'Metro-mix'. As with the chipper, these trials are constructed with both a high draining sand (240mm/hour) and a slower sand (130mm/hour).

On the way back to the Clubhouse Barry showed attendees a new bridge that has been built over water at the Club.

In concluding the course walk, Adam Lamb thanked Riversdale GC for their hospitality and the day's sponsors Brandt and Syngenta. Finally Adam thanked host Superintendent Barry Proctor and presented him with a gift.

12.30pm Lunch and meeting close



ASTMA REPORT

Mark Unwin
Chief Executive Officer

We recently announced the successful candidates for the very popular Future Turf Managers Initiative (FTMI) for 2025-26, delivered in partnership with Silver Partner Jacobsen. The worldwide program developed by Jacobsen and run in conjunction with the ASTMA and NZGCSA, delivers education to future leaders in the turf industry who aspire to be superintendents, ground managers, head curators or hold senior leadership positions. The program has been running in Australia since the 2016 conference in Melbourne, with over 200 graduates having completed the program to date.

Pleasingly, however making the judging of candidates more challenging, was the volume and quality of applications for this year's FTMI. The total number of applications from turf managers seeking to be a part of this program continues to increase each year. This is a testament to the value, of both the initiative and that turf managers are placing in professional development, individually or as teams. We continue to see the spread of applicants come from all areas of the turf management industry, along with the number and quality of applications grow, making it a challenging time for those judging to narrow applicants down to the 24 successful turf managers taking part this year.

The FTMI program is designed to provide practical tools and guidance in leadership and management skills, assisting candidates to pursue their career aspirations through this leading professional development course. Working with leadership professionals and

industry leading mentors over five months, candidates attend a series of online learning webinars kicking off in November, which culminate in a three-day face-to-face workshop in Melbourne in March 2026.

The successful FMTI cohort for 2025-26 are: Jack Besley (Southern Golf Club), Alex Blakey (Brisbane Golf Club), Kane Campbell (Melbourne Racing Club), Luke Carroll (Burleigh Golf Club), Bryan Dick (Royal Wellington Golf Club), Matt Gates (Kooyonga Golf Club), Todd Heinrich (Adelaide Oval SMA), Mike Holliday (The Hills), Steve Jahour (Chequers Golf Club), Jackson Lanning (The Lakes Golf Club), Ray Lawrence (Nudgee Golf Club), Jordan Lucy (Peninsula Kingswood Country Golf Club), Harry Marshall (Cricket ACT), Solly Marshall (Kingston Heath Golf Club), Brad Milne (Royal Melbourne Golf Club), Anita Mitchell (Te Arai Links), Cory Salmond (Indooroopilly Golf Club), Brett Stuesser (Strathallan Golf Club), Joshua Wall (Office of the Official Secretary to the Governor-General), Jack Wilkie (Barwon Heads Golf Club), Brandon Williams (Royal Canberra Golf Club), Shane Wilson (Melbourne Cricket Club), Matt Wolfe (HG Sports Turf) and Sofia Zavalia (Remuera Golf Club).

The Association is also supporting the R&A, who recently announced the first Golf Course 2030 (GC2030) project in Australia and New Zealand, with a focus on demonstrating the positive role golf courses can play in nature conservation and ecological restoration. Led by Torgersen Gilbey, the project will bring together leading environmental projects and practical course management to collate examples of best practice in biodiversity stewardship from golf courses across Australia and New Zealand. The project will highlight how golf facilities, when managed responsibly, can provide thriving habitats in the urban environment for native wildlife, protect ecosystems and contribute to wider environmental goals.

The Accredited Curators Program continues to expand, with a series of curator training sessions held in September and October at venues in New South Wales, Queensland, Victoria and South Australia. The program has seen 449 cricket curators attend and complete a Level 1 accreditation, with a further 56 having undertaken the Level 2 accreditation to date. Further sessions are scheduled for December (Tasmania) with dates and venues for forthcoming training in the new year being finalised by each state. Information will be made available once these sessions are finalised.

Lastly, the 2026 Sports Turf Management Conference and Trade Exhibition returns to Melbourne in June, this year held in conjunction with Golf Management Australia (GMA). The conference planning team, comprised of representatives from both Associations, are currently working through development of the educational program with the objective of releasing the conference program to members in late 2025. The Trade Exhibition has opened strongly, with a significant number of trade and industry partners confirming their attendance at the event and joined by a series of new industry suppliers who will be exhibiting at the conference for the first time in 2026. Ahead of these announcements and conference registrations opening early in 2026, the Association is encouraging all members, partners and facilities to nominate turf management teams for an award. This is a chance to recognise their dedication, innovation and teamwork to keep our sports and recreation facilities worldclass. By nominating an outstanding sports turf manager or team, you are helping to highlight the essential role they play to sport and recreation in Australia. I would encourage all members to take the time to find out more about the awards and the nomination process, by visiting the Association's website at www.astma.com.au.

MEMBERSHIP REPORT

Mary Napier
Chief Executive Officer

After a six-week break and jaunt overseas, I returned to the VGCSA office in late October. There's been a fair bit of catching up to do, however, office activities will quieten down come December - only to take yet another break over the Christmas and New Year period.

Reflecting on the past twelve months, it has been a full and highly successful program of activities here at the VGCSA. Alongside our five main meetings from March to September, the Association presented nine specialised training days for course staff - all delivered by a host of guest experts and professional trainers. In looking back at my report in December 2024, I noted, "I'm sure 2025 will be just as productive, if not bigger and



Aaron Carver



Zac Bourchier



Ben Mills



Dylan McMeekin

better". Turns out I was right. Now to top that goal in 2026!

Also to mention upon my return, we received a number of spring *ON COURSE* issues that were 'Returned to Sender' - either noted as 'incorrect' or 'no longer at this address'. As always, to ensure our member records remain up to date, please email ceo@vgcsa.com.au to inform of any changes regarding contact details, changes in staff, resignation or new employment.

Now to welcome our members who have joined (or rejoined) the Association in recent months. And to everyone, may the weather be kind for a triumphant season ahead. Hopefully too, there will be sufficient work/life balance to make way for quality time with family and friends.

Superintendents

Jason Newman - Bendigo Golf Club
Aaron Carver - Chalambar Golf Club
Zach Bourchier - Cheltenham Golf Club
Andrew Bath - Corowa Golf Club

Apprentices

Hamish McDine - East Geelong Golf Club
Thomas Quirke - The Valley Golf, Sports & Leisure

Trade Members

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News & Snippets

2026 VGCSA - BRANDT - JOHN DEERE Scholarship

3 - 9 May 2026

The VGCSA is thrilled to continue our valued partnership with Brandt and John Deere, offering the VGCSA - BRANDT - JOHN DEERE Scholarship opportunity to course staff in 2026. Applications are NOW OPEN and we encourage all members to share this issue's information flyer with fellow course staff.

The winning candidate will undergo a one-week work experience residency at **Tara Iti Golf Club** and **Te Arai Links**, New Zealand, with the scholarship covering travel, accommodation and provision of stipend to the value of \$500 for related expenses. Get out your phone or camera and make a short

video today! Visit vgcsa.com.au to apply online. Applications strictly close **5pm, Monday 19 January**. Late entries will not be accepted.

Become a VGCSA Centenary Book Sponsor Today

With extensive research conducted over the past year, the VGCSA Centenary Book's first draft is currently in progress with author, Nicolas Brasch. Following the first draft completion, our task for 2026 will be to further refine research and historical source materials in the lead up to honing the final draft, proof and design. All extensive work will be in preparation for our publication release in 2027 - marking the Association's 100 year anniversary. This prodigious project needs

your support. Find out how you can significantly contribute by becoming a proud VGCSA Centenary book sponsor. Head to vgcsa.com.au/centenary-sponsor-packages for further information.

Attention Trade members! This month will be your final chance to take advantage of our 2025-2026 annual instalment payment plan. EOI and enquiries to Mary Napier at ceo@vgcsa.com.au.

VGCSA 2026 Sponsor Opportunities

Limited spots are still available for a range of digital and print advertising options, along with the VGCSA Centenary Book. Please note that bookings for *ON COURSE* annual discounted advertising spaces close in January. Visit vgcsa.com.au/sponsor-packages for full information and essential booking forms.

VGCSA Summer Office Hours

The VGCSA office will be closed as from 5pm, Thursday 18 December until Tuesday 13 January for the summer holiday season. For urgent enquiries only, please contact us via the VGCSA website.



VGCSA ERI PROJECT

John Neylan (SPORTENG)
Bryce Mulvogue (Sorrento GC)
Hamish Buckingham
(Metropolitan GC) &
Ryan Thompson (Latrobe GC)

INTRODUCTION

Patch diseases caused by Ectotrophic Root Infecting (ERI) fungi have become a significant concern on couch grass turf on Victorian golf courses. At their worst, the patch diseases can spread over large areas of turf and result in considerable damage to the playing surface. The ERI diseases cover several genera including; *Ophiosphaerella* spp. and *Gaeumannomyces* spp. with BF1 (*Phialocephala bamuru*) being a relatively new ERI disease in Victoria. BF1 has been present in Victoria since around 2012-14 and has proven to be unpredictable in its occurrence. It can damage large areas of turf and the control strategies are poorly understood.

The work of Dr Percy Wong and Gary Beehag since 2000, has been instrumental in creating a better understanding of the pathogens involved with these patch diseases and, in particular, the more prevalent BF1. However, there has been minimal progress related to understanding the agronomic factors in its occurrence and the most effective management/control strategies.

Because of the concerns with the ERI diseases in Victoria, the Victorian Golf Course Superintendents Association (VGCSA) funded a research project

to better understand the factors that promote the disease. This has involved collecting detailed maintenance data and submitting samples for laboratory diagnosis. Once this data is collated and peer reviewed, trials will be established to determine the most effective methods of minimising/controlling the disease.

RESEARCH PROJECT OUTLINE

A project of this type involves several phases so there is a clear process around understanding the magnitude of the problem, disease identification, understanding the key triggers, successful control programs and then developing field trials. The project consists of several stages as follows.

Stage 1. Undertake member survey

A short member survey was undertaken to scope out the size of the problem and whether members would be prepared to participate in a more detailed survey and site inspection.

Stage 2. Undertake site visit

The site visits were undertaken by three ZICs to discuss the disease, take photographs and examine the soil/thatch conditions. Data such as soil nutrient analysis and disease diagnosis reports were also collected. A site checklist was developed that included the following agronomic factors:

- When the disease occurs and the associated weather conditions.
- Locations where it occurred on the golf course.
- Extent of the disease and the area affected.
- Grass type.



Typical BF1 symptoms

- Height of cut.
- Thatch depth.
- Soil type.
- Location in relation to shade, traffic, etc.
- Age of turf and any introduced grass including source.
- Control programs implemented - success or otherwise.
- Soil nutrition.

Stage 3. Collect samples for diagnosis

A critical aspect of the project was the collection of samples for laboratory diagnosis. The samples were sent to the Plant Health Diagnostic Service (PHDS), NSW Department of Primary Industries for accurate diagnosis. The PHDS has been mentored by Dr Percy Wong in the diagnostic methods for the patch diseases.

Stage 4. Undertake field trials

The treatments in the field trials could be limitless when all the possible chemical control, biological control and physical treatments are considered. The field trials are being determined from the results of the golf course surveys, site visits and disease diagnosis.

Stages 1 - 3 have been completed and form the basis of this report.



Effect of increased fertility on ERI



Excess thatch is associated with ERI diseases

DATA ANALYSIS

Data was collected from ten golf clubs including multiple sites where the disease occurred. There were 17 samples submitted for laboratory diagnosis, while at some sites the disease reports prepared by Dr Percy Wong were also used in the compilation of the data. A detailed questionnaire was filled in for each location where the disease symptoms were observed. The results of the questionnaire were divided into 66 categories including, but not limited to, grass type, thatch depth, maintenance practices, nutrition, age of turf, and time disease has been present.

The aim of the data collection was to determine what factors correlated with the presence of the disease and the success/failure of any control methods employed. The results of the data collection are detailed in table 1 and figures 1 - 4.

The results are discussed below:

- Most of the samples and occurrence of the ERI disease were associated with fairways.

- Santa Ana was the most prominent couch cultivar infected by ERI, however, this was more of a reflection of the high percentage of golf courses established with Santa Ana. Cultivars such as Legend and Wintergreen exhibited greater damage compared to Santa Ana.
- The ERI diseases diagnosed were most active over the summer months.
- The ERI diseases have been consistently present for about ten years.
- The ERI disease was strongly associated with turf greater than ten years old and where there was an accumulation of dense thatch/organic matter.
- The occurrence of ERI had some association with the increased use of pre-emergent herbicides and lower cutting heights.
- There was some association between the occurrence of the disease and increasing traffic, however, the disease still occurred where the traffic was low.
- There was a weak association with soil nutrition, however,

increasing nitrogen did reduce the effect of the disease.

- Introduced turf from turf farms was associated with the occurrence of ERI disease at some golf courses.
- There were no effective treatments identified, however, increasing nitrogen certainly reduced the damage caused by the disease.
- Some early trials have indicated that a program of spiking, applying wetting agent and drenching with fungicide provided some control.
- An early trial where new turf was laid and then drenched with fungicide definitely delayed the onset of the disease. Follow up applications of fungicide were required.
- Sampling non-symptomatic areas of couch adjacent to infected areas identified the presence of the same ERI pathogen as the symptomatic area. In this situation, high traffic was the trigger for the symptoms to manifest themselves.

Figure 1: Disease Pathogens Identified

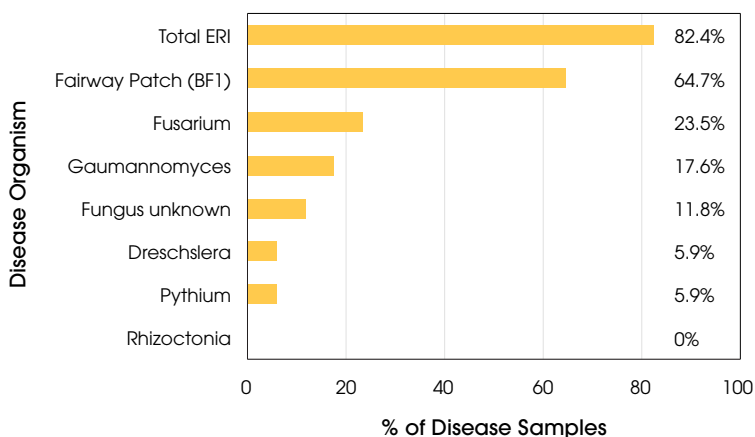


Figure 2: Couch Grass Cultivars Affected by ERI

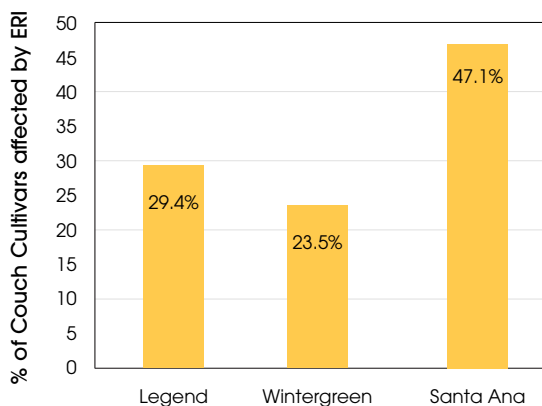


Figure 3: Thatch Depth Associated with ERI

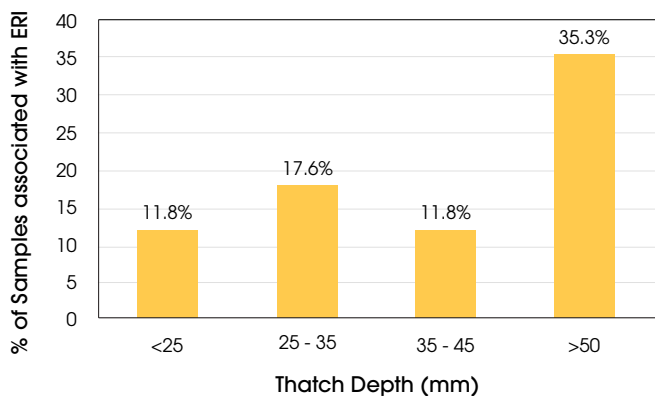


Figure 4: Intensity of Traffic Associated with ERI

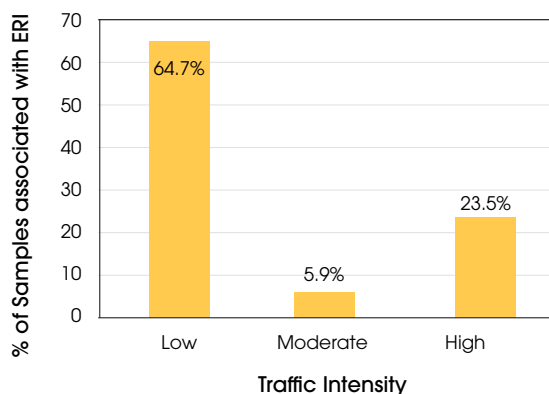


Table 1: Agronomic factors associated with the occurrence of ERI

Parameter	Conditions where ERI occurred (%)
Location of disease (Fairway)	88.2
Years disease present (past 10 years)	100
Age of turf (>10 years)	82.4
Height of cut (8 - 10mm)	88.2
Soil type (Sand - Sandy Loam)	82.4
Nil to slight shade	94.2
Disease most active (December – February)	100
Pre-emergent herbicide program	94
Introduced turf from turf farm	23.5
Potassium (Low - Moderate)	29.4
Phosphorus (Low - Moderate)	47.1
Effective fungicide treatments	0.0



Patch of Santa Ana in Legend couch - no disease

- It is important to note that BF1 is a slow growing pathogen (as are many of the ERI pathogens) and there is no value in applying fungicides until the cardinal temperature range is achieved. For BF1 this is possibly going to be when the soil temperature is greater than 18°C.

CONCLUSIONS

The agronomic factors associated with the presence of ERI pathogens and in particular BF1, are varied with no single factor that contributes to the presence of the symptoms. These ERI pathogens are likely to be ever present and the surface symptoms are most likely to appear when there is stress on the turf. The most obvious factor that is likely to be contributing to the disease symptoms is excessive thatch/organic matter accumulation which both harbours the pathogens and reduces the effectiveness of fungicides. Other likely factors that will manifest the presence of the disease are; low nutrition, increasing use of pre-emergent herbicides, low cutting heights and golf cart traffic.

Where the ERI diseases occur, the following maintenance practices are recommended:

- Take a sample and have it assessed at a plant pathology laboratory experienced in diagnosing the ERI pathogens.
- Assess thatch/organic matter depth and initiate organic matter control program.
- Measure soil temperatures leading into the time of year when the symptoms typically occur. This data will assist in developing a preventative control strategy.
- Where treating ERI areas the following needs to be undertaken;
 - Hollow core/spike the area.
 - Apply wetting agent and drench at least two weeks prior to fungicide application.
 - Apply fungicide with 2000L/Ha of water or apply at least 3.2mm of irrigation (refer – Dr J. Kerns, NC State).
 - If ERI has been noted previously apply fungicide about six weeks prior to symptoms occurring.
- When importing turf from a turf farm inspect the rhizomes/stolons for dark areas that may indicate the presence of the disease.
- When laying turf in areas that have been damaged by ERI disease, initiate a fungicide program as soon as the turf is laid.
- Increasing nitrogen.
- Reviewing the efficacy of the available registered fungicides with high water volume applications (based on the research of Dr Jim Kerns).
- Preventative fungicide applications ~ six weeks before (~ mid/late October) symptoms occur. This is based on some research of Dr Bruce Clarke (Rutgers University).
- pH manipulation and calcium applications.
- Measure soil temperature every week until symptoms are observed (to try and establish the critical temperature range).

ACKNOWLEDGEMENTS

There are numerous people and organisations to thank for allowing this project to proceed as follows:

- The Victorian Golf Course Superintendents Association for co-funding the disease diagnosis.
- Bryce Mulvogue (Sorrento GC), Hamish Buckingham (Metropolitan GC) and Ryan Thompson (ex-Latrobe GC and now RACV Healesville CC) for their hard work in collecting the samples and data.
- The golf clubs and Course Superintendents that were willing to share their information and to allow us to collect samples.
- Gary Beehag for providing his experience and insight into the ERI diseases.

INAUGURAL JOHN DEERE / K&B ADAMS COUNTRY CONFERENCE

Presented by VGCSA &
NSWGCSA

BOB FARREN, CGCS

Director of Golf Course
Maintenance & Ground
Management, Pinehurst Resort &
Country Club

Biography

A highly regarded golf turf industry leader, Robert Farren Jr began his storied 46-year career in golf course management in 1979. Three years later, he joined Pinehurst Resort & Country Club and advanced to his current role as Director of Golf Course Management in 2001. Since that time, Farren has been a principal force to restore Pinehurst's historic course architecture while advancing the environmental and economic sustainability of its now eleven-course footprint.

Such achievements have included reducing more than 40 acres of irrigated turf in favour of signature sandscapes featuring native wiregrass; greens and fairways conversions to more drought-tolerant turfgrasses; and championing training for his team. He was also a principal founding partner of the Greenkeeper Apprenticeship Program, launched in the Pinehurst area in 2023. Through Farren's tenure, Pinehurst

Meet our international guest speakers



has become a beacon for innovation and a successful testing ground for advanced, data-driven maintenance practices and on-course learning for superintendents, agronomists and others.

Among the eleven USGA championships Farren has worked at Pinehurst, one of his team's most significant agronomic accomplishments was in delivering a consistent playing experience for the unprecedented back-to-back 2014 US Open and US Women's Open in consecutive weeks on Pinehurst's iconic Course No. 2.

Over his career, Farren has been honoured with the GCSAA President's Award for Environmental Stewardship (2007); the Golf Digest magazine's Green Star Award for outstanding environmental practices (2014); was inducted into the Carolinas Golf Hall of Fame (2019); appointed the first recipient of the GCSAA Col. John Morley Award (2022); and presented the USGA Section Award (2024), honouring his distinguished service to golf and innovative work with turfgrass.

Career - From the early years

My father, Bob Sr was a greenkeeper/superintendent his entire career. My mother was a schoolteacher at a local elementary school. We lived between the school and golf course less than one mile in either direction. I was able to ride my bike to either and obviously chose the golf course on most occasions. I knew from the age of 12-13 that I wanted to follow the footsteps of my dad and frankly never considered other career paths.



I spent my time working on the course with my father from the earliest age through high school and early college. I benefitted a great deal from many of his colleagues becoming my mentors as I was welcomed at many of his field day trips to industry meetings, etc.

I earned my four-year college degree studying Hospitality and Tourism from Marshall University in Huntington, West Virginia in 1979. I completed my internship and continued working for a large Parks and Recreation system until an opportunity presented itself to go to work at Pinehurst in 1982. I began my work as an Assistant Superintendent on Pinehurst No. 1 and No. 4.

My opportunity at Pinehurst happened at a perfect time, at least from my perspective. The resort had fallen in a state of disrepair with a tremendous amount of deferred maintenance causing the ownership to go into bankruptcy. The real career changing moment



In a spirit of cross-border collaboration, the VGCSA and NSWGCSA are excited to present the inaugural John Deere | K&B Adams Country Conference, to be held at Corowa Golf Club from 3rd – 5th August 2026. The three-day conference will feature a dynamic mix of trade exhibits, presentations and networking opportunities, as well as time to relax with peers over golf and social events.

Delivering a high-calibre program of international and local industry experts, the Associations are delighted to introduce three overseas guest speakers who will be presenting at the Country Conference in person.

for me came in 1984 when the resort was purchased by Robert Dedman, Chairman/Owner of Club Corporation of America.

In the ensuing years/decades of my career path and the Dedman family's stewardship of the property, I am still proud to be working for Robert Dedman Jr and the Dedman family as the Director of Golf Course and Grounds Management for the resort and club.

I have always enjoyed working outdoors with the everchanging challenges and situations to make tangible impacts daily. I embrace the idea of working with a 'servant's heart' to improve the experiences of not only guests and members but perhaps, just as importantly, as serving alongside with our staff and crew to create a welcoming environment.

The turf industry, particularly the golf course industry, has gone through so many ups and downs through the decades of my career. Each of them has afforded challenges and opportunities to learn from. I have always been motivated to find ways to be successful in the challenging times thus adding value to how to become better stewards of the industry.

I am grateful to have, essentially, spent my entire career with one organisation. I have had experiences in building new courses with some of the world's best designers, restoring many world-renowned courses, presenting major championships and finally working with both the resort as well as the private member aspects of golf. I have been able to enjoy all this diverse career while working for the same owner/family who truly view themselves in a stewardship role of an historic golf destination, 'The Cradle of American Golf'.

Key qualities of longevity

My faith encourages to be intentional, to approach each day with a sense of gratitude, to be fortunate to work in great industry with so many great individuals who include staff, members, guests, industry partners and colleagues.

I feel it is important to become part of the community in which you live, to give back in any way you can. Examples of this have included coaching youth sports, serving on various volunteer boards, devoted to serving our Church, the list could go on. My point in this, that I share with any young people in their career to "not just be the guy who manages the golf course" but have the community look to you as a contributor well beyond that.

The future of golf course management

Having grown up working with my father, I have witnessed the shift from 'practising the art of greenkeeping' for his generation to 'applying the science of agronomy' in my generation. I encourage the current generation to be more intentional to not overlook the value of the art in what we do. I feel 'practising the art of greenkeeping' will have an added value to the next generation of managers, not overlooking practices of proper cultivation, plant health, etc.

We are certainly going to experience the evolution to more autonomous mowers, range pickers, etc., whether it is to reduce the workforce or by necessity because we simply can't find people to work in the field. We must continue to champion for additional training and increased wages for the workforce. The advances in equipment technology have already greatly impacted our need for Service Technicians to repair equipment, along with the increasing costs.

Work-life balance

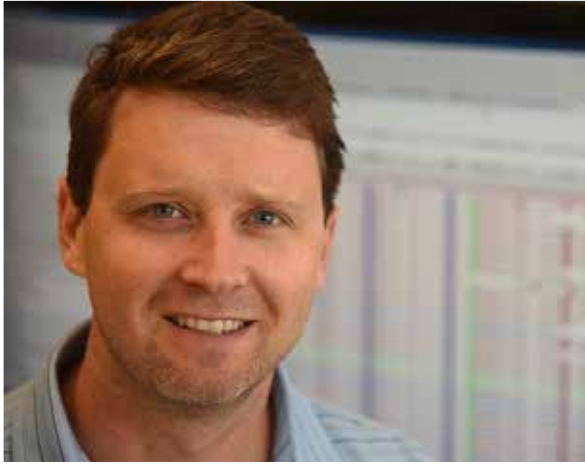
My wife Kathy and I try to plan short vacations a couple of times a year with friends and family. We have three adult children, each of them married with two children. We love spending time with the grandchildren.

I try to maintain a routine of exercise going to the fitness centre daily. I also enjoy playing golf or practising on a regular schedule, though not as often as I used to.

I stress to our staff to be sure to schedule themselves to be away from work on a regular basis. The job and stress are enough, but if you go too long without taking a day away you simply aren't going to be successful in your career and, more importantly, in your family life.

I am really bothered at times when I hear some people comment that they "haven't had a day off in two or three months", or whatever. Trust me, that doesn't speak well for your effectiveness at being a leader or manager and it certainly isn't a good way to attract young people into the industry.





(International) from 2012-2016 and Southern Weed Science Society (2014-2016).

Career - From the early years

My goal like a lot of professors was never to work in academia or research. I was very interested in turfgrass and horticulture but when I went to my first research conference I was hooked. My

passion is new research, new ideas, new concepts and trying to solve problems that face the turfgrass industry.

I knew I wanted to be in turf research but the weed science aspect was unintentional. It was simply the person who had funding to support me as a graduate student. Nothing more complicated than that. When I went to North Carolina to study for my PhD, my goal was to work on PGRs, but the funding for that project fell through and I ended up working on a weed science project in turfgrass. Weeds are a constant problem and will continue to be a problem long after I am gone. There is no permanent solution to weeds in any situation. All we can hope to do is to control them for this year, evaluate the success we had, and develop a new strategy for next year.

I started working on herbicide resistance from the very beginning of my research career when I was a student starting in 1998 (doesn't seem so long ago but it was nearly 30 years now). My first graduate student worked on

herbicide resistance as well. We started doing resistance testing for golf courses in 2009 as the first resistance diagnostic lab focused on the turfgrass industry. To solve a lot of the questions, I had to delve into genomics and bioinformatics. I taught myself computational biology and computer program and we generated some of the first genomic information for key weeds - *Poa annua*, *Digitaria* (crabgrasses), *Eleusine indica* (goosegrass) and *Cyperus* (sedges). Herbicide resistance has been a constant theme of my program from the beginning.

The future of golf course management

Robots, robots, robots. Autonomous robots are going to revolutionise the way that golf courses are managed. From the knowledge needed to manage courses, to the type and number of employees hired, to the way the turfgrass itself is managed - automation is going to change so many aspects of golf course management. Automation is going to be as revolutionary as slow-release fertilisers, PGRs and advanced fungicides, combined.

Work-life balance

I don't know if I have done a good job with work-life balance over the years. My work is my hobby a lot of the time. It is a very rewarding area to work in and I enjoy the connections I have all over the world. I will say that I have become an absolute golf addict over the past year. I am constantly looking to squeeze in nine holes or hit the range for a quick bucket. I am really looking forward to playing in Australia this trip.

SCOTT McELROY, PhD

Professor – Weed Science/Turf Crop, Soil & Environmental Sciences, Auburn University

Biography

PhD, North Carolina State University (Crop Science) 2003

MS, Auburn University (Agronomy and Soils) 2000

BS, Auburn University (Communication) 1998

Dr Scott McElroy is an expert in turfgrass weed science and joined Auburn University, Alabama in 2008 as a professor in the college of agriculture. His primary research areas include weed management in turfgrass systems; physiology and molecular biology of herbicide resistant weed species; and he has authored and co-authored over 300 articles and publications across his career.

McElroy has been a Board member of the International Turfgrass Society since 2017 and served as Executive Board member for the European Turfgrass Society

precision

(noun) / pre-ci-sion

The quality, condition, or fact of being exact and accurate.

Webster Dictionary

Irrigation Precision Australia Pty Ltd brings to you over 20 years of experience in the Project Management and delivery of the construction, management and maintenance of Golf Course and Commercial Irrigation. Specialists in; Wire Tracking, Electrofusion Welding, and providing Solutions for difficult problems.

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Adrian Camba

0418 587 964 / adrian@irrigationprecisionaustralia.com.au





MICAH WOODS, PhD

Asian Turfgrass Center
PACE Turf
University of Tennessee

Biography

PhD, Cornell University
(Horticulture) 2006

BSc, Oregon State University
(Horticulture) 1998

Micah Woods established the Asian Turfgrass Center (ATC) in 2006 to develop and provide turfgrass information for the golf and sports turf industry. Through the ATC, he provides turfgrass advisory and soil testing services to golf clubs, sports facilities and select clients around the world. Since 2009, he has been an Adjunct Professor in the Department of Plant Sciences at the University of Tennessee. Since 2022, he has been Director of the PACE Turf information service.

Micah manages to keep his eyes on the ground, studying the turfgrass species wherever he is in the world. He remains well grounded in the practical aspects of the golf game and his writing has been praised for its accessible style.

Author of over two hundred articles in publications such as *GOLF Magazine* and *Soil Science*, as well as books with intriguing titles like *One Bucket at a Time* and *芝草科学とグリーンキーピング: マイカの時間* *The BOOK*, Micah enjoys spending time creating animated charts and graphs of the data he has collected while discovering unexpected statistics.

Career - From the early years

I started working on the grounds crew at Waverley Country Club in Portland, Oregon when I was 17 years old. I had played a lot of golf and worked sometimes as a caddy prior to that (but I realised I had no future as a competitive golfer) and stumbled across the work behind the scenes preparing a course for play. I enjoyed that work from the start and decided to make it a career.

I worked at golf courses around the USA, was a Golf Course Superintendent in China and Japan, and got my PhD degree at Cornell University. That background of work with a range of grasses and courses, combined with the university studies, allowed me to get a bit of work when I started the Asian Turfgrass Center in 2006.

I played golf and wanted to be a pro, but I wasn't good enough. I enjoyed working with plants, growing particular herbs or vegetables in the garden, but never thought to take care of golf course grass. When I ended up working on the Waverley Country Club grounds crew, it all clicked for me, that this was a fun job that I had a lot of interest in.

The highlights have been the opportunity to make friends all around the world through the work I do, and to be able to provide information that people can make good use of in their day to day work. I've also enjoyed some fun tournament support work at events around the world. And, I get great



satisfaction out of learning new things, which I occasionally do through some of my research. When that breakthrough happens, it's a highlight.

The future of golf course management

I find it impossible to predict the future, however, I'll go out on a limb this time. I expect five to ten years from now, it's going to be pretty similar to how it is now. Maybe a few new machines.

Work-life balance

I enjoy my work to such a degree that I don't really try to separate between work commitments and quality personal time. I enjoy reading, hiking, a bit of (slow) trail running and snow skiing. I try to fit some of those activities into my life. I like beaches. A Thai beach, maybe a run to the other side of the island, and some reading? That's something I try to do a couple times a year.



VGCSA 2026 GENERAL MEETINGS CALENDAR

The VGCSA wishes to acknowledge all host clubs and sponsors for their valued support in 2026.

Online bookings open at least one month prior to each event with all members receiving notice via the VGCSA monthly enews and regular ebulletins.

For program updates, visit vgcsa.com.au



TUESDAY 3RD MARCH

EDUCATION MEETING

The Metropolitan Golf Club

BOOKINGS OPEN FEBRUARY

Sponsors: ADE Turf Equipment | Rainbird Australia



TUESDAY 28TH APRIL

VGCSA 99TH ANNUAL GENERAL MEETING

Thirteenth Beach Golf Links

BOOKINGS OPEN MARCH

Sponsors: Husqvarna | Toro Australia



TUESDAY 2ND JUNE

COURSE STAFF EDUCATION MEETING

Keysborough Golf Club

BOOKINGS OPEN MAY

Sponsors: Colin Campbell Chemicals |
Greenway Turf Solutions



MONDAY TO WEDNESDAY, 3RD - 5TH AUGUST

INAUGURAL JOHN DEERE / K&B ADAMS COUNTRY CONFERENCE

PRESENTED BY VGCSA & NSWGCSA

Corowa Golf Club

BOOKINGS OPEN JUNE

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TUESDAY 8TH SEPTEMBER

EDUCATION MEETING

Huntingdale Golf Club

BOOKINGS OPEN AUGUST

Sponsors: Brandt | Sustainable Machinery



The Science of Syringing

Daniel O'Brien, PhD
Research manager, USGA
Green Section

Syringing putting greens is the practice of applying a light coating of water with the goal of cooling the turf and preventing wilt, but are the actual benefits worth the effort?

KEY TAKEAWAYS

- Syringing is applying water to wet the leaf surface, not to replenish soil moisture.
- The principle benefits of this practice are cooling the plant and preventing wilt.
- The impact of syringing alone on soil and canopy temperatures is typically small and short-lived.
- Syringing in conjunction with the use of aboveground fans has more significant cooling effects.
- Given the limited benefits of syringing, proactive steps to reduce the risk of heat and moisture stress should be prioritised.

When you hear someone talk about “syringing” putting greens, what does that mean to you? While the term syringing may be common, people’s definition of it is far from clear or consistent. Some think of it as applying a light, superficial mist of water, while others view it more

like hand watering with the goal of slightly increasing soil moisture. Along with varying definitions, there are also differing opinions about the potential benefits and drawbacks of syringing.

This article will take a deep dive into this shallowest of watering practices to examine what syringing is and how it works (or doesn’t), along with implications and additional considerations for water management on putting greens. We will start with the principles and theory behind syringing, then see what turfgrass research has to tell us about its effectiveness, and finally bring it all together with some practical recommendations.

Defining Syringing

Simply put, syringing is about wetting the surface, not the soil. If you’re looking for a more formal definition, you can visit Michigan State’s Turfgrass Information Center website, a great starting point for investigating any turfgrass topic. There, you’ll find the classical description of syringing as: “The

spraying of turf with small amounts of water with the objective being to (i) dissipate accumulated energy and cool the leaves by evaporating free surface water, (ii) prevent or correct a leaf water deficit, particularly wilt, and (iii) remove dew, frost and/or exudates from the turf surface, usually in the post-dawn period,” (Beard & Beard, 2005). In this article, we will set aside that third part about removing dew, frost and exudates, and focus on the first two objectives: cooling leaves and addressing wilt.

What you don’t hear in that definition is any mention of replenishing soil moisture. In other words, the benefits of syringing are supposed to come through wetting the turfgrass surface only. So, how exactly does that work?

Principles of Syringing

Let’s start with that first syringing objective: cooling turfgrass leaves as water evaporates from their surface. This cooling effect comes from the fact that it takes a great deal of energy (heat) to break the bonds between water molecules

and transform liquid water into water vapour. On a hot day, when a syringing application coats turfgrass leaves with a light layer of water, that water can absorb heat from the leaves and from the air. As heat is transferred from the leaves to the water, leaf temperature decreases. Eventually, water droplets absorb enough heat to become water vapour, carrying that absorbed heat away from the plant and into the atmosphere.

Moving on to the second syringing objective: preventing or correcting water deficit and wilt. Here we need to appreciate how water moves through the environment, and the key concept is the “soil-plant-atmosphere continuum.” Specifically, we’re talking about how water in the soil moves up through the plant and exits (transpires) into the atmosphere. Similar to the evaporation of water from the leaf surface, transpiration has a cooling effect on the plant. This upward water movement is driven by the fact that generally, the atmosphere is relatively dry compared to turfgrass leaf tissue.

Turgidity describes the way healthy turfgrass leaves maintain their shape and orientation because of the abundant water within their cells. The other side of that coin is wilt, where leaves lack sufficient water to maintain their orientation or shape, as evidenced by the all-too-familiar footprints seen in stressed areas on a hot day. This tug of war between turgidity and wilt follows the natural process known as homeostasis, where organisms try to maintain internal stability by seeking equilibrium with their external surroundings. In this situation, water moves from areas of relatively higher concentration (inside plant tissue) to areas of relatively lower concentration (the atmosphere). As this process plays out on hot, dry and/or windy days, if water exiting plant leaves cannot be replaced by root uptake from the soil, turfgrass begins to wilt.

Syringing is intended to slow down this exodus of water by masking the fact that the air outside the leaf is much drier than the cells inside the leaf. Applying a light amount of water to the turf surface affects the water content of the immediately

surrounding air, a narrow region known as the “boundary layer”. Elevating the humidity of the boundary layer effectively slows down transpiration by reducing the external atmospheric demand on water inside the plant, and by extension, water in the rootzone.

So, at this point we’ve defined what syringing is and how it works in theory, but how effective is syringing on an actual putting green?

What Turfgrass Research Says About Syringing

This is the point where I will tell you that we don’t have as much research on syringing as we might like. However, there are some valuable takeaways from the results that we do have. A theme running throughout turfgrass research is that while syringing is a tactic for cooling putting greens, it is by no means the only tactic, and the practice is often studied in combination with air movement.

One of the foundational turfgrass research studies involving syringing comes from Michigan State in the late 1960s, where ‘Toronto’ creeping bentgrass (*Agrostis stolonifera* L.) plots were syringed at noon with 0.25 inches of water and temperatures recorded every half hour for both the mat layer and at a 2-inch depth (Duff & Beard, 1966). For half of the plots, air movement was restricted (0 mph), and for the

other half, air movement of 4 mph was created. Within each airflow regime, temperature reductions from syringing were relatively small (ranging from 1 to 4 degrees F), with both the mat layer and the rootzone returning to their pre-syringe temperatures after two hours.

While this study is often included when discussing the potential benefits of syringing, there are a couple of caveats worth pointing out. First, the 0.25 inches of water applied is more than what we’ve defined as syringing in this article. Also, applications were made when air temperatures were 75 degrees F. Nowadays, how many superintendents would feel the need to syringe greens with a quarter inch of water during the middle of a 75-degree day? I ask that question not to disparage this research, but to point out how turfgrass management has evolved over the last half century, and also to make a larger point that is important any time we interpret turfgrass research. Research trials are intended to be particular examples that hopefully demonstrate evidence toward a larger truth, but we have to appreciate that their results are a function of the specific circumstances and conditions under which the work was conducted. In other words, when thinking about how research results might apply

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Adding a film of water to the leaves temporarily cools the plants and slows water loss from transpiration.

to your golf course, it is critical to acknowledge how the study is both similar to, and different from, your own situation.

Fast forward to 1981-82 where a two-part research trial compared different syringing volumes and timings on 'Penncross' creeping bentgrass greens in North Carolina (DiPaola, 1984). Greens were mowed every other day at 0.250 inches and air temperatures ranged from 75 to 93 F. Here, the cooling effects of syringing were considerably shorter than the two hours previously reported in Michigan.

In study 1, seven different volumes of water ranging from 0.002 to 0.22 inches were applied at either 11.00 am or 1.00 pm. None of these amounts significantly reduced canopy temperatures one hour after application. On four of the 15 dates, syringing amounts of 0.06 inches or greater significantly reduced canopy temperatures 30 minutes after application by an average of 1.3 degrees, with maximum reduction of 3 degrees.

In study 2, across nine different application timings, including single and multiple applications per day, temperature reductions were typically less than 1.8 degrees F. A couple of important differences between this research and the earlier work are that the water quantities applied better align with our definition of syringing, and that canopy temperature rather than soil temperature is the primary metric being reported. The second point begs the question – with a syringing application, what does success look like? Is the goal of syringing to reduce canopy or soil temperatures, or both? While altering canopy temperatures may be the easier metric to affect and measure, the consequences of elevated soil temperatures on turfgrass root health should not be overlooked, an idea that we will follow through our final research case study and into our recommendations. Ultimately, this research concluded that in the absence of wilt, beneficial effects from syringing are relatively small and short-lived, and the practice as a whole may need to be reconsidered in light of the water

and labour required. That phrase, “in the absence of wilt”, is important in its own right because it highlights the fact that controlled experiments are often better equipped to investigate the syringing objective of reducing temperature, and that data specifically focused on wilt is harder to come by.

In 2000-2001, a study at Auburn University investigated syringing and aboveground fans (used independently and in combination with each other) for cooling a native soil 'Crenshaw' creeping bentgrass putting green in Alabama (Guertel et al., 2005). Syringing amounts of 0.05 inches were applied three times per day (noon, 2.00 pm and 4.00 pm) once air temperatures consistently reached 84 to 90 F, including 35 days above 90 F, with a maximum air temperature of 99 F. In this research, syringing plus fans provided significantly greater reductions in maximum soil temperatures at a 0.5-inch

The takeaway here is that aboveground air movement is critical for realising benefits from syringing when it comes to reducing temperatures, both above and below ground



depth than syringing only, or fans only. Interestingly, syringing alone ranked third in terms of reducing temperature, also behind fans only. In other words, if the goal is to effectively reduce soil temperatures, syringing needs to be used in conjunction with fans, if used at all. This research also reported that syringing plus fans reduced the amount of time bentgrass was exposed to stress-inducing temperatures (greater than 81 F), and that on multiple dates, syringing alone actually resulted in lower root-length density, compared to no syringing. Another study from Clemson University reinforced the message that light moisture in combination with aboveground fans was an effective strategy for reducing canopy, soil surface and soil temperatures, further adding that subsurface air movement did not enhance these cooling effects (Rodriguez et al., 2005). The takeaway here is that aboveground air movement is critical for realising benefits from syringing when it comes to reducing temperatures, both above and below ground.

At this point, it would be fair to say that in the absence of wilt, syringing as a standalone practice leaves something to be desired for providing appreciable cooling, and that surface air movement plays an important role in whatever benefits syringing does have to offer. As we shift from research to recommendations, the question becomes: If the benefits of syringing are limited, what are the other levers we can pull for managing heat stress on putting greens?

Recommendations

Looking back at the definition, syringing is essentially described as a “rescue treatment” for reducing both heat and moisture stress. From a management perspective, the ideal scenario would be taking proactive steps to reduce the need for rescue in the first place. To help us navigate different management options, we need to bring back the concept of the soil-plant-atmosphere continuum and the common thread connecting those three components: transpiration. Let's work our way from the bottom up, starting with the soil.

Soil

Independent of syringing, transpiration creates its own cooling effect as water is pulled from the soil, through the plant and released from the leaves into the atmosphere. Plant available water in the rootzone is the reservoir from which this entire process operates. Tracking rootzone volumetric water content (VWC) using soil moisture sensors (SMS) helps inform irrigation scheduling to adequately replenish this reservoir without wastefully exceeding the necessary capacity. Getting the most out of SMS data means developing your own site-specific irrigation thresholds in terms of percent VWC. By determining the VWC values where early signs of wilt first appear, you will create consistent, actionable thresholds for overhead irrigation or hand watering that can be easily communicated. While not yet as prevalent in turfgrass management, matric potential sensors can offer even more powerful insights into how accessible soil moisture is to plant roots. This information is not available through VWC measurement alone.

Plant

While transpiration is common across all turfgrasses, the rate at which it happens can differ considerably among different species and cultivars, and across different locations and maintenance practices (Braun et al., 2022). The syringing research highlighted in this article all took place on creeping bentgrass, a species susceptible to summer bentgrass decline, which involves reductions in root mass. Annual bluegrass (*Poa annua*, L.) roots may be shorter and even more vulnerable to start with than creeping bentgrass, and likewise experience heat-related reductions (Lyons et al., 2011). Practically speaking, using a soil profiler to visually assess rooting depth can work hand in hand with portable SMS readings of VWC within the actual rootzone as root lengths fluctuate throughout the year.

Another strategy for mitigating summer bentgrass decline is to reduce nighttime soil temperatures. Research at Rutgers University showed that reducing nighttime soil



Overnight use of fans offers a nondisruptive tactic for alleviating high soil temperatures to promote turfgrass growth during periods of heat stress

temperature had a greater effect on turfgrass quality and root growth than daytime temperature reduction (Xu et al., 2003). When considering how to create lasting temperature reductions, the overnight use of fans makes sense. In the absence of solar radiation, airflow created by fans allows soils to release more heat into the air. Overnight use of fans offers a nondisruptive tactic for alleviating high soil temperatures to promote turfgrass growth during periods of heat stress. At the risk of stating the obvious, fans are not the only way to improve airflow around greens. Opening up the surrounding spaces by removing detrimental trees and shrubs may provide the dual benefits of increased natural airflow and increased sunlight.

One final plant-related strategy that goes well beyond routine maintenance practices is converting to a more stress-tolerant cultivar or even making the switch from cool-season to warm-season turfgrass species in areas where this is an option. This is by no means a

universal solution, but when and where possible, conversion offers a large-scale and long-term approach to managing heat and moisture stress on putting greens. Any turfgrass conversion decision needs to carefully consider a number of site-specific factors that extend well beyond the scope of this article. The grassing strategies chapter of the *USGA Water Conservation Playbook* is an excellent resource for those interested in exploring turf conversion in greater detail.

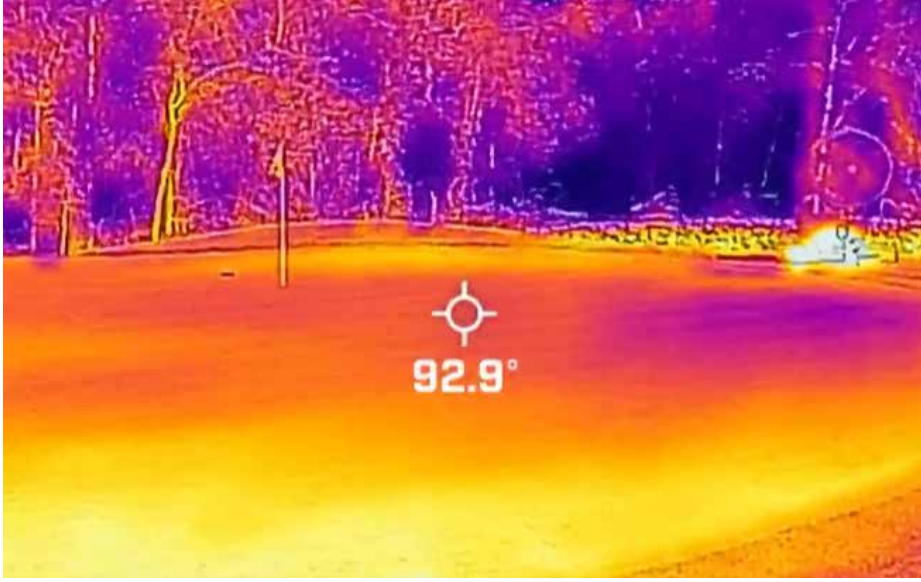
Atmosphere

Closely tracking evapotranspiration (ET) is the key to understanding the atmospheric demand exerted on turfgrass moisture status each day. Both historical and forecasted ET data can be used to schedule irrigation and can be obtained from different sources such as the National Weather Service Forecast Reference Evapotranspiration (FRET) website, state or local weather networks, or the USGA's DEACON® management system. On-site weather stations can provide site-specific ET data, and multiple stations can be used to account for different microclimates on a golf course.

It is important to remember that ET is only a starting point, and that adjustments need to be made when it comes to how much irrigation to apply. Simply put, the goal should be to ensure that there is enough moisture available in the rootzone each day to exceed the demand for how much will be transpired (lost) to the atmosphere. The site-specific irrigation scheduling chapter of the *Water Conservation Playbook* offers a valuable resource for those looking to make more precise irrigation decisions using ET (and SMS) to avoid wilt and ultimately reduce the need for syringing.

Finally, as noted earlier, canopy temperature is often used to determine the need for and impact of syringing. Infrared thermometers are a common tool for measuring surface temperature and thermal cameras are increasingly used to visualise temperatures across turfgrass surfaces. While the images they produce can be captivating,

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Thermal imaging technology like this forward-looking infrared (FLIR) camera can provide insight into the impact of practices like syringing and using fans to cool the turf canopy (Jim Pavonetti).

It is important to appreciate that thermal cameras are not all the same in terms of how they represent canopy temperatures. In order to obtain absolute temperature values, a (generally more expensive) radiometric thermal camera is required. Within a radiometric image, each individual pixel has its own temperature value. In other words, you can know the exact temperature of each location within that image. A non-radiometric camera simply displays relative differences in temperature across the entire image, not absolute temperature values. When these relative differences are translated to a colour-coded scale, the hottest and coldest areas of the image occupy the extremes of the colour scale, with everything else falling somewhere in between.

What this means in a practical sense is that in a non-radiometric image, it matters what else is in the image. If a shaded area of rough is in the background, then greens may look excessively hot by comparison even if the actual putting green temperature is not extreme. Similarly, if a hot cart path is in the image, then greens may look relatively cool by comparison.

Collectively, research has shown that the return on investment for syringing as a stand-alone practice is relatively small and short-lived

even though absolute temperatures may be approaching an undesirable level. The take-home message is that just like turfgrass research, understanding the limitations of technology is essential for getting the most out of it.

Conclusions

Ideally, golf course irrigation is performed with the goal of making every drop count. Along with that, golf course superintendents want to make every minute count when it comes to staff time. Water and labour were interchangeable as the top two current and future concerns for the golf course maintenance industry in a recent USGA survey of industry professionals and experts (Merrick, 2025). When dedicating the critical resources of water and time toward the practice of syringing, it is important to ask: What is the return on that investment, and are there more efficient and effective ways to manage heat and moisture stress?

Collectively, research has shown that the return on investment for syringing as a stand-alone practice is relatively small and short-lived. Incorporating air movement through the use of aboveground fans is a key driver in cooling putting greens, with or without syringing, and making informed irrigation decisions will proactively help greens handle stressful conditions. Ultimately, syringing may be necessary at times, but reducing the need for it whenever possible is a worthwhile and realistic goal.

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SILICON LEVELS IN TURF TISSUE

FOLLOWING APPLICATION OF SI PRODUCTS (REPORT 2)

Dr Phillip Ford
Melbourne Polytechnic

A turf trial funded by the Sports Turf Association (Vic) and the Victorian Golf Course Superintendent's Association, July 2025

Summary

Recent research in both agriculture and in turf demonstrates a wide range of benefits from boosting tissue silicon (Si) to levels well above those found in normal plant tissue - levels that could only be achieved by the application of silicon fertilisers, and the subsequent systemic uptake of that Si to high levels (e.g. 1 – 2% tissue Si).

There are several silicon fertiliser products on the Australian turf market, but in Trial 1 of this series, repeat application of several of those products at their highest label rate failed to increase tissue Si levels to anywhere near the levels where the health benefits cited in the literature would accrue.

In this second trial, very high rates of a granular and/or a foliar silicon

fertiliser product again failed to increase tissue Si to anywhere near the desired range.

This raised a question of whether the testing laboratory was using the right test, but I was assured by international experts in this area that the method used, a hydroxide digestion, was correct. They suggest that high product rates over a long period of time might lead to an accumulation of the desired tissue Si levels, but this calls into question the costs verses the benefits of such a program, especially where clippings are removed and the accumulating tissue Si is probably being discarded.

The findings of these two reports will not be popular among the commercial suppliers, and the author was truly hopeful that the result had been more positive. That said, the numbers are in. It's probably an appropriate time for those companies to provide some of their own objective evidence on whether their products are actually being taken up by the turf.

Introduction

Recent research in both agriculture and in turf demonstrates a wide range of benefits from boosting tissue silicon (Si) to levels well above those found in normal plant tissue - levels that could only be achieved by the application and systemic uptake of Si fertilisers. These silicon products might also have some external effects, but this report is concerned only with the internal silicon content of the tissue. When turf tissue Si levels get to 1% or higher, perhaps up to 4%, a number of benefits have been demonstrated, such as improved root growth, better stress tolerance and enhanced resistance to pests and pathogens. A fuller discussion of those benefits can be found in Report 1 (published autumn 2025, VGCSA *ON COURSE* Quarterly issue).

There are several silicon fertiliser products on the Australian turf market. In a previous STA/VGCSA

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Table 1: Treatments and rates

Silicon product treatment	
1	Control - no Si product
2	Foliar only, at 8.33 L/Ha per 14 days
3	Granular product at 1 t/Ha
4	Granular product at 2 t/Ha
5	Granular product at 4 t/Ha
6	Granular 1 t/Ha + Foliar 8.33 L/Ha per 14 days
7	Granular 2 t/Ha + Foliar 8.33 L/Ha per 14 days
8	Granular product at 8 t/Ha

Table 2: Nutrient Advantage results for tissue silicon

Silicon product treatment		Tissue Si %
1	Control - no Si product	0.11
2	Foliar only, at 8.33 L/Ha per 14 days	0.17
3	Granular product at 1 t/Ha	0.19
4	Granular product at 2 t/Ha	0.16
5	Granular product at 4 t/Ha	0.28
6	Granular 1 t/Ha + Foliar 8.33 L/Ha per 14 days	0.21
7	Granular 2 t/Ha + Foliar 8.33 L/Ha per 14 days	0.20
8	Granular product at 8 t/Ha	0.13

trial by this author, in October 2024, six different silicon products applied as foliar treatments at their label rates had little or no effect on tissue Si levels, which were around 0.25% Si. This is well below the levels where the benefits cited in the literature are seen. It seemed clear that much higher rates of Si fertilisation would be required to achieve and maintain a target level of, say, 1-2% tissue Si.

The aim of this second trial, then, was to apply high rates of a Si granular (pre-plant) and/or foliar products (post-establishment) to see if high tissue Si levels could be achieved.

Method

The trial was quite simple, and not replicated. It consisted of eight different silicon treatments applied to turf grown in trays. A 150mm deep sand rootzone was installed in 60cm x 40cm (0.24m²) trays, amended with Dynamic Lifter pellets at a rate of 2 tonne/Ha as a starter fertiliser.

One of the trays was a control, with no silicon fertiliser added. Six of the trays had a granular silicon product (Agrisilica, 26% Si) blended into the top 65mm of the rootzone at rates of 1, 2, 4 or 8 tonne/Ha, prior to establishing the grass. Two of the trays that had a granular product also received three foliar applications of TripleSil, a liquid product with 14% Si content, at quite a high rate (8.33 L/Ha). And the final tray had no granular product, just the foliar applications.

Once the granular Si product and the Dynamic Lifter had been blended into the rootzone, a turf-type perennial ryegrass was sown on 28th March 2025 at a rate of 5kg/100m². Follow up applications of liquid NPK fertiliser were applied to maintain vigorous growth of the ryegrass. After a four week establishment period, the foliar silicon treatments were applied, with two more applications at two week intervals, for a total of three foliar applications of TripleSil.

The treatments and rates are shown in Table 1 above.

Two weeks after the third foliar application, when the trial had been running for a total of 12 weeks, leaf tissue samples were taken and submitted to the Nutrient Advantage Lab (Werribee) for tissue nutrient levels, including silicon. During the whole 12 week period of the trial the grass hadn't been cut or clippings removed.

The method used for tissue silicon testing at Nutrient Advantage is a digestion in sodium hydroxide and peroxide, followed by an Inductively Coupled Plasma (ICP) analysis for silicon. The hydroxide digestion method is the same one used in silicon fertility research at Louisiana State University (Prof. Brenda Tubana and Dr Laurence Datnoff, pers.comm), where Si levels in perennial ryegrass were up to 1.8% - so it was clear that the tissue testing method was appropriate.

To double check the laboratory testing, tissue samples were also

sent to the SESL laboratory in Sydney, which uses a different testing method for tissue Si, an acid and peroxide digestion.

Results and Discussion

First off, despite their recommendation, the SESL acid-digestion method failed to detect any silicon in the plant tissue (the results showed less than 10mg/kg, which is less than 0.001%). This is obviously incorrect - all plant tissue has at least some silicon. And a waste of time and money. If anyone was wanting to do tissue silicon tests, make sure the lab uses the hydroxide (alkaline) digestion method.

The Nutrient Advantage results for the major nutrients and trace elements showed a tissue nitrogen percentage in the range 4 - 4.5%, a good N level for perennial ryegrass. There was a minor but consistent deficiency in manganese, and to a lesser extent magnesium, common in sand profiles. But all other major and minor nutrients were at sufficient levels for good turf health (see Appendix 1).

The Nutrient Advantage results for tissue silicon are shown in Table 2 above.

Given the expectation that tissue Si levels might reach 1% or higher, the results are disappointing and show that, once again, applications of the commercially available silicon fertilisers are not resulting in a satisfactory uptake of Si to the desired level.

To reiterate the point made earlier in this report, and in Report 1, there is no doubt that high tissue Si levels in turf tissue can confer many benefits, such as stress tolerance, pest and disease resistance and so on. There is ample evidence of that from the American research. But those benefits only appear when the tissue Si level gets to high numbers, such as 1%, or even up to 4%.

In this trial, the application of high rates of the commercially available granular and/or foliar products has not been shown to attain these high levels of tissue Si. It seems the testing method is appropriate, so the problem could be due to an inability of the plants to take it up from either soil or through the foliage, or it could be because the product rates are not high enough, or perhaps there hadn't been enough time for the Si to accumulate sufficiently. Given the high cost involved in applying high rates over a long period of time, one would question whether the expected benefits justify that cost. One could also question if high tissue Si could accumulate over time on fine turf, if clippings are being removed.

In email discussions with three acknowledged experts in silicon nutrition (Joseph Heckman, personal communication, 3rd July; Laurence Datnoff, pers. comm. 14th July; Brenda Tubana, pers. comm. 12th July) I was assured the hydroxide digestion method was the correct method for tissue silicon testing, and also that in their research they had achieved tissue Si levels in perennial ryegrass up to 1.8% Si, but that it took very high rates of product, over a long period of time.

The findings of these two reports will not be popular among the commercial suppliers, who had been (mostly) quite cooperative in the trial work. The author was hopeful that the result was more positive, as the benefits of high tissue Si are unquestioned. That said, the data shows there is more work to be done in this new area of turf nutrition. The commercial companies should be involved in sourcing and providing objective evidence on the performance of their products, specifically the level of tissue Si that can be achieved in their programs.

Personal communications

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Joseph R. Heckman, Extension Specialist – Soil Fertility, Rutgers University Department of Plant Biology, New Brunswick, NJ.

Brenda Tubana, Professor – Soil Fertility, School of Plant, Environmental and Soil Sciences, Louisiana State University, Baton Rouge, LA.

Further reading

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Appendix 1: Tissue nutrient levels for the eight treatments

	Treatment							
	1	2	3	4	5	6	7	8
	Control	Foliar only	Gran 1t/Ha	Gran 2t/Ha	Gran 4t/Ha	1t/Ha + fol	2t/Ha + fol	Gran 8t/Ha
N	4	4	4.2	4.5	4.5	4.2	4.4	4.3
P	0.41	0.43	0.39	0.41	0.41	0.41	0.4	0.44
K	2.7	2.5	3	3.2	3.4	3.1	2.9	2.7
S	0.5	0.45	0.54	0.56	0.53	0.56	0.52	0.46
Ca	0.49	0.76	0.51	0.53	0.48	0.65	0.67	0.63
Mg	0.3	0.22	0.23	0.25	0.26	0.22	0.27	0.29
Cu	10	11	11	11	12	12	12	13
Zn	140	130	140	160	120	160	160	120
Mn	43	42	54	57	58	56	50	47
Fe	120	130	170	130	150	220	140	160
B	8.2	6.3	9.5	9.3	8	6.8	6	5.8
Na	0.36	0.2	0.43	0.41	0.5	0.3	0.29	0.28
Si	0.11	0.17	0.19	0.16	0.28	0.21	0.2	0.13

HOLMESGLEN INSTITUTE

As the 2025 academic year draws to a close, we congratulate all our students on an outstanding year of learning, growth and achievement. Their enthusiasm and commitment have continued to strengthen Holmesglen's reputation as a leader in sports turf education.

This year has been particularly productive, with several major projects reaching completion. Our construction and renovation works are now finalised and the new turf establishment areas are thriving. Students gained invaluable hands-on experience across all aspects of modern turf management, including turf nutrition, irrigation systems and weed control strategies.

Students and staff also participated in key turf conferences and industry information days throughout 2025, ensuring they remain up to date with current

practices, sustainability trends and emerging technologies. We sincerely thank the many turf professionals who shared their time and expertise, supporting the next generation of sports turf managers.

Our dedicated teaching team - Sam Templeton, Steve Tuckett, Rob Saavedra, Jo-Anne Stolz and Jim Porter - continue to deliver industry-relevant education across all program levels. A special thank you goes to our specialist staff for their professionalism, innovation and commitment to maintaining high training standards and strong industry connections.

Congratulations also to our graduating Diploma of Sports Turf Management students on their outstanding achievement and dedication throughout their studies.

Holmesglen offers rolling enrolments in: Certificate III in Sports Turf Management and Diploma of Sports Turf Management (evening classes); Certificate IV in Conservation and Ecosystem Management (traineeship); Certificate III in Landscape Construction (fast-track evening); and a range of professional development short courses.

Thank you to everyone who contributed to a highly successful 2025. We look forward to building on this momentum in 2026.

Grant Pritchard
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Ohio USA 2001 - Gary Thomas & Phil Ford

MELBOURNE POLYTECHNIC

Two of Melbourne Polytechnic's long-serving turf teachers have decided 2026 will be their final round. Phillip Ford started teaching in 1984 and Gary Thomas a year later, back at the old Parkville campus. In those days it was chalk and blackboards. In recent years both Phil and Gary have been part-time, teaching the Diploma program.

Phil's area has been in agronomy, soils, grasses, pest and disease, etc. while Gary's trajectory has been surveying, CAD and design, notably irrigation and sports field design.

Both agree that teaching is a rewarding career and you are learning all the time, even after 42 years. The industry has changed so much since 1984 - especially the excellent quality of the turf that is now being offered in the various sports. Look at some old footage of Australian Opens, grand finals at the MCG and so on, and compare it to today. Both are proud to say that education has been part of that improvement.

Education has changed a lot, and not always for the better. There's a lot less emphasis on understanding and remembering stuff and more emphasis on being able to source information as required. Phil says that using AI or the internet to do your mental work for you also results in a lazy mind - not a good attribute for a turf manager.

We really appreciate the hard work and quality of information that has been passed on to hundreds of turf students over these years from Phil and Gary.

Doug Agnew
Turf Management
dougagnew@melbournepolytechnic.edu.au



WODONGA TAFE

As we approach the close of 2025, it's with great pride that we reflect on the achievements of our turf management apprentices. This quarter has been filled with hands-on learning, skills development and valuable industry engagement.

Our first-year apprentices have been hard at work, with a major highlight being the coring of the Wodonga Tennis Club courts and the seeding of a new bentgrass turf plot - a rewarding introduction to turf establishment and renovation practices. A special thank you goes to Shane Reed for his support and for allowing us to use the excellent facilities at the Wodonga Tennis Club. The group also enjoyed a visit to Tocumwal Golf Club, where they observed the construction of new greens. A big thanks to Ben Lucas and Ben Chambers for generously sharing their time and expertise during the visit.

Second-year apprentices have continued to build on their growing expertise by finalising tailored nutrition plans, attending



training with advanced practical experiences, including the construction of tennis court surrounds and skid steer loader training. These final units have not only sharpened their technical skills but

also prepared them for a smooth transition into the workforce. We recently farewelled the talented third-year cohort as they completed their final assessments. Their dedication and professionalism throughout the program have been outstanding, and we look forward to seeing them contribute to the turf industry as skilled and confident professionals.

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Gary Smith
Education Leader
gsmith@wodongatafe.edu.au

Meanwhile, our third-year apprentices rounded out their

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COURSE REPORTS

CRANBOURNE GOLF CLUB

I suppose the best way to preface this report is to mention that it will be the final ever written piece of VGCSA content coming from Cranbourne Golf Club, which brings me a great deal of sadness as I type this. Once the doors close for the final time in late February 2026, it will bring to a close 72 years of Melbourne golfing history and the end of a fantastic golf course. Without dwelling too much on the negative, I would quickly like to acknowledge from a personal perspective how enjoyable my time has been here over nearly four years as Superintendent.

When I got the job in early 2022, as I'm sure most first time Supers can relate to, the emotions were very mixed. A great deal of pride and excitement, followed quickly by complete terror as the realisation dawns that you've actually accepted a Superintendent position, and all of the responsibility that comes with it.

As the years progress, you start to become more comfortable with the site and I think this is very unique to turf management. Because you are dealing with a living and breathing entity, you become almost attached to it. Every decision you make impacts how the course looks and plays, and the direct enjoyment of the members who play it each day. Almost four years on, I leave

Cranbourne undoubtedly a better turf manager and people manager than when I started, and I'm certain this experience will hold me in good stead for the future.

We recently hosted our final Club Championships at CGC, with the weather throughout the weeks leading in providing us the ability to get the course in fantastic condition. The greens required minimal hand watering which

ensured that we produced some really firm and fast surfaces, with a lot of commentary around the greens (some in favour and some not!). Looking to December, we host an Australian Open qualifier here on the 1st and then it is just maintenance mode until the end.

As I am departing in early December for my next role, I would like to thank everyone who has helped me whether it has been advice, lending machinery, volunteering staff for events or hosting our staff for a golf game. This is such a great industry to be a part of in this respect and I truly appreciate it.

To my staff past and present, it has been great getting to know you all. We produce course standards far above what we should be able to achieve with the resources that we have here and it is a testament to all of you.

I will really miss Cranbourne Golf Club and will always look back with such fond memories.

Superintendent
Nicholas Douglas



CLIFTON SPRINGS GOLF CLUB

After a long cold winter, we now have all 18 greens back in play. Our two new greens (8 and 9) are now going really well and we are enjoying some growth on them, now that spring is here.

We have also been doing a lot of work on our new turf nursery and have planted 007 Bentgrass recently. I have included a photo of the nursery 20 days after sowing. Pretty happy with the strike so far. Don't need anymore crazy weather at this point.

The past few months we have been extremely busy installing the new irrigation system into the 10th fairway. Our crew helped install the 200mm poly mainline from the pump shed across the 1st and 4th fairways and up the 10th hole. We then installed all the laterals across the fairway, installed sprinklers, valve boxes and wired it to the new



Rainbird IC system. Thankfully everything went well and it works great. This was a great opportunity for the staff to learn some new skills and get some satisfaction of installing things ourselves.

Now after installing the irrigation, we move into the construction of the new chipping green facility. We will be building the green and bunker with our staff and installing the irrigation around the green, which is an extension of the 10th fairway project. As part of the chipping

green project, we will remove all the turf from the area and use it to fix any holes in fairways and rough. We will be using a large amount of the material to plant the right-hand side of the 8th fairway and fill any low areas. Thankfully we have just purchased a new sod cutter, and this will certainly get a good workout. The old one has done a power of work and the Club has definitely had its money worth out of it.

Superintendent
Brendan Brown

CURLEWIS GOLF CLUB

It has been a typical Victorian spring with temperatures up and down, and at least some rain coming over the past few weeks to help get some moisture into the profile after a winter of wind and limited rainfall. The warmth has finally brought about some growth good and bad, with weeds up and about as well as the couch.

Early greens renovation in September almost went as planned, with hosting the Victorian Junior Open in the week prior to the Grand Final putting some pressure on the recovery. We went with a 9mm solid tine to a 150mm, followed by a double verti-cut to 3mm, blow, mow, topdress and brush, with amendments all achieved in the required timeframe I was allowed. Not a lot of love for the grounds staff when renovation is mentioned and carried out (and I reckon, even with more education, golfers still complain).

The Vic Junior Open's four days of two tee starts and then a public holiday on the Friday made for a long week of achieving nothing on the course other than general course

setup (but the other venues looked a treat). Ten on staff made it easier than a similar event years ago when only with four staff. No early starts or late arvo work made for an enjoyable week, even though the wind and showers made golf terrible.

Tee tops have been renovated severely and some warm weather has slowly helped recovery. The 16mm hollow tine, double verti-rake, brush and blow worked a treat (cleaners not impressed at the Clubhouse/ accommodation, but the owner's house was kept clean so all good!).

Our usual fairway spray went well with our normal rate of glyphosate manipulating the winter grass and slowing the common couch up perfectly. Been doing this for the time I have been here. No sign of resistance yet but it seems the fescue is becoming an issue in some areas and choking out the couch.

We have made the move from Goat to resident Brown snake at the work shed, still tossing up which is more dangerous! Maybe the Goat because he continues to haunt all he came across.

Superintendent
Rob Bradley





COBRAM BAROOGA GOLF CLUB

Spring has been its usual unpredictable season along the river with late frosts, heat, wind and, unfortunately, not much rain. All that combined has created dry couch that has hardly grown a millimetre up to the start of November. The green renovations done in late August have gone well, though will take a little longer to recover, but we are always aware of the golf traffic not being affected too drastically.

Late winter saw a few unexpected pump issues which of course money can fix but when it's not in the budget it causes a bit of heart burn. Thanks to the crew at Dekort Pumps who rebuilt our submersible system after we discovered large holes in a pair of non-return valves. In difficult conditions we are back up and running and won't be converting back to sand scrapes.

We are attempting to remove *Poa* from our couch though I'm thinking

we are the 'poster boy' for herbicide resistance. Some have been affected and other plants have never looked better but chuck in some Pythium root rot in the greens - it has made for a frustrating season.

On a positive note, we have just hosted the National Associates Championships on the West course and from all reports the players have been happy with the quality of our greens, which is satisfying for the team to hear. Like every tournament, there was a week of

early starts and extra hand work on bunkers to have the course look its best (after a week of brooming and hand raking, I'm really feeling my age). The Club's tournaments run certainly gives the crew a renewed focus and will always bring out their best, so well done to my team.

Good luck to everyone over what will be a difficult summer. Fingers crossed for a bit of rain.

Superintendent
Terry Vogel



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COURSE REPORTS

COMMONWEALTH GOLF CLUB

Over the past few months, our team has invested a significant number of hours hand-weeding the greens to keep *Poa* at bay as we transition into the warmer months. The crew has taken great pride in maintaining the greens to a pure surface, and their collective effort has made a noticeable difference. We've found that using forks has been particularly effective for removing *Poa* with minimal disruption to the surrounding Pure Distinction turf.

In addition, we've been focusing on renovating the bunker edges, particularly around the greens. Our aim has been to return sand up and into the green edge interface, creating the smooth, clean transitions between bunkers and putting surface that our members love.



Following the winter clean-out of our irrigation dam, we're pleased to report that the 40ML dam has now been completely refilled using our four bores. Our first growth-regulation application has recently been applied across all couch grass areas on the course, taking advantage of the recent warmer weather to maintain density and presentation. Meanwhile, our Landscape and Biodiversity Manager, Robert Burke, and his team have been making

outstanding progress on their planting plan, installing over 15,000 plants in recent months. Thousands of Wallaby grass seeds have been grown into the three redeveloped carry ways with a high success rate. Their dedication is really paying off, with strong growth and vibrant results becoming increasingly evident across the property.

Foreman
Tom Carroll





use it as a feature of the course, providing some colour contrast amongst the heath.

Early in the project while clearing overgrown Melaleuca tea tree we found two rifle butts. We preserved them and now have them as a hazard in a fairway. We engaged with the historical society who found bullet casings scattered the whole way up the fairway. Turns out there was a rifle club dating back to 1911 who shot down towards the sand dunes. It's a unique feature that we are proud to showcase, however, I think the tourists might use it as a cart jump.

Another project completed was the bridge over the 'plumbers crack'. I have some skilled volunteers who used old timber power poles, sleepers and rails from the old soccer grandstand. Old sleepers from the streetscape renovation in town were also used for our hole signs. They add character and it's nice to have pieces of Mallacoota around the course.

Superintendent
Aaron Donovan

MALLACOOTA GOLF & COUNTRY CLUB

After five years of having a temporary course post bushfires, we finally opened the last holes to make a full 18. It was just in time for the Club Championships and, in true Mallacoota fashion, we toasted the A-grade winner and the new course development with Tia Maria.

Several bottles later we were even toasting the whales going past. Some of the surrounds and tees are a bit patchy but another summer will fill in the gaps around the greens. As for the fairways and rough, we've chosen to embrace the Mallacoota white pipe clay and





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KOORINGAL GOLF CLUB

The course team has been hard at work completing course renovations and progressing with the ongoing CEP works around the 16th hole and 17th tees. The team has brought great commitment and energy throughout these works.

All greens, tees and selected green surrounds were recently cored and topdressed, while other surrounds were verti-drained and topdressed to improve surface performance. Fertility programs have been applied to greens, tees and surrounds, and selected high-traffic and newly turfed areas were also dressed to smooth out wear from winter. Verti-cutting of all fairways were also completed through the week, followed by circle cutting to clean up the surfaces.

Major work has been carried out as part of the CEP project. New tees at the 16th and 17th have been built, along with reshaping the 16th green surround. Unwanted thatch was stripped and buried in out-of-play areas and native sand was mined on site for reuse throughout the project. New irrigation has been installed at the 16th tee / green surround and the 17th tees - with all shaping works finished on 31 October.

Three bunkers became two reconstructed bunkers with Bunkerdrain liner. The surrounds of the green were also reshaped with native mined sand, adding in a ridge across the back of the surround which will be seeded with a mix of bent, fescue and Wallaby grass to create a natural

screen at the back of the green. The unsightly maintenance path was relocated across the other side to the 17th tees allowing for shortgrass linking from the 16th green to the 17th tees. We have also continued our sand waste program through the out-of-play areas on both the 16th hole and 17th tees.

Tree works have also been completed, including the removal of a large, failing Mahogany gum on the right of the 6th hole and the framing up of a number of Aleppo pines, which are fast becoming a strong visual feature across the course.

An additional 40mm of rainfall this week has given the course a healthy boost heading into the warmer months, helping maintain strong recovery and growth across all areas.

Assistant Superintendent
Douglas Loton



COURSE REPORTS

MOONAH LINKS

In the last three months on the courses, the focus has been to complete our winter works program that has included irrigation upgrades and repairs, bunker and cart path improvements, tree work and wasteland restoration.

All our preventative spraying is up to date for this time of year and the greens renovation has been completed with a 8mm hollow tine, and recovering well in good time.

Moving forward, we have the Vic PGA tournament in the second week of December, along with



a busy schedule including numerous corporate days heading into summer. The now completed winter works, however, have left us in a great position for what lies ahead.

Superintendent
Rick Lee



MANSFIELD GOLF CLUB

Isn't it the best feeling when winter is finally finished and the temperature starts to increase. Winter just seems to drag on and on but we didn't have much rain, so we managed to get plenty of jobs completed and set ourselves up for the growing season. We are currently 197mm behind last year's total so we are going into

spring green but there is very little moisture in the subsurface.

We have been focusing on repairing areas that the carts have worn from last summer. The amount of carts here has doubled in recent years and the wear patterns are showing, so we will need to continually rope areas off to direct carts elsewhere.

We are currently preparing for the Club Championships and the course

is coming up a treat. Growth is an issue as the temps are still pretty cool (soil temp is at 13 degrees), so the couch is still trying to wake up but you can definitely see the place has popped over the last two weeks. Bring on the warmer weather.

Superintendent
Tony Cooksey



METROPOLITAN GOLF CLUB

The past few months have been a productive period at Metropolitan, with favourable growing conditions arriving to support turf recovery and ongoing improvement works across the course. The team has been focused on greens renovations, drainage installation and bunker refurbishment as we head into the busy summer and Club Championship period.

Recent works included topdressing the greens to smooth any imperfections or turf lines carried over from the reconstruction work over the past two years. Approximately 2.5mm or 75 tonnes of sand was applied and worked in by hand using level lawns.

Bunker refurbishment has also been a key task, involving the removal of excess sand from faces and releveling after the recent windy conditions in Melbourne. Low-lying and high-traffic areas were aerified using the Air2G2, while minor projects from the GRP/CEP

works continued, including the relocation of irrigation within newly shaped areas.

With renovation works now complete and conditions ideal for growth, the team's focus has shifted to preparations for the upcoming Club Championships. Green speeds, mowing heights and overall presentation standards are being fine-tuned to ensure the course is presented and plays to a championship standard.

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WHITTLESEA GOLF CLUB

As many of you know, Melbourne has had pretty interesting weather the last few months. It could be warm, dry and sunny then cold, winter like conditions and rain the next, sometimes even over the course of a day! This has meant we have seen some *Rhizoctonia* appear, so we have had to do some extra sprays between our normal preventative schedule. It's also meant we had to transfer water from our back dam to the front holding dam, as it has been incredibly dry. It took a few days to get the pump up and working but it's running well. As I speak, however, the rain is falling and we are seeing some natural topping up of the water reserves too (which is great) but we need a lot more.

October kept us busy prepping the course for Club Championships

held over several weekends. A lot of mowing, marking, cleaning and general maintenance saw the course looking its best and many members commented it may be in the best condition in recent years. The ground staff appreciate positive feedback and it really does provide a morale boost (see photos of how the course has looked). A lot of green fee players coming through have been positive also and I think the course condition speaks to that. I manage the social media page for the Club and, although I don't get as much time to do it as I like, even just a few pics every so often seems to get new faces through the gate.

We have also been spraying Capeweed and manually picking out Starweed which is difficult because there's nothing that can get rid of it, that we know of, which

won't kill *Poa* and bentgrass. We are trialling some spot spraying to see if that will work.

In other news we have had a resident pelican take up his spot on the fountain base in our 4th dam. Funny to see a pelican in the bush but it's a great sight to see. This time of year we see the Latham's snipe come from Japan to escape the winter and rest in our dams for the summer. That's when we know the weather will turn soon. It's amazing the amount of bird life we see and, as a few of us are into bird watching and photography, it's pretty awesome to see things while at work!

As I'm sure we all do, I look forward to the warmer weather and pleasant working conditions ahead. Have a great summer everyone.

Assistant Superintendent
Dale Tucker



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