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#### **Australian Turfgrass Management Published by:**

Australian Golf Course Superintendents Association ABN 96 053 205 888

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Printed by: Paragon Australasia Group 152 Sturt Street Southbank Vic 3006 Australia



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#### **COVER:**Barnbougle Dunes

Looking back down the massive expanse of the 6th hole at Barnbougle Dunes in Tasmania. In just two years since its opening, Barnbougle has risen to become one of the most talked about designs in Australia for the past 20 years. In Volume 9.1 ATM discovers out why.

Cover Photo: Brett Robinson



TURFING TASMANIA
Beauty and the Beast –
Barnbougle Dunes

Course superintendent Danny Brown doesn't struggle to get out of bed these days. Not surprising really when you consider he works at one of the most widely acclaimed public access courses in Australia and the world – Barnbougle Dunes. ATM editor Brett Robinson catches up with Brown to see what it takes to maintain a wall-to-wall fescue course that can by serene and idyllic one minute and raw and savage the next.

#### Challenging Times for Tassie Supers

2006 has been an extraordinary year for Tasmanian golf courses and their superintendents. Water and weather have dominated the agenda, while a number of new golf course developments are set to further highlight the state as a golfing destination. ATM spent a week touring around Tasmania in mid November to see just how the industry was faring in these challenging times.

#### Golf Course Flora and Fauna Conservation 20

Andrew Richardson takes a look at some of the fine conservation work being undertaken at Woodlands and Royal Melbourne golf clubs and outlines strategies golf clubs can employ to improve the flora and fauna conservation value of their land.

#### OPINION

The Pulse

26

Communication is a critical tool for the modern day superintendent, particularly when it comes to dealing with greens committees and club boards. ATM asks five superintendents some of the more effective and least effective ways of communicating with the powers that be.

#### RESEARCH

12

Soil Physical and Chemical Characteristics of Aging Golf Greens 38

While many research projects are conducted for two or sometimes three years, it is rare when a research site is evaluated for more than five years. University of Nebraska researchers have been able to evaluate the long-term microbial, chemical and physical characteristics of structured research greens ranging in age from one to eight years.





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#### **PICTORIAL**

Open gets the Royal Treatment

ATM takes a pictorial look at the 2006 Australian Open which returned to Royal Sydney Golf Club in November.

#### IN EVERY EDITION

Foreword Thinking	4
AGCSATech Update	28
Tech Talk - ISO 14001	32
News	48
Around the Trade	50
State Presidents' Reports	52

Contributors to Australian Turfgrass Management Volume 9.1

Danny Brown (Barnbougle Dunes) Brett Burgess (Hutt GC) Jon Carter (Wanneroo GC) Rod Cook (The Grand GC) Roch Gaussoin (Uni. Nebraska) Danny Gilligan (Tasmania GC) Matt Hanrahan (Geelong Grammar) Peter Harfield (Blackwood GC) Justin Haslam (TGAA ACT) Phil Hill (Launceston GC) Andy Hugill (Mona Vale GC) Jeff Lane (Joondalup Resort) Jason Lewis (Uni. Nebraska) Stephen Lewis (Royal Hobart GC) Graeme Logan (TGAA NSW) Tv McCllellan (Uni. Nebraska) Brad Marsden (Clifton Springs GC) Peter Medwin (Riverside GC) John Neylan (AGCSATech) John Odell (Roval Sydney GC) Andrew Peart (AGCSATech) Mark Potter (Claremont GC) Mark Prosser (VGCSA) Andrew Richardson (OSEcology) Peter Ruscoe (TGAA WA) Robert Shearman (Uni. Nebraska) Tony Smith (Mowbray GC) Brad Sofield (Gosnells GC) David Warwick (Avondale GC)

Leonard Wit (Uni. Nebraska)

## great southern land

ack in November I was lucky enough to spend a week in Tasmania. Aside from taking every opportunity to devour as much seafood as I could (one of the drawbacks of having a wife who is vegetarian) I was able to impose myself on a number of Tasmania's finest turf managers who proved more than obliging with their time to show me around their patch of turf.

Any golf-related trip to Tasmania these days isn't complete without a pilgrimage to the Tom Doak-designed Barnbougle Dunes just outside the small northern coastal hamlet of Bridport. If you haven't been there, what they say about it in all the golfing magazines is spot on. The only thing the magazines don't nail is just how incredible the site is. It truly is a case of needing to see it with your own eyes.

The drawing power of Barnbougle can't be underestimated, a fact which was hit home to me while I was out taking photos of the course for this edition's cover story. As I normally do when I take photos of a course I will walk all 18 holes from tee to green, snapping along the way and taking down notes of some of the better vantage points to which to return to later on. Anyway, on my first reconnoitre I happened to follow a foursome of middle aged gentlemen who let's just say were getting their money's worth (I think by the fifth hole all four had surrendered at least one ball to the mountainous marram-covered dunes).

It wasn't until they had putted out on the 17th that one of them came up to me and inquired who I was taking photos for and whether I would be able to take a happy snap of him and his mates on the 18th. They turned out to be four English gents in their mid 50s, one of them a doctor, who were in Australia to follow the fortunes of their beloved England in The Ashes. With a couple of days to spare before jetting off to the second Test in Adelaide, they had flown into Hobart early that morning (a Monday), driven three-and-a-half-hours to Barnbougle Dunes, teed off around 2.30pm, finished around 6.30pm and were then planning to drive back to Hobart that evening to catch an early flight out the following morning (in hindsight they probably would have preferred to play another round at Barnbougle had they known what would transpire on the fifth day in Adelaide!).

As the song goes, 'Mad dogs and Englishmen go out in the midday sun'. It also seems they will traipse halfway round the world to play golf! When asked how they found out about Barnbougle, one of them said they had read about it in a magazine. "We just had to come and play it," he said. "It looked remarkable. Playing it is even better."

If there's one man who knows about the appeal of Barnbougle Dunes more than most, it would have to be course superintendent Danny Brown and in this edition we profile a man who has one of the most enviable jobs going. Our cover story on Barnbougle kicks off a tour of the island state where we take a look at how Tasmanian superintendents are faring in a time when water, weather and resources have all been major talking points in 2006.

In light of my trip down south, I would like to make special mention to all those turfies who were extremely generous with their time. To TGCSA president Peter Medwin (Riverside GC), Phil Hill (Launceston GC), Tony Smith (Mowbray GC), Mark Potter (Claremont GC), Stephen Lewis (Royal Hobart GC), Danny Gilligan (Tasmania GC), Cameron Hodgkins (Bellerive Oval) and Danny Brown, I doff my hat to you and your respective crews for your hospitality and the great work you are achieving down there.

Finally, some of you may be thinking that this edition, Volume 9.1, has hit the letterbox a bit early. Well you can be rest assured it hasn't. In order to bring the magazine more in line with the

calendar year, we have recently changed production dates and as such this edition replaces what would have been Volume 8.6. Enjoy the read. Merry Christmas.



Brett Robinson Editor

Best wishes for the festive season and the coming year

he environmental incident that occurred at Warringah Golf Club in February 2001 and the ramifications for the club, the board and superintendent highlighted the fragility of our environment and the inherent risks of maintaining a golf course. A simple error of judgement and the world looks at the results and points the finger at the turf industry as 'environmental vandals'.

Our industry is under close scrutiny and with the current water restrictions and widespread drought, golf courses are again being considered as wasteful and environmentally irresponsible. In general this is absolutely untrue, but the problem we face is how to combat these perceptions and improve the understanding of golfers, the general public and environmental regulators?

We must be proactive and the AGCSA's Environmental Management Initiative is a means by which the golf course industry can demonstrate and publicise industry best practice. The initiative is a programme devised by the AGCSA and Golf Australia to promote good environmental management practices within the industry as well as to those outside of the industry.

The initiative is now well underway with the completion of the first round of environmental management system (EMS) workshops with 120 golf clubs having started the development of an EMS. The challenge now is to maintain the initial enthusiasm and momentum by continuing to dedicate the time to developing the system. It will never be finished, but it will be a living, breathing document that has day-to-day relevance in the work place.

While environmental management and water continue to dominate the industry, another issue the AGCSA has been keeping an eye on is in regards to the new Howard Government industrial relations laws. In recent times there has been the summary dismissal of several golf course superintendents with few or no reasons other than "you're not the man for the job anymore".

In the past there would have been protection under the "three strikes and you're out" law and some assurance there were redundancy payouts and some financial compensation if times were bad. Unfortunately what we have seen is superintendents called in and told to pack their bags with few explanations. It is becoming clear that what is more important than anything is the contract you have in place between you and your employee. If you haven't sighted your contract in a while it might be the time to revisit it sooner rather than later.

The AGCSA is currently developing an up-to-date template contract as a reference for a fair and equitable arrangement between you and your place of employment. This will be available on the members' section of the AGCSA website early 2007.

Also of note is that AGCSA membership manager Paula Dolan is conducting a ring around to follow up on some members that where unfortunately missed when membership renewals were sent out for the 2006-07 year. The calls thus far have provided some great insight into your thoughts of the AGCSA and will add to the recent member's phone survey.

From that survey, a number of future projects planned by the AGCSA were well



received, including a website that compares turf products and the formation of an HR Department that will produce templates for turf managers, support for conflict resolution and provide recruitment services. These services and products are planned to be introduced during 2007.

The survey also picked up that our country members find it hard to come to education days/conferences which has led the AGCSA to start thinking of ways to bring education to members. In 2007 we will start producing DVD education sessions that can be sent to members to overcome these geographical challenges.

Finally, the 2007 Turf Management Diary has been distributed during December. Give your state association a call if you haven't received your copy before 2007 starts. From the staff and board of the AGCSA, we wish you a great Christmas and rewarding 2007.

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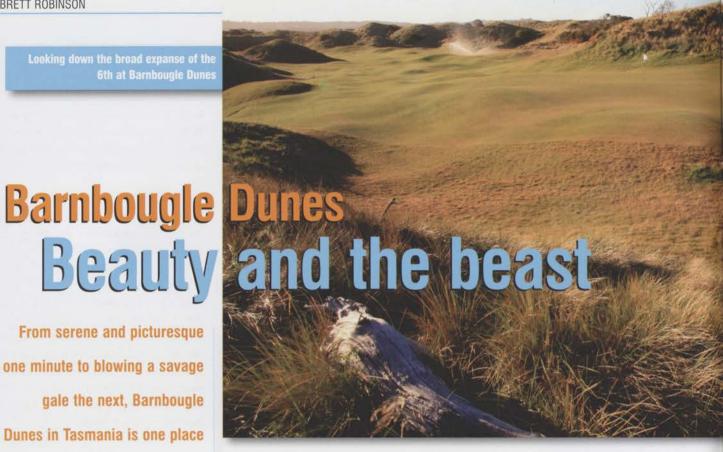
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Looking down the broad expanse of the 6th at Barnbougle Dunes

From serene and picturesque one minute to blowing a savage gale the next, Barnbougle Dunes in Tasmania is one place where being a turf manager can really put you through the ringer. Fortunately for course superintendent Danny Brown it's all part of the charm and challenge of looking after one of Australia's most talked about public access golf courses. On a stunning mid-November day, ATM editor Brett Robinson dropped by Barnbougle and quickly discovered why it's difficult to wipe the smile off this particular superintendent's face.



e probably has one of the more enviable positions going in the turf management industry. It's not every day that you go to work on a golf course ranked inside the world's top 50 and every now and then you'll find Danny Brown pinching himself and still ruminating how exactly he managed to land such a sweet job.

As Brown admits, in the two years he has been course superintendent at the widely acclaimed Barnbougle Dunes, he has never struggled to get out of bed to come to work. When you actually see the course for the first time it soon becomes apparent why the 'snooze' button on Brown's alarm would get little if any use.

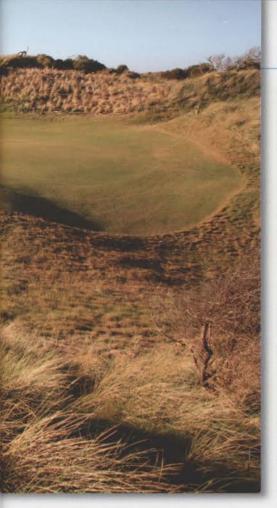
Of all the golf courses built around Australia over the past 20 years, none has attracted quite as much attention as Barnbougle Dunes. When the idea for a course on the remote northern coast of Tasmania was first mooted there were many who said the venture would fall over. Certainly it was an extremely risky project for all those involved and flicking through the pages of 'Barnbougle Dunes: The Beginnings', a book detailing the history behind the course's founding, makes for extremely interesting reading.

One of the great anecdotes from the book, which is compiled by three of the key figures behind the development - Mike Clayton, Tom Doak and Brian Schneider - involves Richard Sattler, owner of the property on which Barnbougle resides.

The story goes that when he was presented with the final contract to sign, he took a look at the opening page before enquiring of Clayton, "Do you trust me?" The reply came back "Yes", to which Sattler replied "Well, I trust you guys, so there won't be any need for this" and the contract ended up in the bin. Sattler did however ask one small favour of the designers and developers before granting final approval - "Just don't stuff it up."

Far from stuffing it up, Barnbougle has developed into one of the shining gems of Australian golf. Attracting golfers the world over, Barnbougle debuted at 49 in the world's top 100 courses list, while in the latest Australian Golf Digest rankings it was adjudged Australia's seventh best.

Playing a significant role in achieving that stature has been Brown and his maintenance crew. Although it hasn't quite sunk in yet that the course they work on every day is so highly rated by many of golf's luminaries, Brown says it's a great feeling and one which makes his team strive to continually improve and finetune their turf management and maintenance operations.



#### BARNBOUGLE BOUND

The road to Barnbougle has been pretty extensive for Brown, with stints at no less than six clubs before making the journey south to Tasmania.

His turf management career began up on the Murray under Wade Leech at Rich River Golf Club. After getting an early release from his apprenticeship there, Brown ventured down to Melbourne in late 1996 where he was taken on by Richard Forsyth at Metropolitan Golf Club. On the Metropolitan staff at the time was assistant superintendent Stephen Newell (now superintendent at Kooyonga Golf Club in South Australia), while 3IC was Sam Myott, now superintendent at The Heritage Golf and Country Club. Also on staff was a young chap by the name of Leigh Yanner.

After a period at Metropolitan, during which time the course hosted the 1997 Australian Open, Brown went across to Victoria Golf Club. Promoted to foreman, Brown then took on the assistant superintendent role at Rosanna Golf Club.

In 2001 the superintendent position at Maryborough Golf Club in country Victoria

Looking down towards the par 3 16th from the highest point on the course

became available and after short period there Brown moved south to Torquay Golf Club. Shortly after starting there in March 2003 he received a phone call from John Sloan who pricked his conscience about a new development called Barnbougle Dunes.

Ironically, Brown ended up being interviewed for the Barnbougle job on the day that the course was officially opened in mid-December 2004. Less than a month later he had moved to the nearby town of Bridport, boasting a population of just 1500, having secured the job and replacing construction and grow-in superintendent Nathan McDonald.

"It was a strange day," recalls Brown of his job interview. "I remember sitting down the back on that opening day listening to all the speeches saying how good this place was going to be. I was shaking my head thinking 'There's no way I'm going to get the job, the former superintendent will surely change his mind.'

"He didn't and I guess I was just in the right place at the right time, so I was pretty fortunate. I've now been here coming up two years which is my longest stint as a superintendent. I think I'll be here a while yet."

While Brown had heard plenty about the Barnbougle development before he was approached to become superintendent, nothing could quite prepare the then 29-year-old for his first visit to the site.

"I had heard a lot about the project and the comments from many people who were saying it wasn't going to work and so on," says Brown. "I had seen plenty of pictures, but when I first saw the course with my own eyes I was flabbergasted. Taking that first walk around was quite unique and you quickly realise that Barnbougle is a special design on a special piece of land.

"It's certainly a remarkable track of land to be superintendent of and I'm lucky enough to see it every day. It's the sort of place that can rip your guts out in one instance and then cheer you up immensely the next."

#### LINKS LEGACY

From a golf course superintendent perspective the most unique feature of Barnbougle is not only the terrain but the turf. With perfect sandy soils and a temperate coastal climate, the designers and developers chose to keep an authentic links feel with their creation. As such, the course was completely hydroseeded with varying blends of fescues and bentgrasses with the aim of producing a seemless links-style cover. The only delineation between rough, fairway and green is the height at which they are cut (greens are mown at 5.5mm and fairways and tees at 13mm).

The greens are a mix of New Zealand browntop bent, SR5100 chewings fescue and slender creeping fescue, while the tees and fairways (all 20 hectares of them) are a blend of SR5100 chewings fescue, Crestlawn creeping red fescue and highland bent.

Having primarily worked with couch fairways and bent greens in his previous postings, Brown has become a quick learner when it comes to managing a course which is one of the only layouts in Australia and the southern hemisphere that boasts wall-to-wall fescue.

"It has certainly been interesting and the challenges are different," says Brown. "You



just don't know what you'll get each day. The changes in colour throughout the year are quite striking. The fescue turns purple when we get frosts.

"It's the sort of turf that can be very tough and hardy and at the same time it can be a real sook. For example, when it starts to brown off during the heat of summer, a little bit of wetting agent will bring it back very easily.

"My job is becoming a lot easier each day as the course matures and hardens up. In the first two years it behaved like a two-year-old infant and in the third year it turned into a 16-year-old teenager. Now in its fourth year it feels more like a 40-year-old which can look after itself. At the beginning it feels like it's a really slow starter but all of a sudden it goes 'bang' and toughens right up.

"Everyday it seems to be getting better and the seedhead is getting stronger as the turf matures. You can come back after three months and the course has changed. When it first opened it looked like it had been here for 50 years but you knew it hadn't when you looked at the turf.

"It constantly evolves and takes on a new shape. You can do different things to it, too. You can grow grasses around bunkers to give it a more rugged appearance or you can cut them down. You can slash back the marram or let it grow. It can really change depending on what sort of mood you're in."

Being carved out of sand dunes, the course does throw up a few problems for Brown when it comes to managing the turf. The marram grass which blanketed the site prior to construction can be extremely voracious – Brown has pulled some plants out with runners up to 30ft long – which has caused a few encroachment issues.

The most notable encroachment is on the teeing areas which in most cases are nestled among the natural dunes and are completely surrounded by marram. Brown and his crew remain vigilant and actively slash areas around the tees to keep on top of the problem. As an aside, during construction, to remove the marram grass, sections were torched in controlled burn offs and the sand then tilled and sifted through to remove the root system before hydroseeding.

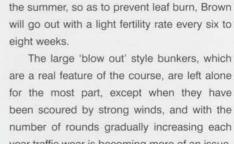
Barnbougle Dunes superintendent Danny Brown



#### LEAN AND NATURAL

Maintenance practices at Barnbougle are in line with one of the overriding philosophies of its principal designer Tom Doak – minimalist. Brown operates a very low fertility programme with minimal fungicide applications. If there's an outbreak of fusarium or brown patch, Brown is more inclined to leave it and live with the discolouration of the turf. The only spraying Brown has done in recent times to combat an outbreak of cyanobacteria which appeared in the greens and approaches.

Having a seemingly endless supply of dune sand, greens are dusted frequently – Brown says that sometimes he'll arrive at the course to find the greens have been dusted naturally courtesy of gale force winds which



can buffet the course - and vertidrained,

although the fescue isn't prone to excessive

thatch accumulation. When he doesn't dust in

year traffic wear is becoming more of an issue. Brown says it's amazing how compacted sand can get and the areas between tees and fairways are regularly vertidrained to relieve the problem.

The cou

"The course is now at a stage where it pretty much looks after itself," says Brown. "We don't over manicure it. Some people might call it lazy manicuring, but golf courses are natural and this is natural as they come. It's on such a natural piece of land that we have to try and blend it in without doing to much to it.

"We don't roll greens. We only cut, and never double cut. We cut greens five times a week in the middle of summer. At 5.5mm we can't afford to cut them every day and get them super quick because if the wind gets up balls will blow off and the punters will stay at home. We have a lot of comments about the pace of the greens, but we tell them, wait until you play the course in the wind and then you'll know why they're a bit furry.

"Tees and fairways are cut once a week at 13mm. We try and create the appearance of a seemless merge between fairways and greens. We certainly don't stripe the fairways up. That would look silly."

Helping Brown maintain Barnbougle is a crew of 10 which expands to 12 over the summer months. Brown is assisted by Kurt Wheeler, while mechanic Michael Hogarth maintains a modest fleet of mostly Toro equipment. The maintenance budget for the



course is pretty small – Brown says it's no more than \$500,000 – with wages taking up the majority of that figure.

One of the joys of being a public access course too is that Brown doesn't have to constantly report to a greens committee. Instead he will sit down with Sattler and two of Barnbougle's other investors, who are heavily involved in golf, every month or so.

"I'll send them a greens report, they'll fire some questions and a few minutes later we're out of there," says Brown. "We have a great relationship, but I suppose I'm still in a bit of a honeymoon period at the moment. Touch wood, at the moment everything is going okay and the turf is doing the right thing by me. It's holding up to the wear and lack of rain and showing its true beauty."

#### CHALLENGING CLIMATE

Not surprisingly, weather plays a key role when it comes to maintaining Barnbougle. As Brown says you can look east and think "How good is this" and in the same moment look west and go "Oh my God". For the most part the climate

#### THE BARNBOUGLE BLENDS: IT'S ALL IN THE MIX

#### **GREENS**

SR5100 chewings fescue 40% NZ browntop bent 30% Slender creeping fescue 30%

#### TEES AND FAIRWAYS

SR5100 chewings fescue 50% Crestlawn creeping red fesuce 40% Highland bent 10%

#### ROUGHS

SR5100 chewings fescue Crestlawn creeping red fescue

is pretty temperate – almost Mediterranean according to Brown's wife Nicole – but should a prevailing westerly decide to blow its guts out then it's not the most pleasant place to be, particularly if you've just travelled a couple of hours for a round.

Although the course is coastal, because it's on the northern coast of Tasmania you

rarely get a sea breeze which Brown says takes a little getting used to. Summer nights are mild and days hot – "25 degrees going on 35 if you know what I mean," says Brown. In winter it's a different place altogether and just this year the course suffered in excess of 40 frosts, including two as late as mid-November.

Just like the rest of Tasmania, Barnbougle has experienced a very dry 2006. With rainfall levels down by almost 50 per cent across most of Tasmania, Barnbougle had recorded just 355mm to November. "Last year we had over 800mm," exclaims Brown. "We only had 33mm in October-November compared with 209mm for the same period last year. As I've only been here a couple of years I'm not quite sure what is the norm, but I'm hoping like hell that 2006 is the exception."

Despite the dry conditions, water is one of the few things Brown has to worry about (another reason for superintendents to envy him). An abundant water supply comes from the adjacent Sattler property which is distributed by a Toro irrigation system which has been fine-tuned to suit the site.



#### >>>>>

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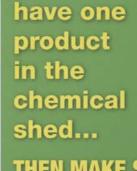
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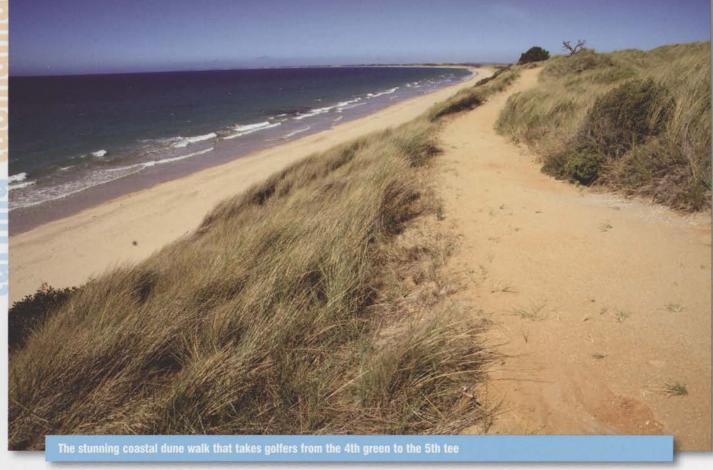
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#### ■ LOVE IT OR HATE IT

Not only can Brown appreciate the course from a turf management perspective, he can also appreciate its appeal as a challenging and sometimes brutal test of golf. A former pennant player for Rich River and Latrobe golf clubs during his younger days, Brown still plays off a four handicap and just this year helped the local Bridport Golf Club pennant team secure a flag.

"When I first played Barnbougle it was very hard and fast and really rewarded the ground game," says Brown. "It's all about touch and feel around the greens and if you have a good short game you will shoot well. But it's really tough, particularly when the prevailing wind gets up. That combined with the terrain, it's like playing the game as it was back in the old days of links golf."

While the old school links style of course doesn't appeal to all golfers, or superintendents for that matter, if there is one thing that Barnbougle has achieved since opening its fairways, it has been to put Tasmania firmly on the map as a golfing destination both nationally and internationally.

Barnbougle's success has sparked a number of other golf developments which are

currently in varying stages of progress. Greg Norman is constructing a new course just outside of Orford, about 70km north east of Hobart, while the design firm of Thomson and Perrett are in the midst of turning the nine-hole Greens Beach course north of Launceston into an 18-hole course.

Continue an hour or so east from Barnbougle and a massive ecological resort development at Musselroe is also in the planning stages which will include an 18hole championship golf course designed by Clayton.

Of more interest to Brown, however, is the possibility of a second course on Sattler's land adjacent to Barnbougle. The prospective land lies east of the current course across a small inlet which runs down beside the 15th and 17th holes.

"It's perfect golf land and knowing that could be just around the corner is very exciting from a superintendent point of view," says Brown. "But Richard's in no hurry and I think we'll know more about it during 2007. But if it's as half as successful as Barnbougle has been,

you'd put it in yesterday." 44



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During November, ATM editor
Brett Robinson packed his
bags, jumped on a plane and
found himself in Tasmania.
Cruising the state for a week,
he caught up with a number of
golf course superintendents and
discovered that 2006 has been
a particularly testing year.



## Challenging times for Tassie

here are a few things that strike you about Tasmania when you visit there for the first time. First, it's hard not to notice the amount of road kill (coming from New Zealand as I do, I can safely say Tasmania wins hands down on sheer volume). Second, you have to admire the breakneck speed at which some of the logging trucks drive at (take note any who plan to venture out to have a round at the much talked about Barnbougle Dunes).

But there are a few other interesting facts that are of more relevance to readers of Australian Turfgrass Management. First, it's dry. Bloody dry. Flying into Hobart to spend a week travelling around Tasmania where I was to catch up with a number of golf course superintendents, I couldn't get over while cruising 33,000 feet above just how parched the land was. More on that later.

The second interesting point comes when you peruse the Golf Tasmania brochure produced by the state government. Yes, there is a brochure promoting Tasmanian golf these days which just goes to show how much of a golfing destination the small island state is fast becoming. More on that later too.

While perusing the brochure as we made

out descent into Hobart, I almost choked on my apple and cinnamon muffin. For a population of just 480,000, Tasmania boasts a total of 76 golf courses. Of that number, a staggering 62 are nine-hole courses of which only five are located in the main centres of Launceston and Hobart. The rest are all dotted around the countryside from Smithton in the far north west, across to Freycinet Golf Club on the east coast and down to Dover Golf Club, the southern most course in the state. There are even courses on the remote Flinders and King islands!

By contrast, there are just 14 18-hole courses – four in Launceston, three in Hobart, two south of Hobart, four on the northern coast stretching from Seabrook Golf Club near Wynyard to Barnbougle Dunes near Bridport, and one about to open in 2008 near Orford north east of Hobart.

Ask any of the superintendents at the 18-hole courses why there are so many nine-holers and they all say the same thing – "it's just one of those things down here."

"Every town with a population over 300 has a course because people don't want to travel long distances to play," explains

recently appointed Tasmanian Golf Course Superintendents Association (TGCSA) president Peter Medwin, superintendent at Riverside Golf Club in Launceston. Medwin should know too. Growing up in Smithton in the state's far north west, the first 17 years of his turf management career was spent at nine-hole courses in Stanley, Smithton and Wynyard.

From a state association perspective, such a phenomenon has a number of implications and combined with the other pressing issues the industry is facing – water management, environmental management and the weather, just to name a few – it makes for some interesting and challenging times for the boys who ply their turf management trade in the island state.

#### THE STATE OF PLAY

Ask Medwin how Tassie supers have it at the moment and his answer is almost immediate. "I don't think we've have ever had it easy," he says. "Every club is battling for dollars at the moment which has ramifications across a number of areas."

Feeling the pinch most are the 18-hole



Claremont Golf Club in Hobart, is one of just 14 18-hole golf courses in Tasmania. The state, which has a population of only 480,000, also boasts an incredible 62 nine-hole golf courses

nine-hole courses comes into the equation," says Medwin. "The likes of the Launceston clubs have pretty good membership numbers, but they're only charging around \$700 a year. And there's no joining fee. Compare that with some of the mainland courses! I don't think Tasmanian golfers appreciate how good they have it down here.

"Unfortunately the 18-hole clubs can't put membership fees up too much or else they will lose members to a lot of the nine-holers some of which charge only a couple hundred dollars for membership."

Reflecting the low maintenance budgets are staffing levels across the state. Aside from Barnbougle Dunes which boasts 10 staff (that number increases to 12 during the summer months), the majority of the other 18-hole courses are lucky to have more than five.

Phil Hill at Launceston Golf Club has a staff of five, Riverside has four including Medwin, while the other major Launceston club, Mowbray, has three including superintendent Tony Smith. Down in Hobart, Stephen Lewis is seemingly lucky to have a staff of six, Danny Gilligan at Tasmania Golf Club is one of four on staff, while Mark Potter at Claremont has a 2IC and two apprentices.

"But that is probably why we're really productive," continues Medwin. "Tassie supers are used to working with small budgets and even smaller staff. It's purely a money thing. But what you will find is that these guys are continually producing the goods.

"Next year Launceston will host the Australian Teams Championships and the Australian Colts are at Mowbray. Here are two courses that have got eight staff between them, yet you'll know they'll do a good job because that's just the way they operate. Devonport recently held the Australia Ladies Amateur and received great wraps."

From a TGCSA perspective, Medwin says membership has remained static in recent times and the committee is looking at ways of convincing the nine-hole guys of the benefits of joining the association. Generally, the nine-hole courses are either maintained by one person or are looked after by member volunteers.

"We only charge \$65 to be a member so hopefully if we get a few more of them on board then the AGCSA might get some flow on from that," says Medwin. "We're also getting a good run with councils, some of whom came to the Brisbane conference this year.

"The big killer in Tasmania is the distance. Smithton is the furthest golf course in the north west of the state and it takes five hours just to get to Hobart. Even for the Hobart boys to come up to Launceston, and they always do, is a five hour round trip."

While distance can be problematic,

## supers

courses. While membership numbers are reasonably healthy, most are hesitant to increase annual fees which from a superintendent's perspective means maintenance budgets are tight and lean.

"This is where the problem of having so many



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particularly when it comes to drumming up numbers for state association days, there is little doubt that the TGCSA group is a tight knit bunch. One of the advantages of being somewhat isolated and therefore protected is that many of Tasmania's superintendents have been around the industry for a long time and most have worked together at some stage.

Indeed, you only have to take a look at the likes of Hobart-based superintendents Danny Gilligan (Tasmania) and Stephen Lewis (Royal Hobart) to come across a couple of veterans.

The Gilligan name has been synonymous with Tasmania Golf Club since its inception in the early 1970s. Ted Gilligan, one of the driving forces behind the formation of the TGCSA, was superintendent from 1973 and when he retired in 1989 he passed the reins to son Danny who had served his apprenticeship under his old man. (As an aside, Ted now happily resides in up north in Devonport). Danny has remained superintendent since and just recently notched up his 30th year. Likewise, just down the road at Royal Hobart, Lewis is one year shy of notching up 30 years at the one club and come January will enter his 20th year as superintendent.

Mark Potter, superintendent at Hobart's Claremont Golf Club for the past 15 years, started out his career working under Lewis at Royal Hobart, while up in Launceston, Phil Hill was at Mowbray for 15 years before moving across to Launceston. Working under him at Mowbray was a young apprentice Tony Smith who would go on to take over from Hill.



#### AN EXTRAORDINARY YEAR

2006 will go down as a year most Tasmanian superintendents would rather forget when it comes to weather. Across the board, 2006 has been one of the direst years on record for the state with most centres recording less than 50 per cent of their average rainfall.

Medwin, who has spent 45 of his 52 years in the northern reaches of Tasmania says he has never experienced a year like it: "When I was still living up the north west, we would come down to Launceston to play the 18 holers and used to joke that we'd play Launceston and then go across to 'Mudbray' (Mowbray) and 'Riverslide' (Riverside). How that's changed."

Likewise, Gilligan can't recall a drier year at Tasmania: "It has been a very tough year weather wise," says Gilligan. "It has been dry and windy with little rain. In terms of the maintenance of the turf it hasn't been a bad year, but with the conditions we've had leading

into summer, it's going to be a harsh couple of months trying to keep things growing and keeping the members happy and at the same time trying to stay within the realms of a budget. I'm not sure how we'll all get there, maybe we'll have to do some sort of rain dance."

To put some official stats on it, in November Launceston had just 14.8mm of rain (a normal November would see almost 50mm), while in Hobart, the second driest state capital in Australia, just 27mm fell compared to the norm of 54.1mm.

Going back to winter and it was unseasonably dry with a number of long-established records tumbling. Hobart's total of 50.8mm was the lowest winter rainfall total in 125 years of record, while Launceston had its driest winter in 27 years.

While the rain has been notably absent, 2006 has also been marked by some pretty extreme weather events. Royal Hobart superintendent Stephen Lewis has a spectacular picture adorning his office wall – in among the posters of his beloved Essendon Bombers – of the bushfires that ripped through Hobart in mid-October. The photo, taken just after sundown shows the hills glowing a sinister orange. The fires followed some unprecedented hot weather which broke a number of existing records for the state, yet, ironically, a few weeks later Hobart was shivering as snow fell down to sea level!

In the same week that ATM visited Tasmania, some of the worst bush fires seen for a long time broke out closing sections of the East Tamar highway between Launceston and George Town and razing thousands of hectares of forest. Remarkably just a week earlier superintendents in Launceston and along the northern coastline turned up to work two days in a row to find mild frosts – in mid-November!



#### THE WET STUFF

If the weather has provided more of a talking point than in previous years, then so too has the issue of water. Of the big three Launceston courses, Mowbray is the most vulnerable and you can tell it has been giving superintendent Tony Smith plenty of sleepless nights. While Launceston Golf Club has ample storm water storage facilities and Riverside needs only to call the local treatment plant to get recycled effluent pumped into its holding dams, Mowbray isn't as lucky.

Smith says he started irrigating six weeks earlier than normal at the end of 2006 which has had a dramatic impact on storage levels which look more like they would be in February. "We're down by a third already and we're in the middle of November," says Smith with an almost resigned expression on his face. "The Christmas rains they are forecasting can't come quick enough."

One of the biggest developments in terms of water management in the state however is currently underway in Hobart where the likes of Royal Hobart, Tasmania and the small nine hole Llanherne Golf Course (next door to Royal Hobart) are all about to switch to treated effluent drawn from the Coal River Water Recycling Scheme.

Taking five years to come to fruition, the scheme has involved the construction of a pipeline which takes treated effluent from the Rosny Treatment Plant, through Cambridge on the outskirts of Hobart and up to Richmond for agricultural use. With Federal Government funding coming through about four years ago, the project has progressed since and the pipeline was finally completed about 12 months ago.

"Where that pipe is to us is about five kilometres so it was just a logical progression that us and the likes of Royal Hobart, Llanherne, Westlands Nursery and a couple of commercial developments chased it up to see if we could tap into it," says Tasmania superintendent Danny Gilligan.

"Certainly in the initial stages the farmers were a bit reticent whether they would or wouldn't use the water, but for us golf courses it was a logical step. So we put our hand up and said we would take as much as we could get and it has progressed from there."

At Tasmania, the treated effluent water will be stored in a new 30M dam which will be specially constructed between the 16th and 17th fairways in the New Year. Gilligan is hoping that the course will fully switch over to effluent come April 2007 which should give him time to sort out any teething problems before the system is at full capacity for next summer.

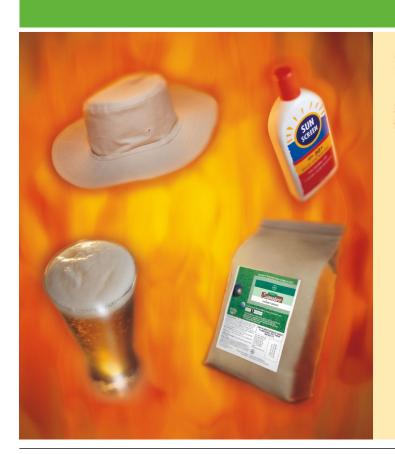
Not only will the switch from mains have major cost and water saving benefits for all clubs involved - Gilligan reckons Tasmania will save in excess of \$80,000 a year, while Royal Hobart has calculated a saving of 23M of water by making the switch - the quality of the water (Class A) is excellent and Gilligan is hopeful that turf quality will improve.

"From what I've seen from other courses the standard of the turf will hopefully improve and we won't have to be as judicious with where and how much we put on to the course," says Gilligan.

**CONTINUED ON PAGE 18** 



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## Around

## LAUNCESTON GOLF CLUB SUPERINTENDENT: PHIL HILL

Launceston Golf Club is the oldest of the four Launceston based courses, established in 1899. It has been home to superintendent Phil Hill for the past nine and a half years where he has a staff of five including assistant superintendent Scott Williams.

Three projects have kept Hill and his crew busy in recent times. The first has seen the resurfacing of a section of the 2nd fairway approaching the green. An area which became like a bog in wet weather, Hill managed to convince his board to resurface the area with some good old fashion show and tell.

While the board were keen for Hill to continue with normal methods of trying to relieve the problem, Hill wasn't having a bar of it. Taking a plug from the affected area to one of the committee meetings, Hill demonstrated the extent of the problem by squashing it down on the board room table. The resulting pool of brown gunk which oozed out of the plug soon had the board voting unanimously for Hill to go ahead with resurfacing the area. The fairway was stripped in mid-November and seeded with a cool-season mix which has had a fantastic strike rate.

While that project was nearing completion when ATM visited in mid-November, the next focus of attention will be the redevelopment of the 15th hole. Currently a par 5 which rates as one of the easiest on the course, the hole will





While water, weather and environmental management issues keep

Tasmanian superintendents on their toes, a number of clubs are also
undertaking various course improvement projects. Here ATM looks at
some of the work going on at Launceston, Royal Hobart, Tasmania and
Claremont golf clubs.

be converted into a more challenging 400mplus par four.

The redevelopment has been sparked by ball encroachment into properties that flank the left hand side of the fairway and a desire to make the hole more of a test. The redesign will see the existing tees moved forward and to the left, while fairway mounding and bunkering about 200m from the tee will encourage a tee shot away from houses. The green will be moved back about 10-15 metres and extra bunkers incorporated.

Other projects Hill has on the go include naturalising tee areas, removing the old rail sleepers and replacing them with stone and planting beds with native varieties. The club has also recently upgraded its irrigation system to the latest Toro Osmac system.

#### **ROYAL HOBART** SUPERINTENDENT: STEPHEN LEWIS

With the switch to treated effluent imminent, Royal Hobart Golf Club superintendent Stephen Lewis and assistant Gareth Kelly are looking forward to getting rid of the old irrigation system.

As well as switching to treated effluent Royal Hobart Golf Club will be getting a new irrigation system in 2007 The same week that ATM visited Royal Hobart, a special general meeting had given the go ahead for the new irrigation system which will come on line with the new treated effluent supply. The new system will replace one that dates back to the 1970s which has progressively deteriorated over the years.

"We've been patching it up over the years and I must know every bit of pipe on the course because we've had to replace them all," says Lewis. "We've also got major problems with the control system. When you want to water just one patch, 25 heads will turn on. The new system will certainly make things a lot easier and particularly today where we have to be mindful of not wasting water it will be a far more efficient system."

The system, which will also come complete with a new pumping station, will be installed hole-by-hole so as to minimise disruption to members and the current practice chipping green will be used to keep 18 holes in play. The edges of the system will be 'hard lined' with part circle sprinklers used on each side of the fairway which will mean native areas in the rough will thrive.

Aside from keeping on top of the old irrigation system, Lewis and staff have also been ticking off a few projects from the course masterplan, including bunker restoration and the construction of a couple of 'Tiger' tees.

#### TASMANIA GOLF CLUB SUPERINTENDENT: DANNY GILLIGAN

Like Royal Hobart, the switch to treated effluent is the immediate focus for superintendent Danny Gilligan, with the construction of the 30M storage dam to start after New Year.

"Aside from that, because of our limited budget, we basically run a maintenance programme at Tasmania," says Gilligan. "We don't have the budget or resources to start making wholesale changes around the place although there are a number of changes we would like to make.

"One of the things we would like to do is redesign the greens to make them more user friendly in terms of pin placements. Our greens were designed in the late 1960s and with lower mowing heights and increasing green speeds, the amount of usable area on them is becoming less and less.

"With a new general manager and board in place they are putting some processes in place to lift our profile a bit and to raise revenue in the corporate area, more than we have done so in the past. Hopefully that will give us a bit of scope to implement some of those changes."

While construction of the dam begins shortly, plans have also been lodged with the local council for a new maintenance shed which will be built next to the existing shed.

Out on the course, and Gilligan has started trialling a dusting program on his cool-season greens which has replaced the regular coring and scarifying programme. Since the start of spring Gilligan has been dusting every three weeks and vertidraining every eight weeks and so far has been very pleased with the results.

"Everyone seems to be heading down that track (of dusting) in terms of trying to provide a good putting surface but also to negate the traditional renovation processes which can be quite disruptive for members," says Gilligan. "It also opens up the course to hold more corporate days which can bring in a bit more money."



#### CLAREMONT GOLF CLUB SUPERINTENDENT: MARK POTTER

While Royal Hobart and Tasmania wait eagerly to go online with treated effluent in 2007, further up the Derwent River at Claremont Golf Club, superintendent Mark Potter has spent the past year monitoring closely the impact of treated effluent on his course.

The back 12 holes went online about 14 months ago using treated effluent pumped across the river from the Cameron's Bay treatment plant. A new irrigation system was installed on those holes and a 12M dam constructed to store the treated effluent. The club is looking at converting the remainder of holes (1, 9, 10, 11, 12, 13) across over the next two years at a cost of about \$160,000.

Potter says there have been a few issues with the new system since its installation, in particular with filtering. "We had the problem diagnosed as water flea in the dam," explains Potter. "Over the 12 months they die off and leave a shell body behind which clogged up the filters. We can't remove the water flea as we need it for the ecosystem in the dam as it helps control algae. So we've had to put a new filter system in to alleviate that problem."

Switching to treated effluent has seen the club's water expenditure drop from \$60,000 a year using mains to \$10,000. Once the whole course comes online with treated effluent, Potter is hopeful that figure will reduce to \$3000.

Located next door to the Cadbury's factory (Potter reckons having spent 15 years a stone's throw away from the plant he can now tell which particular chocolate they are manufacturing purely by smell), Claremont was started by workers from Cadbury in 1928. Back then the course was heavily planted with pine trees which were used to make packing boxes for Cadbury.

Between 1998 and 2004 over 3000 pines were removed from the course which has not only opened up some nice vistas to the Derwent River, but has also enabled the coolseason fairways to thrive now that they don't have to compete for water. Some of those areas which were cleared have been replanted with natives as well as long-term exotics like elms.

One of the biggest issues Potter has had to deal with in recent times has been an outbreak of red-headed cockchafer. Normally a problem confined to the northern half of the state, about five years ago they appeared in the Claremont fairways much to the delight of local crows.

"Honestly, it looked as though the fairways had been rotary hoed, such was the mess the crows left," says Potter. "And once they got here they just went stupid. We had never had them this far south before. We had no control for them until about three years ago when we started using Merit. We now spray every November which has knocked the problem on the head."



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#### **CONTINUED FROM PAGE 15**

"We will irrigate with effluent wall-to-wall but will remain hooked into the mains system in case there are any problems and to flush the greens. One of the things I'm not sure about is the nutrient content in the water and how much that will impact on disease in the March-April period, so we will be keeping a close eye and monitoring it when it does come online. The council has been proactive and will play a large part in monitoring end users like us."

To aid them in their efforts to tap into the pipeline, Tasmania, Royal Hobart and Llanherne were all successful in round two of the Federal Government's Community Water Grants scheme allocation which was announced in late November.

Of the \$600,000-plus that was awarded to seven Tasmanian golf and bowling clubs, Royal Hobart secured \$227,273 which will also go towards the complete upgrade of the club's outdated irrigation system. Tasmania pocketed \$159,572, with most of that going towards the construction of the new dam, while Llanherne received \$45,450 to upgrade its irrigation system as well as construct a storage dam.

"Just being able to obtain good quality water and ensure our water supply for the future will be a big weight off the shoulders for the club," says Lewis. "With the cost of mains water and bore water quality diminishing, going on to effluent was the logical step."

#### **ENVIRONMENTAL MANAGEMENT**

While water management issues have dominated the agenda for most Tasmanian superintendents, many are also starting to take positive steps towards improving the environmental management of their courses.

Late in 2006, Royal Hobart became the first Tasmanian course to sign up to the AGCSA's Environmental Management Initiative, which aims to have an ISO 14001-compliant environmental management system (EMS) in place at all golf courses around Australia. In November an information session was conducted at Royal Hobart with Terry Muir, founder of the e-par EMS, presenting to local clubs.

"The system that Terry has created is superb and it makes the whole process of establishing an EMS far less daunting as it sounds," says Royal Hobart's Stephen Lewis. "It's easy to navigate and the templates are easily adaptable.



"Unfortunately it comes down to money for a lot of clubs. We had Terry come down a while back but I think a lot of the clubs were a bit hesitant because of the cost. Now that the AGCSA has got on board it is a lot more attractive from a financial point of view which is making it easier for us as superintendents to impress upon our clubs that this is something we need.

"With the initiative now more cost effective, we're hoping that more Tasmanian courses will come on line in the next year. News is spreading about the initiative and certainly local governments down here are aware of it."

#### A GROWING MARKET

For all the challenges and limitations which

Tasmanian superintendents have to contend with, there is an air of optimism about the whole golfing industry down south. As any baggage handler at Hobart or Launceston airports will tell you, the state is quickly becoming a hot golfing destination.

Without question the creation of Barnbougle Dunes, which debuted at 49 in the world's top 100 course when it opened in 2004, has played a big hand in that and its success has spawned a number of new projects around the state which are in varying stages of development.

Greens Beach, one of those 60-odd nine-holers, is currently in the process of being converted, on paper, into an 18-hole championship course by Thomson and Perret. Greg Norman's course just outside of Orford in the state's east is expected to open in 2008, while strong rumours abound that a second course will be built next to Barnbougle Dunes in the not too distant future.

Another project that is also in the planning stages is a new Mike Clayton-designed course which is part of a multi-million dollar ecotourism venture planned up in the far north east of the state at Musselroe.

"From an association perspective I guess it's quite an exciting time to be in Tassie," says Medwin. "There are a number of new developments and Tasmania is becoming more of a golfing destination. It's now up to the established clubs to take advantage of that and hopefully that will a have a flow on effect for all facets of golf club operations."



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environmental manageme

This 300+year Euc. camaldulensis is also the emblem of the Woodlands Golf Club

The sandbelt region in Melbourne is renowned for boasting some of the finest golf courses in the world. More known for their immaculate surfaces and beautiful routing, clubs such as Woodlands and Royal Melbourne are also leading the way when it comes to flora and fauna conservation. Here Andrew Richardson takes a closer look at some of their work and examines ways that clubs can naturalise and protect their local

habitats.

ne of the major issues facing Australian golf course management and staff in recent times is how to balance the needs of club members and the wider golfing community with the need to preserve local indigenous flora and fauna. Golf courses are unwitting nurturers of some of our rarest species of plants and animals, with their vast tracts of land hosting a variety of natural habitats.

While awareness is increasing, few clubs have implemented environmental strategies to protect these all important habitats. Golf clubs such as Woodlands and Royal Melbourne in the Melbourne sandbelt region are leading the charge with both quietly managing their natural resources and making great advances in improving the localised ecology of their land for years.

Woodlands Golf Club in Mordialloc is one of the more established (and understated) clubs that has had an environmental land



# Golf course flora and fauna conservation

management plan in place for a number of years. Course superintendent Glenn Stuart and staff horticulturalist Andrew Thompson are passionate not only about presenting a top quality golf course year-round, but have a very good understanding of how integral the local ecology is.

An enormous amount of work and dedication goes into conserving the local environment and improving the biodiversity of the course surroundings at Woodlands.

Bird species that have made Woodlands their home including kookaburra, tawny frogmouth, peregrine falcon, musk and rainbow lorikeets, cockatoos, eastern and crimson rosellas, buff-banded rail, thornbills, and greycrowned babbler. This is only a partial account, as a complete list is too long to mention.

Also inhabiting the course are a variety of reptiles such as the brown, copperhead and red-bellied black snakes, blue-tongue lizards and many different species of skinks.

To identify these species, initial flora and fauna surveys were carried out and are updated on a regular basis. To make sure that the native fauna can thrive, management and staff have installed a feral animal programme which is used to control rabbits, foxes and wild cats. The programme's efficacy is regularly proved via data and survey analysis.

Although conservation of the local flora and fauna is extremely important, as is revegetating and restoring of significant plant communities, Woodlands' also recognises the importance of identifying and maintaining micro-ecologies. Though small in size, micro-ecologies are essential to the overall health of the local environment. Woodlands has some great examples of micro-ecologies taking their place within larger areas.

One example is the decision to leave the remains of some weed species rather than clearing away all evidence of their existence. Golf courses have come along way from the

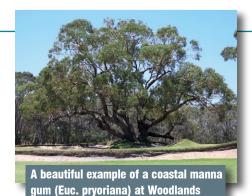
days of destroying all visible weed species without thoughtfully replacing them with indigenous plants.

For instance, rather than spraying blackberry plants and removing the remains at a later stage, if the dead canes are left behind and the appropriate species are planted directly underneath and surrounding them, this provides great protection for small birds against feral predators.

This practice is obviously not practical in all situations but, when possible, provides an important shelter for native birds and animals who don't distinguish between a weed species and a local plant. This small aesthetic sacrifice can be made to help the overall course environment and few golfers will notice the blackberry canes if they hidden among the scrub.

Another example of unseen micro ecologies at work is the free organic pest control that is carried out by native birds. There are quite a few of Australia's eucalyptus species that are prone to lerp infestation. Small birds, such as pardalotes, rely on the lerp as a food source and can effectively reduce these pests to a level where damage to the tree is greatly reduced.

This brings up another important point. If the appropriate plant species (shrubs, groundcover, etc...) are not in place around eucalypts, as well as the odd dead blackberry cane, small birds have no shelter from prey and cannot help control the pest infestation.



It's perhaps an obvious thing to mention, but all plant and animal species rely on one another for survival and it is vital that their habitats are kept intact, even at a micro level.

#### ENVIRONMENTAL PLANNING

It seems to be a fairly common perception within the industry that there are some golfers who have little concern and appreciation for their natural surroundings. Every club seems to have its stereotypical crotchety members who will grumble about the terrible state of the rough which causes them to lose their balls. The nearest greenkeeper is usually the person that has to listen to the complaints. What the grumbler often doesn't realise is that the rough often contains indigenous grasses, wildflowers and sometimes the odd orchid or two.

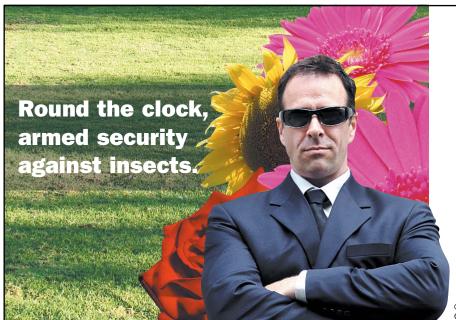
Including an environmental element to a club's masterplan is extremely important for a variety of reasons and there are a few organisations and specialised contractors that can collaborate with management and architects and also provide valuable advice on managing a course's natural resources with the result greatly enhancing the golfer's enjoyment of the game.

Low-maintenance areas and the creation of buffer zones are often seen as a key measure in protecting indigenous flora and fauna species and are relatively easy to establish as a first step. Golfers are also able to see obvious results within a short space of time and most will see the changes as a positive, especially when plants are flowering and birds and animals have made these newly created spaces their home.

Both Woodlands and Royal Melbourne have fantastic examples of newly constructed and protected areas that are vital to establishing important habitats. The new wetland basin that now sits alongside the 6th East at Royal Melbourne was initially met with a degree of criticism from some of its members, but after three years of dedicated planting, wildlife has moved in and golfers are now enjoying the positive results that have been achieved.

As well as reintroducing the rare eucalyptus pauciflora subsp. pauciflora from seed collected on the course, Woodlands is also going to great lengths to protect two remnant species of eucalypt; a 350-400 year old Euc. camaldulensis and coastal manna gums (Euc. pryoriana) that pre-date European settlement.

Also included in the environmental masterplan is the conservation and protection of a wetland scrub area that has a great deal of importance to the local ecology. Dominated



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® Senator is a registered trademark. Crop Care Australasia Pty Ltd. ACN 061 362 347. by mature eucalyptus camaldulensis and melaleuca ericafolia, this area houses many of the smaller bird species as well as providing shelter for waterbirds. This wetland is very well situated as it forms a valuable link in one of the sandbelt's wildlife corridors and apart from a misplaced ball here or there, members are aware of its importance and contribute to its protection alongside staff.

Back to environmental planning, and before engaging consultants and specialist contractors, club management and staff can easily initiate small changes in the way existing tasks are carried out and also look at various areas around the course where protection and conservation are needed.

The following list has been compiled by Andrew Thompson from Woodlands Golf Club and Justin Dickinson from Royal Melbourne Golf Club who both have extensive training and expertise in environmental land management for golf courses.

#### IDENTIFICATION OF REMNANT VEGETATION

Before identification of any flora can take place, certain steps need to be taken by management and groundstaff to enable accurate surveys to be conducted. Very simple initiatives such as not spreading grass clippings in areas that may contain indigenous plants or seed stock is the first recommended step. To stop this damaging practice, some clubs are providing designated bins where clippings can be stored, either hidden away out on the course or situated near maintenance sheds.

#### MOWING/SLASHING REGIMES

This next step is vital for many reasons but the main one is altering the mowing and slashing regimes in areas that are known or suspected to harbour indigenous flora and fauna. Results can usually be seen within a short space of time depending on whether there is any remaining plant or seed stock left in that area.

#### **OUTSIDE RESOURCES**

The majority of local councils will often have accurate records of indigenous flora and fauna that has been surveyed around where golf courses are situated. These lists are supplied at little or no cost and can provide a great starting point to finding out what species may still exist on the course.

#### PROTECTING AREAS

Once the initial decisions have been made on the remnant areas that the course management and staff feel should be conserved, it is important to protect these areas as much as possible. Roping off around the area will protect it from vehicle damage and foot traffic.

Once this has occurred, irrigation immediate to the protected area should cease. Excess watering of these areas is really only beneficial to weed and foreign grass species such as couch and kikuyu. Fertilisers also need to be avoided due to the phosphorus levels that can harm indigenous plants.

Another aspect vital to the remnant area having the best chance of thriving is to make sure that all trees are well protected. Machinery use needs to be kept at an absolute minimum so that damage to the tree and soil compaction does not occur. Also, although it may be obvious to mention, all cores, clippings, rubbish, excess soil, etc. must be kept well away from areas that the club is trying to conserve.

#### SPECIALIST HELP

Once the above measures have been taken

#### THE BENEFITS OF NATURALISING YOUR GOLF COURSE

or many people, answering the question "Why naturalise?" when posed by critical employees, committees or neighbours can be an unsettling prospect. Successfully communicating the many benefits of a conservation project can make or break support for establishing wildflower or native flora areas, naturalised pond or stream shorelines, and rougher golf course roughs.

Here Audubon International provides some of the key benefits of introducing such a programme to help educate people about your stewardship efforts.

#### ENVIRONMENTAL BENEFITS

- Maintains a diversity of plants and animals.
- Protects ecosystems and ecological communities.
- Improves water quality.
- Minimises erosion.
- Supports an aesthetic appreciation of natural beauty.

- Maintains the gene pool of particular plant and animal species, promoting hardiness, disease resistance, and adaptability.
- Promotes stewardship of the environment and contributes to the conservation of local wildlife species.

#### BENEFITS OF LAKE AND POND NATURALISATION

- Maintains the food chain for a variety of wildlife species.
- Enhances "structural diversity" of plants along the pond margin. Plants of varying heights and types increase wildlife diversity.
- Provides improved habitat for amphibians, such as frogs, especially in ponds that do not contain fish.
- Provides shelter for fish and freshwater invertebrates.
- Supplies food for aquatic organisms.
- Provides waterfowl and wading birds places to feed and rest.

- Stabilises shorelines and reduces erosion.
- Minimises or eliminates chemical runoff, especially when combined with a designated "buffer zone" in which no chemicals are applied.
- Improves water quality as plants take up excess nutrients and produce oxygen to aerate the water.

#### ADDITIONAL BENEFITS

- Lowers maintenance costs and reduces the need for high-intensity or timeconsuming maintenance.
- Reduces equipment wear and tear.
- Reduces the need for petrol/diesel, pesticides, fertilisers, and water.
- Enables staff to concentrate where it really counts - the playing surfaces.
- Increases wildlife sightings.
- Adds distinctive contrast and natural beauty to the golf course landscape.
- Provides places for nature study and enjoyment.

into account, a golf club may wish to bring in a specialist environmental land management company. There are many companies that specialise in environmental land management, but only a few have an understanding of the barriers that golf clubs face on an ecological level. Therefore it is recommended that golf course management only use consultants and contractors that have proven practical experience and a good knowledge of the turf industry.

Apart from practical services such as flora and fauna surveys, vermin/weed eradication, planting, seed collection, fencing and habitat enhancement/protection, suitably qualified consultants and contractors can advise on long-term environmental solutions that will also form a vital part of the golf course masterplan.

A great majority of clubs throughout Europe and the United States are committed to including environmental management as part of their daily operations and Australia is starting to follow suit.

As I am writing this article the Victorian Government is looking at introducing Stage Three water restrictions and with the correct environmental planning, plant selection and alterations to irrigation regimes, golf clubs can save a great deal of money as well as cutting down it's use of a vital resource.

#### **SUMMARY**

What's the easiest way of assessing the validity of this article? Have a close look at an aerial map of Greater Melbourne, or any city for that matter, that includes the suburb where your golf course is situated. Every green area that you see on that map, including all the golf courses, are essential links in the migration



and settling of an untold amount of fauna, commonly referred to as a 'wildlife corridor'.

This is not a buzzword created by environmentalists; it is absolutely vital to the survival of many species of animals and birds. Golf courses act as sanctuaries for all flora and

fauna, no matter what country, and people often underestimate how important they are.

If every golf course does it's best to restore its local ecologies, it will make an immeasurable difference to repairing the damage that has already been inflicted.

#### TIPS FOR NATURALISING YOUR GOLF COURSE

- Make a plan. Assess existing conditions, create a conceptual design, and outline your plan for establishing and maintaining the area.
- Choose your location carefully.
   Be considerate of visual appeal, traffic patterns, and any neighbour concerns.
- Inform people about your plans.
   This is especially important if the project will alter the view of nearby homeowners.
- 4. Select native plants that will thrive

- under the specific growing conditions of your site.
- Prepare the site and mulch, water, and weed as needed during establishment.
   This will greatly increase the likelihood of successful naturalisation.
- Hang in there during grow-in.
   Naturalised areas may need to mature for a season before looking great.
   Don't expect or promise immediate colour or wildlife use.

Source: Audubon Co-operative Sanctuary for Golf Courses



## Protecting Co.

abitat loss and degradation are two critical factors that can impact upon the health and diversity of wildlife species.

Golf courses are often criticised for simplifying, and therefore degrading, wildlife habitats or for inadequately protecting natural areas on site.

By implementing management practices that protect habitat areas, a club can ensure that the course is providing sanctuary for wildlife. The following is some information presented by the Audubon Cooperative Sanctuary Program for Golf Courses.

#### PREVENTING DISTURBANCE

Wildlife, water, and natural systems can be adversely affected when golfers inadvertently traipse through natural areas, maintenance practices are done carelessly, or improperly trained golf course personnel, managers, or owners fail to implement proper environmental safeguards or sound management practices.

It is the job of the superintendent, working together with employees, owners, and golfers to protect natural areas responsibly.

There are a variety of effective means to educate people about habitat protection. Choosing a combination of strategies and repeatedly following up may be necessary to raise awareness and promote actions that do not harm the environment. Here are strategies that can be employed to assist in this.

#### MOUNT SIGNAGE

One of the most effective ways to protect special habitats is to mount signs. Certain areas may warrant signs highlighting specific environmental sensitivities, while others may just warrant an explanation of your expectations (e.g.; No Carts-Keep Out), a statement of why the area is significant (e.g.; wildlife habitat, nesting area, native flora), or both.

#### **ROPE OFF AREAS**

Sensitive habitat areas may need to be roped off to discourage golfers or maintenance staff from intruding. When roping off areas, make sure to inform both employees and golfers why access is being restricted.

#### COMMUNICATE

Look for ways to inform people in greater detail about sensitive habitats or species in need of



protection. Many courses have successfully educated golfers via newsletter articles, bulletin board notices, meetings, and seasonal course tours. If a residents association is involved, communicate in writing or in person so that neighbours have an opportunity to ask questions, express concerns, and remain informed and involved.

#### **EDUCATE WORKERS**

Routinely review environmentally sound maintenance practices with the maintenance crew. Set high expectations and follow up on careless or inappropriate practices.

#### AVOID DISTURBANCE TO KNOWN NEST OR DEN SITES

Since all wildlife species must successfully breed and raise young to survive, it is important for golf course personnel to avoid disturbing nests, den sites, or other breeding habitat, especially during the spring when breeding activity peaks.

You may chose to flag or stake ground nests or avoid thinning woods during the spring. In tall grass areas, do not mow until after young birds have left nests.

#### MINIMISE TRAFFIC

Limiting traffic in habitat areas minimises habitat disturbance and fragmentation. Route vehicular and foot traffic away from any environmentally sensitive areas. If necessary, confine cart paths to the edges of core habitats, rather than cutting paths through the interior.

#### GOLF COURSE ACTIVITIES THAT CAN DAMAGE NATURAL HABITATS

- Golfers trampling native plants while searching for balls;
- Carts straying into naturalised areas;
- Weed trimming or mowing too close to tree trunks:
- Dumping debris into wooded streams;
- Removing shrub layers or leaf litter in woods;
- Removing wetland, stream or pond vegetation:
- Ignoring eroding stream banks;
- Planting exotic plant species;
- Removing trees from streamside habitats (alters water temperatures and habitat);
- Improperly using or storing chemicals;
- Mowing fields prior to the end of nesting season for ground nesting birds.





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#### THE PULSE

With increasing member/ player expectations and a general tightening of resources, a high premium has been placed on a superintendent's ability to effectively communicate with their club's board or greens committee when it comes to course maintenance operations. In this instalment of The Pulse, ATM's dedicated opinion section, we ask five superintendents from around the country what they have found to be the most effective and least effective means of communicating at this critical level.

DAVID WARWICK Avondale Golf Club, NSW



As superintendents we are all aware of the pressures to provide ever-increasing results with ever-decreasing resources. While we struggle each day to provide the results, does the

committee/board/members know what we have gone through? Do they know, for example, that the weather caused extra work and therefore some project wasn't completed on time? Can you remember by the time the greens meeting comes around what the circumstances were that lead to a certain outcome.

I'm fortunate at Avondale that the greens committee can see the benefit of either myself communicating directly with members or through a club-generated weekly newsletter. I have been using this strategy for the last two years and it has proved very effective. The one-page weekly update gets emailed out to all board members every Friday and contains information about work completed for the week, changes to work schedules, any issues that may have arisen and the work schedule for next week. This weekly update is not a formal report and I go to the trouble of including a funny golf photo, a web link to a related topic or maybe some humorous remarks. These help make it an enjoyable read, rather than just work details that are often skimmed over.

The benefits of this weekly update are that greens meetings are now just one hour rather than two or three, the board is better informed and able to answer questions from members which makes all of us look more professional. The weekly update has advanced from this scenario to an additional 'members update'.

I believe the Internet and email is a much under-utilised tool. The ability to get quick decisions from a well-informed committee member is paramount to a successful team. I have seen huge benefits all round since commencing better communication.

<mark>JEFF LANE</mark> Joondalup Resort, WA



If you've read Alister MacKenzie's book 'The Spirit of St Andrews', you'll probably see that not much has changed in the past 70 or 80 years regarding committees and

probably won't over the next 70 or 80 years. Golfers and committees will always be judging us on what we produce and rightly so. We are never going to escape that.

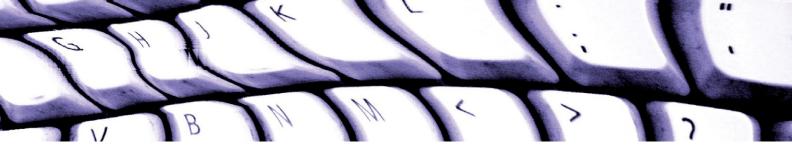
There is only one way to effectively communicate with committees and that is to be honest. Committees will respect that and trust you. But you have to know what you are talking about. You won't look very good if all you can honestly say is "I don't know." It's imperative to stay in touch with your colleagues and association bodies and learn everything there is to learn about your job. If one of your committee asks about something at another course down the road, then you should already know the answer. If you don't, then it's time you got out and about.

I really don't know if there are any magical strategies for communicating with committees. I never say "will" if I mean "might" and I never say "might" if I know I won't. It's all about maintaining credibility. And I try to never give options. Try to work with your committee right back in the planning stages and have them involved with you. Guide them to make the decision that you know is the right one. But it's also up to you to know what the right decision is. You have to know the player demands as good as the club captain and the financial constraints as good as the treasurer.



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## **BRAD MARSDEN**Clifton Springs Golf Club, VIC



Communication is paramount in achieving goals on the golf course. To be a truly effective manager is to be able to meet anyone at their level, take their thoughts on board, amalgamate

them with your own and produce positive outcomes. My greens chairman is my advocate and confidant. He is my representative at all those closed door meetings that golf course managers don't get invited to. Our relationship is built on mutual respect and trust. To foster this partnership I strive to be upfront with all my dealings and this helps to reinforce my integrity as a professional golf course manager.

We communicate on a regular basis, generally by mobile phone and email but the most effective communication strategy is the old tried and true face-to-face meeting. We sit in the office to discuss administration issues, get out on the golf course to discuss course issues and, above all else, are on the same page for the day-to-day golf course activities.

For extra reinforcement of my golf course visions, I use digital photographs (they speak volumes), turfgrass publications for articles and pictures and take him to visit other golf courses doing similar work.

Don't ever think any of your ideas will be wholeheartedly accepted by all and be prepared to argue your points or make a compromise to achieve the basics of what needs to be done and that can be built on later. Don't shy away from what's in the best interest of the club because of negativity – if you don't ask, you'll never receive.

With all the technology of today, it is easier technically to communicate but at the end of the day, it comes down to your relationship with people and whether they are willing to listen to you. You can have a fantastic relationship with one person and then the Board changes and you have to build new relationships.

#### JON CARTER Wanneroo Golf Club, WA



It is fair to say that many a superintendent's professional reputation has been both made and broken by the way members communicate with each other. What can sometimes originate

as something quite trivial can turn into a major issue by the way it is communicated from member to member and club to club.

Though communication, if not handled correctly, can create negativity, it can very much work in a positive manner. As superintendents it is in our own best interests to be pro-active with communication and correctly advise members of issues that may fester and become an infection within the body of the club. It is important that we use greens committees or boards to our advantage and communicate, advise and establish what the goals of the committee are.

One of the most useful tools for a superintendent in this electronic age is email and websites. Brief emails once a week to the greens committee can keep them informed of maintenance and construction progress and in turn make them feel a part of the decision-making process. These people then become your allies as they feel responsible also. Having a course maintenance section on your club's website can also help you communicate your plans to the greater membership and inform them of planned work, chemical applications, hole closures and any other information.

When a controversial issue does arise it is important that we keep our opinions on a professional level and don't allow these to progress to an emotional level, as this then becomes more complicated and relationships deteriorate and become difficult to repair.

Communication is just another hurdle that we as superintendents must jump, however it can prove to be a very useful tool when handled correctly.  $\underline{\omega}$ 

## STEPHEN LEWIS Royal Hobart Golf Club, TAS



The most effective communication channel that I have found to be successful is having meetings just with the general manager and golf chairman. Small groups make

it easier to talk about issues of concern and sticking to the club's current goals without interference from others and their individual aspirations or petty matters being brought up. In this way the meetings can be regular and therefore quicker.

In the past, greens committees were always made up of a large group of members which was changed a few years ago to a smaller group of four. This has proved to be very successful as it is much easier to communicate with a smaller group of committee members who think along the same wavelength and have similar goals. The club also uses email to distribute a weekly newsletter to approximately 75 per cent of its members. This cuts out the personal contact which again eliminates any petty discussions. It is also a good tool for communicating with the committee and members

The major don'ts would have to be not getting sidetracked from agendas and especially getting stuck with questions from committee members during the course of the meeting about individual problems. Another method of effectively communicating is to invite troublesome committee members to one-on-one meetings in your work area, office or shed to explain and show what you are trying to achieve and the constraints you work with which they might not be aware of.

I think it has become easier to communicate with committees because of the smaller groups. Once you have everyone understanding what the day-to-day running of the golf course involves it is easier to get everyone working together to achieve the same goals.

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AGCSATech manager John
Neylan recounts his recent visit
to the inaugural Thai Golf Course
Superintendents Association
seminar and looks back at the
successful first round of AGCSA
Environmental Management
Initiative workshops.



#### THAI SUPERINTENDENT SEMINAR

In early November I attended the Thai Golf Course Superintendents Association seminar in Hua Hin which is about three hours south of Bangkok. The seminar was conducted over three days and was the first major event for the association. I was pleased to be able to represent the Australian Golf Course Superintendents' Association and to foster ongoing relationships with our fellow golf course superintendents in Southeast Asia.

The seminar covered topics on thatch control, managing new warm-season grasses, new sprayer technology and irrigation management. The speakers included Pratchaya Chanthanathat (Subhapruet Golf Club), a recent graduate from Sydney University, David Hanby (Hydro Pumping & Controls Pty Ltd), Chris Vasey (Enviromist Industries) and myself. It was an interesting experience to speak to a slide and then have it interpreted in Thai.

Mattee Suntisawasdi is a local agronomist with Procrop, a local fertiliser and chemical supply company, who worked tirelessly doing the interpretation. It was both a wonderful and a challenging experience to have a spirited discussion about thatch control in English and Thai.

Not surprisingly the issues of turf management in Thailand are the same as in Australia and for that matter, the world over – thatch control, managing new grass cultivars, dealing with demands of owners, golfers and committees and generally trying to provide consistent, high quality surfaces.

A field day was conducted at the new

Black Mountain Golf Course which is nearing completion. Expatriate Australian Gavan Wilson was our host as we explored the golf course, discussed the management of TifEagle greens and the seashore paspalum fairways (cultivar Salam), marvelled at the management of such a big site and discussed the layout of the new Pacific Coast Design project.

There were over 65 attendees at the seminar, including several expatriates from Australia, Sweden and the Netherlands. Greenkeepers can certainly find themselves anywhere in the world. Expatriate Aussie Gary Chatfield was also at the seminar and now operates a turf farm near Bangkok where he is growing Novatek hybrid couchgrass.

The social scene was not neglected, which is a significant part of any gathering of golf course superintendents. Again it amazes me how superintendents are the same the world over; they enjoy a drink, a chat and a laugh with their colleagues. The karaoke session was a laugh and the local Toro manager was the most outstanding performer.

The future is very bright for the Thai Golf Course Superintendents Association and the AGCSA looks forward to assisting them whenever possible as their association grows.

#### HYBRID COUCHGRASS OFF-TYPE SELECTIONS

In 2001 the AGCSA, with funding from Horticulture Australia Ltd, started a project to collect hybrid couchgrass off-types from golf putting greens and bowling greens from around Australia.

The purpose of the project was to evaluate natural variations of Tifton 328 and Tifdwarf, which exhibited improved characteristics, whether it was increased turf density, improved winter tolerance, improved shade tolerance or increased disease resistance.

It is uncertain what the trigger mechanism is for these off-types to occur, however, there are a range of conditions that may encourage the development and expansion of these off-types including mowing height, climate, pests and maintenance regimes.

In recent years in Queensland there have been problems associated with disease, humidity and heat stress that have resulted in deterioration of the surface and is referred to "summer dieback". During these periods of stress, the observation has been made by many golf clubs and golf course superintendents that greens often have patches of these off-types that appear to be unaffected by the conditions.

Because of the natural variation and the apparent successful survival of some of these off-types, there is a large and as yet untapped gene pool that needs investigation. There are several universities in the USA that have collections of off-types which have been developed as discrete varieties. In Australia there is a good opportunity to develop an Australian couchgrass suitable for putting greens.

In the original project, 93 off-types were collected and planted into a nursery at Lakelands Golf Club in Queensland where they were assessed for their growth characteristics



including rate of spread, growth habit, density and turf quality.

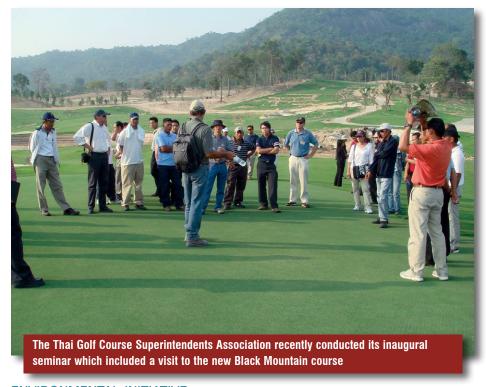
From the original collection, 12 offtypes were selected for further development and evaluation. Darren Moore, golf course superintendent at Lakelands, has now established extensive evaluation trials as part of his Masters studies at Sydney University. (see photos page 30) These trials are evaluating the selected off-types against the industry standards TifEagle, Tifdwarf and Tifton 328 in replicated plots where the following parameters are being measured;

- Stolon length
- Rate of spread and establishment
- Internode length
- Internode diameter
- Leaf width

Once the plots are established other parameters as they relate to putting surface quality will be assessed including;

- Quality as a putting surface
- Colour
- Turf density
- Disease
- Green speed

The plots are of sufficient size that they will be able to be mown at two different cutting heights. At this early stage of the project there are obvious differences between the off-types and the industry standards. As part of the project, DNA analysis will also be undertaken to identify whether the off-types are genetically different to the original plant material.



#### ENVIRONMENTAL INITIATIVE

The AGCSA's Environmental Management Initiative is now well underway with the completion of the first round of environmental management system workshops. There are now 120 golf clubs registered as having commenced the development of an EMS.

The workshops were exceptionally well conducted by Terry Muir, as the computing expertise of the attendees was at times

challenged. It was good to see many clubs having two or more in attendance, with the superintendent often taking the back seat.

In my observations there is merit in golf course superintendents considering the delegation of preparing the EMS to either the assistant or a designated environmental officer. I am certain that this will better facilitate the preparation and management of the EMS.

The development of an effective EMS is that it is a living document. In particular, the epar EMS is designed to be regularly attended to and you will be regularly challenged with various scenarios that will test you and your staff in its preparedness for an environmental incident.

Remember, accidents will always occur no matter how careful you are. The key is how well prepared you are in coping with accidents/incidents and being able to minimise the environmental harm.

The AGCSA Environmental Management Initiative has several key elements;

- 1. Aiming for all golf courses in Australia to have an ISO 14001 standard EMS.
- Developing and maintaining the Golf Environment website (www. golfenvironment.com.au) which will over time provide golf clubs with news, legislation updates, research and case

**Erosion control Thai style** 

studies related to the management of the golf course environment. While the website is currently in its infancy, the AGCSA will continue to build it as a major information resource.

- Developing a Golf and Environment Foundation. Through our relationship with EBS and e-par, the AGCSA receives a commission where the funds are dedicated to fostering the objectives of the Environmental Management Initiative. It is planned to establish a fund that will be used to fund research projects, study bursaries and assisting smaller clubs with developing an EMS. Over the next 6-12 months the fund will be established and details provided on how funding can be applied for.
- 4. The golf course industry to become self-regulatory. Potentially the greatest benefit of the Environmental Management Initiative is the move towards self regulation. This will require about 70-80 per cent of Australian golf courses to have an ISO 14001 standard EMS and be signed up to the Environmental Management Initiative.

With self regulation, our industry will prepare a State of the Environment report and undertake the necessary audits to demonstrate compliance. It will also be responsible for sanctioning clubs that are non-compliant. What self-regulation does is to place our industry at the forefront of environmental management and demonstrates to the wider community that we are serious about proactive environmental management.





From the original collection, 12 hybrid couch off-types were selected for further development and evaluation at Lakelands Golf Club in Queensland

#### THE AUSTRALIAN GOLF INDUSTRY ENVIRONMENTAL POLICY

The Australian golf industry plays a significant role in society with an estimated 34 million rounds of golf played annually in both rural and metropolitan areas.

The industry is administered by a number of bodies which oversee the development of the game from social golf, junior through to elite competition, and the presentation and maintenance of the playing surface and surrounding area.

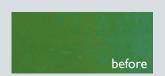
Environmental responsibility is a core value of the Australian golf industry and we will strive to maintain our reputation for effective environmental management. Jo this end, we commit to environmental excellence and to:

- Integrating environmental factors into our business decisions wherever we operate;
- Strive to meet and, where appropriate, exceed the requirements of all relevant legislation, regulations and other requirements to which the industry subscribes;

- Develop and maintain the AGCSA's Golf Environmental Management Strategy (GEMS) that distinguishes the Australian golfing industry as the world leader in environmental management;
- Encourage commitment to the environment through training and awareness programmes;
- Constantly strive to achieve continual improvement and the prevention of pollution in our environmental performance;
- Promote water management strategies to all members;
- Continue to support and further enhance integrated post management;
- Set environmental objectives and targets and assess our achievements;
- Encourage a similar environmental commitment from our material suppliers and contractors;
- Annually review this policy and communicate it to all members of the Australian golf industry and the public.



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One of the major environmental initiatives at The Heritage Golf and Country Club is the use and treatment of water that comes onto the site and waste water that is generated within the site



## In this instalment of Tech Talk, Andrew Peart examines the ISO 14001 standard and looks at some of the environmental initiatives being instituted at The Heritage Golf and Country Club in Melbourne.

## Raising the Standard

ith the recent launch of the AGCSA's Environmental Management Initiative, the major focus for many clubs has been the introduction to an environmental management system (EMS).

An EMS is an organisational approach to environmental management based on a concept of continuous improvement in all aspects of the club's environmental performance. E-par is the EMS that forms the basis of the AGCSA initiative and has been developed by Environmental Business Solutions adapting the principles of ISO 14001 for use by golf courses.

ISO is the acronym for International Organisation of Standardisation which currently has a portfolio of over 16,000 standards covering economic, environmental and social development. ISO 14001 was first introduced in 1996 and has since been revised to ISO 14001:2004

ISO 14001 is a set of guidelines by which a facility (golf club) can establish or strengthen its environmental policy; identify environmental aspects of its operations; define environmental objectives and targets; implement a programme to attain environmental performance goals; monitor and measure effectiveness; correct deficiencies and problems; and review its management systems to promote continuous improvement (Rajendran & Barrett 2003).

E-par covers all 17 elements which make up the ISO 14001 standard and one additional element – an initial environmental review that allows clubs to identify their current environmental situation and procedures. This in turn is the basis for the club's own EMS.

The 17 elements of ISO 14001 constitute holes 2-18 on the e-par 'golf course'. Some elements or 'holes' require three tasks or

'shots' to be taken before the element is complete, while others may require up to five. All up there are a total of 62 tasks that must be performed to complete the e-par EMS.

One of the more challenging elements of an EMS is to identify all the legal requirements that must be conformed to as part of sound environmental management.

For example, in Victoria there are potentially nearly 100 different Acts that may impede on the activities of the golf course. These range from the commonly known, such as the Dangerous Goods Act 1985 and the Occupational Health and Safety Act 1985, to lesser known ones such as the Coastal Management Act 1995 or the Cultural and Recreational Lands Act 1963, and of course the Environmental Protection Act 1970. Knowing what legislation requirements govern activities and responsibilities on the golf course are crucial.

Another of the Acts in Victoria is the Planning and Environment Act 1987 that controls the administration of planning permits for the construction of most new golf courses.

#### **OFFSETS**

In November, Greening Australia held a day in Melbourne that addressed many issues dealing with environmental management, particularly native vegetation and environmental conservation. One of the presenters was Mark Doyle from the Department of Sustainability and Environment who explained a specific policy that relates to golf course construction.

Sometimes in the construction of golf courses clearing of native vegetation must be undertaken to create the golf course. The Victorian Government, through the Department of Sustainability and Environment (DSE), use the Native Vegetation Framework policy which

has a three-step approach to assess the suitability of native vegetation clearing - avoid, minimise and offset. It works like this - is there an option to avoid removing native vegetation? If not, minimise any losses and offset.

It is best to discuss any proposed removal of native vegetation with DSE at the earliest stage to provide a better chance of meeting government statutory policy. Offsets are required for removal of native vegetation, which aims to achieve a net gain of native vegetation.

The policy creates opportunities for golf courses to allow offset works in unused areas of the course which are paid by developers who need to meet their offset requirements from clearing on their site. Golf courses tend to have large enough parcels of land where net gain is less of a concern, however golf course land can be utilised by other land developers to provide offsets for their land clearing.

An offset can be undertaken in the form of revegetation of a denuded area or improvement of an area of remnant native vegetation. Land suitable as an offset should be presently out of play and unmanaged within the boundary of the golf course. The parcel of land must firstly be assessed to gauge whether it is applicable to become an offset site. Council staff or ecological consultants may be able to provide this advice.

Things that could be considered include the type of vegetation (i.e.: red gum woodland, swamp scrub etc), the size of the offset site and opportunities for improvement to achieve the required net gain for the offset seeker. To qualify as an offset, the area must be secure and ongoing and may require an on-title agreement with council.

This provides golf clubs with the opportunity

to have revegetation or remnant management works within the course funded and managed for a 10-year period. Local councils can be approached by golf clubs if they believe they have parcels of land within their course that could be applicable.

#### ENVIRONMENTAL STEWARDSHIP AT THE HERITAGE CGC

The other aspect to the Greening Australia day was to visit golf courses around Melbourne that were undertaking tremendous work in areas of environmental conservation. One such course is The Heritage Golf and Country Club located in Wonga Park which comprises a members' 18-hole St. John's Course and the soon-to-beopened public Henley Course.

Course superintendent Sam Myott gave a very detailed insight of the environmental initiatives being conducted at Heritage, the major focus of which is the use and treatment of water that comes onto the site or the waste water that is generated within the site.

The waterway that originally ran through the St. Johns Course was primarily stormwater run-off from industrial and commercial developments that simply passed through the property before entering the Yarra River. This water contained many contaminants such as oils, minerals, sediments and heavy metals.

The golf course has dramatically widened and deepened this waterway which has significantly slowed the movement of the water before entering the Yarra. With the incorporation of nitrogen-stripping vegetation the water can now be utilised for irrigation purposes as well as being far cleaner before it enters the Yarra. Also, all stormwater from the housing estate on the site is transferred into this lake system.

Melbourne Water, which manages the river, stipulates that bi-monthly water tests



are conducted of water entering the site, throughout the lake system and where the water enters the Yarra as well as upstream and downstream of it.

The waste water from the hotel and function complex associated with the golf course is treated on site via a treatment plant. This water is also tested on a monthly basis as it is used for irrigation purposes in conjunction with the other water source.

#### CONSTRUCTION LIMITATIONS

The construction of the Henley Course was environmentally challenging and a logistical nightmare with the construction of three holes only being allowed at one time. This was stipulated by the Department of Environment and Heritage (DEH) that had identified the close proximity to the Yarra River and the presence of three endangered fish species.

The major concern was that a flood during construction could wash large amounts of sediment into the Yarra having dramatic impacts on the fish species. To combat this the golf course was required to only construct three holes at a time, limiting the amount of disturbed soil present, as well as erect wall bunding across the floodplain to catch

sediment from a one-in-10-year flood event.

Monthly inspections were conducted by an environmental body that consisted of representatives from the DEH, the Environmental Protection Authority and local municipality representatives to ensure the guidelines were followed.

A weed management plan was also presented for approval and any pesticides that were harmful to fish were banned from being used on the site, making chemical selection an integral part of turf management.

#### ENVIRONMENTAL ENHANCEMENT

The Heritage Golf and Country Club has planted more than one million trees on the St. John's Course and is in the process of planting 20,000 more on the Henley Course. The trees on the Henley Course are all propagated from seed collected from the site which has meant vegetating the site has progressed at a somewhat slower rate.

The number of bird species has also dramatically increased from around 20 when the course first opened to now in excess of 100 species. There are also nesting boxes in place as well as islands among the lake system for ducks and other wildlife species.



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# Royal treatment

rounds of 67 and a course record 65 from Queenslander John Senden to determine whose name adorned the Stonehaven Cup for 2006. For superintendent John Odell and his greens staff, the days leading up to the tournament proved arduous as weather conditions conspired against them. A cold

front descended on Sydney late Wednesday bringing with it gale force winds, lashing rain and the coldest November minimum temperature recorded in 100 years. The course held up under Mother Nature's barrage however and Nathan Green, who fired an incredible opening round 67 in

the dire conditions, commented that he had never putted on truer greens. Greens were kept at 2.8mm for the duration of the tournament with staff double cutting each day with the exception of Thursday. Approaches, collars and tees were 7mm and fairways 9mm.

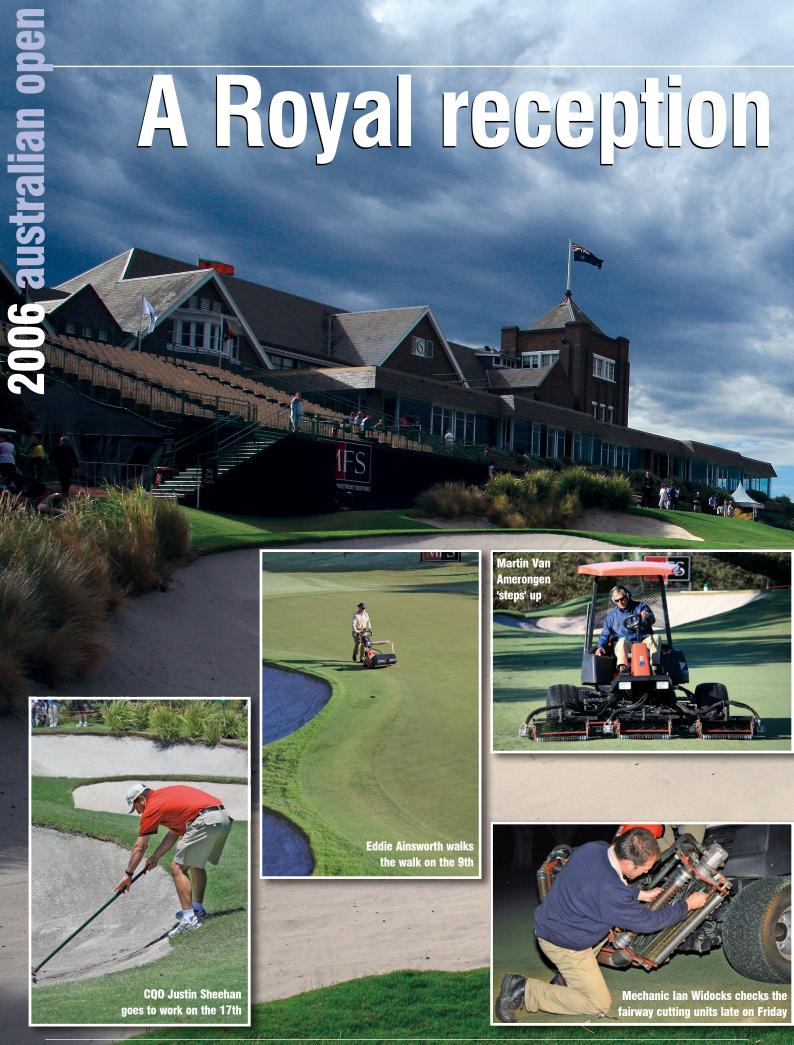
MFS AUSTRALIAN OPEN







Threatening skies loom large over the 18th at Royal Sydney Golf Club a day out from the 2006 MFS Australian Open

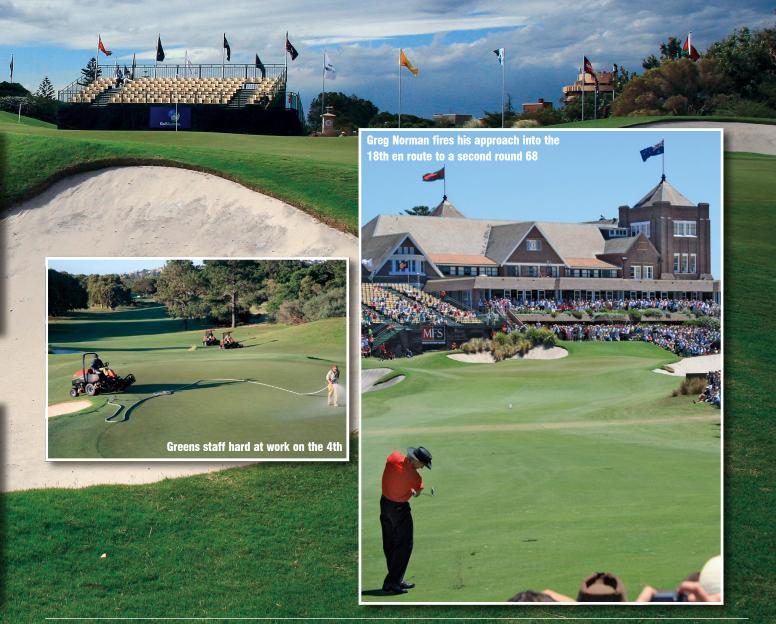


# for the Shark

from near and far clambering to drop by Royal Sydney to have a closer inspection before and during the Open, the majority of the 40,000 plus crowd that turned up over the four days was there to see one man - Greg Norman. The Shark drew massive galleries and despite making the cut by a single shot and finishing well

hile the immaculate tournament- down the field, he showed a few glimpses ready surfaces had superintendents of his former brilliance, none better than the spectacular eagle on the par 4 12th on Friday. His presence, along with the likes of 2006 US Open champ Geoff Ogilvy, meant those who participated in the AGCSA's **Course Quality Officials programme not only** saw first hand one of the Open's traditional layouts in tournament condition, but also some of Australia's finest professionals.

The front which descended on Royal **Sydney on Wednesday** night and Thursday brought with it 15mm of rain, hail storms, gale force winds and the coldest November minimum temperature recorded for Sydney in 100 years



University of Nebraska researchers have been able to evaluate the long-term microbial, chemical and physical characteristics of greens ranging in age from one to eight years

## Soil physical and chemical characteristics of aging golf greens

Over the past nine years researchers at the University of Nebraska have investigated the physical and chemical changes that occur as newly built putting greens age. Here they present their findings.

ince 1997 research at the University of Nebraska has been focused on a USGAfunded project focused on developing a better understanding of the agronomic characteristics of sand-based rootzones as they mature.

While many research endeavours may be conducted for two or sometimes three years it is rare when a research site is evaluated for more than five years. Thanks to long term funding commitment of the USGA and in the initial five years, the Environmental Institute for Golf and the USGA, we have been able to evaluate the long-term microbial, chemical and physical characteristics of structured research greens ranging in age from one to eight years.

The research on golf green microbial ecology has been reported in numerous publications (Karek et al. 2002, 2003, Gaussoin and Shearman, 2003). This article will focus on a summary of the physical and chemical characteristics of aging golf greens.

## EXPERIMENT SET-UP AND DESIGN

Research was conducted at the University of Nebraska's John Seaton Anderson Turfgrass Research Facility. Four experimental greens were constructed following USGA specifications in sequential years from 1997 to 2000. Treatments included two rootzones; 80:20 sand and sphagnum peat and an 80:15:5 sand, sphagnum peat, and soil (silty clay loam) and two establishment grow-in programmes, accelerated and controlled

Establishment treatments were based on recommendations gathered by surveying

golf course superintendents and a USGA agronomist with experience in establishing putting greens (Table 1).

The accelerated establishment treatment included high nutrient inputs and was intended to speed turfgrass cover development and readiness for play. The controlled establishment treatment was based on agronomically sound turfgrass nutrition requirements. Pre-plant fertiliser was incorporated into the top 8cm of the rootzone prior to seeding. Analyses for pre-plant fertilisers applied were 16N-11P-10K, 15N-0P-24K, 38N-0P-0K, and 0N-0P-0K (STEP). STEP is a micronutrient fertiliser with an analysis of 12Mg-9S-0.5Cu-8Fe-3Mn-1Zn.

Plots were seeded with 'Providence' creeping bentgrass. Post-plant fertilisers were applied during the growing season and had analyses of 0N-0P-0K (STEP) and 16N-11P-10K. During the establishment year, the total amount of N. P. and K of the accelerated establishment treatment was two times and four times the amount of the controlled establishment treatment for pre-plant and postplant, respectively (Table 1).

The first putting green was constructed in late summer of 1996. The rootzones were allowed to settle over the winter and seeded 30





May, 1997. The same procedures were used for construction and seeding of subsequent greens in 1998, 1999, and 2000.

Following the establishment year, management practices applied to the putting greens did not differ and were maintained according to regional recommendations for golf course putting greens. Plots were mowed at 3.175mm with annual fertility applications of N, P, and K at 3.5, 2 and 3.5 lbs/1000 ft2 (1.5, 0.9, and 1.5kg/93m<sup>2</sup>) respectively.

Management practices included sand topdressing as follows: light, frequent during the growing season every 10 to 14 days at a rate relative to turfgrass growth, combined with vertical mowing; heavy sand topdressing twice annually (spring and autumn) at a rate sufficient to fill coring holes 1.27cm in diameter spaced 5cmx5cm. Traffic stress was applied three times weekly using modified greens mower rollers with golf shoe spikes attached to the rollers.

## SOIL PHYSICAL AND CHEMICAL CHARACTERISATION DATA COLLECTION

Rootzone infiltration was determined in situ yearly in October with a thin-walled single ring infiltrometer (15.24cm diameter) at three locations per plot. Undisturbed soil cores were obtained from each of the areas sampled for infiltration and analysed using physical property testing procedures. Grass and thatch

Visual accumulation of organic matter as a green ages from five years through eight



were removed. Bulk density and capillary porosity data was collected.

Soil samples were obtained annually from 1997 to 2003 for USGA-specification putting greens. Soil samples were collected to a 7.6cm depth in autumn each year with a 2.5cm diameter soil probe. Thatch was removed from all samples.

Soil samples were air-dried prior to chemical analysis. Chemical analyses were

performed and analysed for pH, electrical conductivity for total soluble salts, organic matter by loss-on-ignition, nitrate-nitrogen (NO3-N) by flow injection analysis, phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sodium (Na), sulfur (S), zinc (Zn), iron (Fe), manganese (Mn), copper (Cu) and boron (B). The cation exchange capacity (CEC) of each sample was obtained by summing the exchangeable cations.

## RESULTS SOIL PHYSICAL CHARACTERISATION RESULTS

After the establishment year, rootzone treatment influenced soil physical properties while establishment treatments did not. Air-filled porosity (i.e. large pores), capillary porosity (i.e. small pores), total porosity, bulk density, and infiltration were significantly correlated with rootzone age for both rootzones. All soil physical properties demonstrated the same rate of change (slope) with age between the two rootzone treatments.

Capillary porosity was correlated with rootzone age (increased as green aged), and increased 53 per cent and 60 per cent for



ırch

the 80:20 and 80:15:5 rootzones respectively. Air-filled porosity was negatively correlated (decreased as green aged) with rootzone age and decreased 28 per cent for the 80:20 rootzone and 34 per cent for the 80:15:5 rootzone.

Others have reported similar increases in capillary porosity and decreases in air-filled porosity in aging putting green rootzones. Habeck and Christians (2000) reported an increase in capillary porosity and a decrease in air-filled porosity from clay contamination. Ok et al. (2003) reported a 220 per cent increase in capillary porosity and a 60 per cent decrease in air-filled porosity 3.5 years after establishment due to changes in the pore size distribution and thatch accumulation. Murphy et al. (1993) reported that air-filled porosity decreased as organic matter increased. McCoy (1992) reported that decreases in air-filled porosity often resulted in decreased infiltration.

Infiltration decreased as the greens matured. Infiltration declined 70 per cent for the 80:20 rootzone, while the 80:15:5 rootzone declined 74 per cent. The soil amended rootzone, 80:15:5, initially had lower infiltration than the 80:20 rootzone, however both declined at the same rate. Our findings support Waddington et al. (1992), who reported lower infiltration for rootzones amended with soil. Also, several researchers have documented decreases in infiltration concurrent with changes with rootzone soil physical properties with time (Habeck and Christians, 2000; Curtis and Pulis, 2001; Gibbs et al. 2001; Ok et al. 2003).

Reductions in rootzone infiltration have been attributed to contamination from silt (0.002-0.05mm) and clay (< 0.002mm) particles (Callahan et al. 1997; Habeck and Christians 2000), fine particle migration (Callahan et al. 1997) and organic matter layering (Curtis and Pulis, 2001). Our data indicates no increase in clay accumulation or clay migration.

In addition, the soil amended rootzone infiltration, while initially lower, did not decline at a faster rate than the rootzone without soil. Curtis and Pulis (2001) reported that infiltration declined from 95cm/hr<sup>-1</sup> to 3.1cm/hr<sup>-1</sup> three years after establishment because of organic matter layering in the rootzone.

In our study, the light frequent sand topdressing applications may explain the relatively slow decline in infiltration as no layering was present in the rootzones. Surface organic matter accumulation has been reported to cause reduction in infiltration of putting green rootzones (Murphy et al. 1993; Habeck and Christians, 2000; Curtis and Pulis, 2001; Ok et

TABLE 1. ESTABLISHMENT YEAR TREATMENTS ON USGA GREENS FROM 1997 TO 2000.

Accelerated					Controlled			
Applications	N†	Р	K		N	Р	K	STEP
				STEP‡				
			lk	os 1000 ft²				
Pre-plant§	6	1.5	3.2	16	3	0.75	1.6	8
Post plant¶	5	1.5	3	2.3	1.2	4.2	0.75	2.3
Total#	11	3	6.2	18.3	4.2	7.5	1.2	10.3
†Amounts are	actual	N, P and k	ζ.					
‡Micronutrien	t fertilis	er with ana	lysis 12M	g-9S-0.5Cւ	ı-8Fe-3Mn-	1Zn.		
&Pre-plant wa	s incor	oorated into	o upper 8	cm of the r	ootzone pr	rior to seedi	na. Analys	ses for

¶Post plant fertilisers applied during the growing season.

#Total application amounts during the establishment year.

al. 2003). In our study a mat layer did develop with time, however data were not collected on the amount or rate of accumulation.

Rootzone samples taken in 2004 from below the visible mat layer had lower infiltration than the pre-construction infiltration values. The infiltration decline with age may have resulted from increased fine sand amounts and decreased coarse sand in the rootzone. The rootzone samples taken in 2004 had increased fine sand amounts in six of the eight rootzones, and decreased coarse sand in five of the eight rootzones sampled, compared to the pre-construction rootzones.

These changes likely originated from the sand topdressing applications. The USGA recommends that topdressing sand meet rootzone particle size distribution. The topdressing sand used in our study met USGA specifications, however, it had had a higher amount of fine sand (0.25-0.15mm) particles, and less coarse sand (0.5-1.0mm) than the sand used in the original rootzones. The fine sand particles may have been placed into the rootzone during core cultivation, especially during the first two years.

Zontek (1979) and Vavrek (1995) reported that the long-term affects of continued sand topdressing on putting green soil physical properties are not well-defined. The decline in rootzone infiltration may be attributed to the increased fine sand content of the rootzone. However, the decline in infiltration due to increased fine sand content does not completely explain the reduction of infiltration. Organic matter accumulation may account for the decrease but this was not measured in this study.

Bulk density was correlated with

rootzone age (increased as green matured), and increased 4 per cent for the 80:15:5 and 6 per cent for the 80:20 rootzone after the establishment year. Total porosity was negatively correlated with rootzone age and decreased 5 per cent for the 80:20 rootzone and 7 per cent for the 80:15:5 rootzone. An increase in bulk density is expected to be related to a decrease in total porosity. Compaction may account for the observed increased bulk density and decreased total porosity.

Few studies have reported changes in bulk density and total porosity with rootzone age. Ok et al. (2003) reported minimal change in bulk density and total porosity over three years. Habeck and Christians (2000) reported a decrease in bulk density with age, but concluded that this data was not as expected because their samples were contaminated with thatch. Murphy et al. (1993) reported an increased total porosity with age, which may have been the result of sampling different locations. Bulk density was not reported.

#### CHEMICAL CHARACTERISATION

USGA rootzone mixes comprised of 80:20 (sand:peat) generally were not significantly different from 80:15:5 (sand:peat:soil) during the establishment year or beyond for chemical properties investigated. For the purpose of clarity, establishment year and grow-in year will be used synonymously throughout this discussion.

During the grow-in year, all but four of the chemical properties investigated were significantly greater for the accelerated growin treatment when compared to the controlled grow-in treatment. Boron, organic matter, and sodium were also higher in the accelerated grow-in treatment, but these differences were not significant. Only pH was lower in the accelerated grow-in treatment during the grow-in year. This was likely caused by an acidification effect from increased fertiliser inputs containing ammonium-nitrogen and sulfur, both known to lower soil pH (Beard, 1973, 2002; Fulton, 2002; Landschoot, 1998; McCarty et al., 2003; Turgeon, 1999; Waddington, 1992; Wortmann et al., 2003).

All USGA-specification putting greens receiving increased amounts of phosphorus during the first year of establishment retain significantly more phosphorus beyond establishment. This relationship was not evident for any other nutrients investigated.

Phosphorus retention likely occurred because it is relatively non-mobile even in high-sand soils and thus does not readily leach (Lee et al., 2004; McCarty et al., 2003; Sartain and Brown, 1998; Turgeon, 1999; Turner and Hummel, 1992). Furthermore, sands used in construction of these greens were limestone (CaCO<sub>3</sub>)-based, calcareous sands with an alkaline pH. Alkaline conditions have been found to further contribute to limited mobility

of phosphorus because alkalinity increases the tendency of phosphorus to form complexes with other elements in the soil and is less soluble for plant uptake or leaching (Beard, 1973; McCarty et al., 2003; McKenzie, 2003; Tisdale and Nelson, 1956).

Calcium carbonate in calcareous soils may also limit the mobility of phosphorus because calcium, in the presence of CaCO<sub>3</sub>, bonds with phosphorus and forms insoluble calcium phosphates (Beard, 1973; Larsen, 1967). In a two-year study on a sand-based putting green with a soil pH of 8.0, phosphorus was found to increase rapidly in the soil after only one to two years of annual fertiliser applications (Branham et al., 2000). For this reason, slightly alkaline soil conditions and calcareous sands may have contributed to phosphorus retention in the putting green rootzone over time when compared to other nutrients investigated.

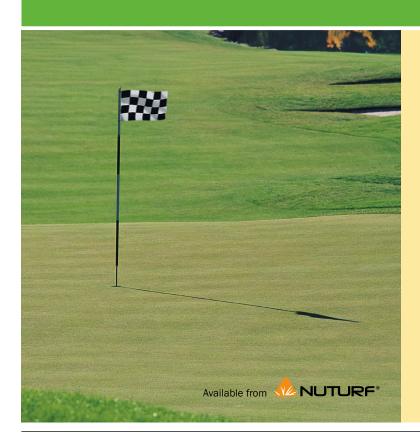
Conversely, several studies have observed considerable phosphorus leaching, to varying degrees, through sand-based systems (Bacon and Davey, 1982; Kargbo et al., 1991; Shuman, 2002; Shuman et al., 2000). However, researchers in their respective studies primarily attributed phosphorus leaching to the turfgrass

being young during the establishment year when roots were unable to adequately absorb phosphorus from the soil (Shuman et al., 2000), excessive rates of phosphorus fertilisation (Shuman, 2002), or during increased irrigation, high rainfall events, or both (Bacon and Davey, 1982; Kargbo et al., 1991; Shuman, 2002).

High soil pH can also limit the solubility of other nutrients in addition to phosphorus, including iron, manganese, copper, boron, and zinc (Beard, 1973; Carrow et al., 2001; McCarty et al., 2003; Tisdale and Nelson, 1956). Iron, copper, and zinc, all of which exhibit varying degrees of solubility and mobility in soils, were also observed to be consistently higher beyond the establishment year for greens receiving the accelerated grow-in treatment, although these differences were not always significant for iron, copper, or zinc.

Nitrate-nitrogen (NO<sub>3</sub>-N) is highly soluble and therefore very mobile in soils (Beard, 1973; Snyder and Cisar, 2000; Tisdale and Nelson, 1956). Numerous studies have documented NO<sub>3</sub>-N detection in leachates from sand-based turfgrass rootzones (Brauen and Stahnke, 1995; Brown et al., 1982; Mancino and Troll, 1990; Shuman, 2002; Shuman et al., 2000; ▶





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research

## Infiltration of two rootzones five and seven years after construction

¶ Snyder et al., 1981). As expected, NO<sub>3</sub>-N in our study was not retained beyond the grow-in year for rootzones receiving the accelerated grow-in treatment when compared to rootzones receiving the controlled grow-in treatment.

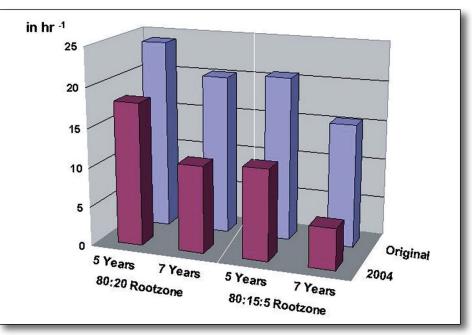
Other relatively mobile nutrients that are readily lost by leaching include potassium and sulfur, particularly in sulfate form (Beard, 1973). Both are highly soluble in the soil solution, and in the case of potassium, highly exchangeable on exchange sites of colloidal surfaces, causing them to be less likely adsorbed by soil particles or taken up by roots (Beard, 1973; Johnson et al., 2002; McCarty et al., 2003). It is speculated that greens receiving the accelerated grow-in treatment in this study may not have retained potassium, sulfur, or other mobile nutrients with time because the amount supplied exceeded turfgrass demand.

Putting green establishment year comparisons, when compared among the four experimental putting greens (i.e., green constructed in 1997 vs. 1998, etc.), was significant for all but three chemical properties investigated. While all four experimental putting greens were constructed in the same way from 1997 to 2000 and all met USGA rootzone specifications, they were not constructed with exactly the same rootzone material each year and therefore were not identical (Lewis, 2005).

Results from this study suggest that USGA specification putting greens are also not the same in regard to nutritional status as evident by the variability between these four USGA experimental putting greens and the significant differences for nearly all chemical properties investigated.

All nutrients and chemical properties investigated, excluding pH and potassium, generally decreased following the grow-in year, but began to increase several years later. Increased chemical properties and nutrient retention may be explained, at least in part, by the development of a mat layer. Mat development was observed, although not measured, in the upper region of putting green rootzones in this study, particularly as putting greens increased in age.

Beard (1973) and Carrow (2004) define mat as an organic zone, or layer, that is buried below the soil surface and comprised of partially decomposed thatch. Organics in the mat are intermixed with soil from sand



topdressing, with sand as the dominant matrix. Organic matter enhances nutrient retention and cation exchange capacity in high-sand rootzones (Beard, 1973; Bigelow et al., 2001; Callahan et al., 2001; Turgeon, 1999). As such, mat development and organic matter accumulation in our study likely contributed to increased chemical properties, such as CEC, and nutrient retention in older putting greens.

In summary, the 80:20 (sand:peat) rootzone mix was generally not chemically different from the 80:15:5 (sand:peat:soil) during or beyond the establishment year. Additionally, Lewis (2005) found that rootzone mix generally had no effect on turfgrass establishment or quality ratings for putting greens used in this study. Since rootzone mix generally had no effect, incorporating soil into the rootzone may be a more economical alternative than peat when used as an amendment in USGA greens.

## CONCLUSIONS SOIL PHYSICAL CHARACTERISATION

After eight years, rootzone infiltration remained acceptable with no apparent negative response from the addition of soil to the rootzone. The change in soil physical properties was in part the result of fine sand accumulation from topdressing sand. Fine sand accumulation from topdressing applications resulted in increased capillary porosity, decreased air-filled porosity and infiltration.

Future studies of organic matter dynamics with time are needed as their influence on soil physical properties are not well defined or in some cases contradictory in the turfgrass literature. While this research investigated physical dynamics of sand rootzone as they age, minimal organic matter data was obtained.

### CHEMICAL CHARACTERISATION

During the grow-in year, all but four of the chemical properties investigated were significantly higher for the accelerated grow-in treatment when compared to the controlled grow-in treatment. Only soil pH was lower in the accelerated grow-in treatment when compared to the controlled grow-in treatment.

Excluding phosphorus, establishment treatment generally had no effect beyond the grow-in year. Only phosphorus remained higher for greens receiving increased inputs via the accelerated fertility program. Furthermore, Lewis (2005) reported that the accelerated establishment treatment did not speed turfgrass establishment for putting greens investigated in this study. In fact, rootzones receiving the accelerated establishment resulted in reduced creeping bentgrass quality ratings due to increased incidence of Pythium foliar blight (*Pythium sp.*) injury.

Increased fertiliser inputs during the establishment year may not be feasible or environmentally responsible since they had negative effects on turfgrass establishment and these rootzones did not retain these inputs over time when compared to the controlled grow-in treatment.

Additionally, since the rootzone containing soil was essentially equal to the rootzone without soil, incorporating an appropriate, locally available soil into the rootzone may be a more economical alternative than peat when used as an amendment in USGA greens.

#### **ACKNOWLEDGEMENTS**

ATM magazine wishes to thank the authors and USGATERO for allowing publication of this research (USGATERO 5(14):1-11. A full list of references for this research article can be obtained from the AGCSA.



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## TORO TOPO TUPF TOUP



t's the course everyone is talking about. Pick up any golfing magazine whether it's Australian or one of the big American or European publications and chances are you'll come across an article on one of Australia's newest and most stunning public access golf courses.

We are of course taking about Barnbougle Dunes which since its grand unveiling in mid-December 2004 has received worldwide acclaim. In that short period Barnbougle has been ranked the seventh best course in Australia (only the likes of Royal Melbourne, New South Wales, Kingston Heath, Ellerston, Royal Adelaide and Metropolitan rank higher), while it debuted at 49 on the world's top 100 rankings.

Located on the northern coastline of Tasmania, Barnbougle twists and stretches its way through a striking mountainous dune landscape, some of the best golfing terrain you will ever find. The course boasts rolling fescue fairways, tumbling fescue/bent greens and vistas beyond compare.

As many who have been fortunate to visit the course have





commented, it's a special design on a special track of land and no one knows more about that than the man fortunate enough to maintain this Down Under gem – course superintendent Danny Brown. Having been superintendent at Barnbougle Dunes for the past two years, Brown without doubt has one of the most enviable roles in the Australian turf management industry.

A special course like Barnbougle requires special maintenance and it's no surprise to learn that Toro plays a key role in the upkeep of the course. Toro has been an integral component since the early days of construction and grow-in and when Brown took over as superintendent in January 2005 he knew his job would be made all the more easier by having a 'red shed'.

Barnbougle's arsenal of Toro equipment includes:

- One Reelmaster 6700-D fairway
- One Reelmaster 5500-D fairway
- One Groundsmaster 328-D

## Location: Barnbougle Dunes, Tasmania Superintendent: Danny Brown





- Five Greensmaster 1000 walkbehinds
- Two Greensmaster 3150 triplex greens mowers
- One Sand Pro bunker rake
- Two Workman 2100 utilities and one Toro Twister utility

When it comes to picking out a favourite Toro product from that list, Brown isn't fussy. "I like all of them," he laughs. "Each piece of Toro machinery suits this site particularly well. Each does their job and they never complain.

"This site is very big and undulating and because of that transmissions, braking systems and hydraulics get a real good workout. We have 20 hectares of fairways. The tyres too on the fairway units are fantastic and we're not leaving

tyre marks on the fairways. The lightweight Reelmaster 5500-D is sensational.

"The big thing about the Toro equipment we have is that they don't get knocked about when they hit sand. Due to the course's proximity to the beach and with the wind that can sometimes blow a huge amount of sand out of bunkers, there could potentially be an issue. However, the Toro cutting units always keep their cut and they're always sharp. You can't fault them.

"Seeing that we are pretty much wall-to-wall fescue which has a very erect growth pattern, you have to be spot on with the cut and that's where the Toro cutting units come into their own. Both the ride-on (Greensmaster 3150) and walk behind (Greensmaster 1000) greens mowers work wonders here at Barnbougle and we are yet to have a complaint about the cut on the turf."

As the acclaimed leader in riding greensmowers, Toro takes great pride in offering the highest quality products that are on the cutting edge of technology. And when it comes to a smooth cutting surface, no product matches the beauty and consistency achieved with the new riding Greensmaster cutting unit.

One of the key features of the cutting unit is the dual precision adjustment system (DPA) which simplifies the bedknife-to-reel alignment process. A clicking dial on each side of the cutting unit adjusts and holds the bedknife in exact increments. It's fast, easy and requires no special tools. The bedknife maintains a consistent angle throughout the life of the reel, providing the same quality of cut every time out.

Other features of the cutting units include reduced maintenance. Sealed bearings are maintenancefree and eliminate spills on greens due to over-greasing. The precisely manufactured rollers remain level without adjustments and the bedknife removes easily for sharpening. This all accounts for fewer human errors and greater time savings.

Unlike any other cutting unit available today, the Greensmaster cutting unit design features a die-cast aluminium frame. This increases the torsional strength of the cutting unit and protects against corrosion. Every part is precisely manufactured for perfect alignment to provide the highest quality cut. Both the 8- and 11-blade reels are made from harder steel for a longer life. Grass baskets are mounted independent of the cutting units

## Toro Turf Tour Toro



## Location: Barnbougle Dunes, Tasmania Superintendent: Danny Brown

to ensure that the varying weight of the basket does not affect the cutting performance.

Another big benefit of the Toro triplex is that mechanics and superintendents alike appreciate the service-friendly design of the Greensmaster. The new cutting unit virtually eliminates daily maintenance, and an available onboard backlapping kit helps keep the blades sharp. Service points are readily accessible and designed for quick adjustments without special tools.

While the machinery fleet gets a solid workout, there is one other key component when it comes to maintaining Barnbougle – the irrigation system. Brown is fortunate to have one of the best systems in the business, a Toro Site Pro with CDS decoders controlling Toro 830 and 850 Series rotors.

Toro was the standout choice for Barnbougle and as Toro's national golf manager for irrigation Patrick O'Shannessy says the site's irrigation system required special attention to detail.

"We recommended the use of individual sprinkler control on all areas of the course for several reasons," says O'Shannessy. "The oceanfront location dictated that maximum control capability was needed to combat site factors such as wind and slope.

"By fine-tuning programmes, wind is better managed or avoided by shortening overall watering time. Also this level of control drastically reduces water use by delivering exactly the water required to each sprinkler rather than 'block' operation where groups of sprinklers are controlled by the run time of a single valve."





With Tasmania experiencing one of its driest years on record, the efficiency and accuracy of the Toro irrigation system has never been more crucial and Brown couldn't be happier with the usability and suitability of the Site Pro system.

"The Toro Site Pro is a fantastic system," adds Brown. "The irrigation system does get a fair workout considering the size of the place. It constantly performs and it's only human error that stops it from working. It delivers exactly what we want where we need it which on this site is imperative given the unique conditions which can impact on the course."

Aside from the outstanding

performance and suitability of Toro's array of turf management solutions, there is another reason why Toro is a perfect fit at Barnbougle. Being nestled just a few kilometres away from the small hamlet of Bridport on the northern coast of Tasmania, Barnbougle is a good hour's drive from Launceston, give or take a few logging trucks.

In some circumstances being in such a remote location would create problems when it comes to servicing, but with Toro's legendary customer service and after-sales support, Brown and his crew have little to worry about should a problem arise.

"Last year we did a yoke on the Reelmaster 5500-D," recalls Brown. "It snapped and they had to get a replacement from the US. Until they did, they were able to take one off a unit in Sydney and got it down to us within two days. Now that's exemplary service.

"That sort of service makes any superintendent's job a lot easier. Toro representatives come out to see us as often as they can and they are never more than a phone call away. The service is fantastic and it's comforting to know that you'll always be looked after no matter what the circumstance."







Ranked among the top 50 golf courses in the world and a remarkable #7 in Australia after just 2 years, no wonder Barnbougle Dunes has become a talking point for golf lovers

Who did Barnbougle Dunes turn to to help nurture this golfing Mecca? Toro!

With Toro Total Solutions, world class golf courses like Barnbougle Dunes can now take an integrated approach to course management and maintenance with state of the art Toro commercial turf equipment and Toro irrigation systems. They also know they can count on Toro for the highest standards of backup support, advice and service. It's nice to know we are helping in more ways than one.

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the world over.



# **Jews**

## SUPERINTENDENTS EMBRACE AGCSA ENVIRONMENTAL INITIATIVE

epresentatives from over 100 golf clubs across the country turned out for the first series of workshops as part of the Australian Golf Course Superintendents' Association's world-leading Environmental Management Initiative.

The interactive workshops were conducted by the AGCSA and centred around the creation of ISO 14001 compliant environmental management systems for golf courses. The workshops were held in Melbourne, Perth, Adelaide, Brisbane and Sydney and attracted 105 golf clubs and their superintendents who familiarised themselves with the e-par EMS system developed by Terry Muir.

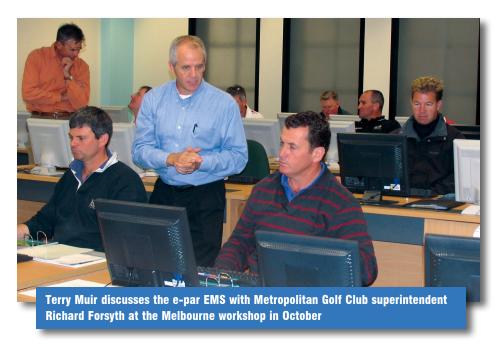
Sixteen Victorian clubs attended the first workshop on Monday, 9 October in Melbourne, including the likes of Royal Melbourne (superintendent Jim Porter), Kingston Heath (superintendent Martin Greenwood) and Metropolitan (superintendent Richard Forsyth). Two days later in Adelaide, 11 clubs from South Australia attended the workshop at Urrbrae College TAFE, while on 12 October, 18 clubs attended the Perth workshop. In Brisbane 20 clubs were in attendance, while it was standing room only in Sydney where 40 clubs - the biggest turnout of all the workshops - were represented.

"The workshops were tremendous," says Muir. "I can't say enough about the guys. They have really embraced the initiative and the enthusiasm at each of the workshops was excellent. These guys are the innovators and early adopters who give an initiative like this the impetus to become a real success.

"And the feedback has been tremendous too. Some have said that they didn't know too much about environmental management systems, but through being a part of the initiative they are now really motivated to improve their environmental management responsibilities which can only be good."

The workshops kicked off with a general overview from Muir of the history leading up to the environmental initiative, including a reminder about the 2001 Warringah Golf Club incident which sparked the industry's push to re-evaluate its environmental management principles. From there, attendees were taken through the benefits of having an EMS at their club and pressing upon them that an EMS was a progressive and flexible document which demonstrated environmental issues of concern were being addressed and given priority by the club.

Each workshop then went through the



computer-based e-par EMS system. E-par is set out like an 18-hole golf course and as users play each hole they gradually build an environmental management system for their course.

Each hole represents an important environmental management element of the ISO 14001 standard for environmental management systems. Each shot the user plays provides them with all the 'how-to' information required to develop their EMS. Each hole has access to templates, sample documents, checklists and advice and throughout the course of the workshops users were able to create:

- Environmental policy statements
- Risk assessments
- Environmental action plans
- Environmental indicators booklet
- Environment manuals
- Standard operating procedures (e.g.: spill response procedures)

After creating these documents users then uploaded them onto the e-par server which they have access to anywhere, anytime via a password.

"What I liked about the workshops was that they were informal and really interactive," says Muir. "If the guys had an issue they were able to brainstorm it. Another key area for the guys was finding out how to get information on legislation that pertains to their operations, which has always been an issue.

"One of the most encouraging signs was that the workshops not only attracted superintendents and their assistants, but also general managers and greens committee

chairmen. That demonstrates the message is getting across not just to superintendents but others within the golf club management structure of their club's environmental responsibilities which is very encouraging.

"I also fielded calls from the WA and SA DEC units to see how the workshops went which shows that the initiative is being followed with immense interest by such authorities."

AGCSA joint general manager John Neylan attended the Melbourne and Adelaide workshops and was impressed with the turnout and response from superintendents.

"Everything is working extremely well and it was clear the superintendents were getting a lot out of the workshops," says Neylan. "In observing the first couple of workshops I would see tremendous value in clubs bringing more than one member along to the workshops. Having two members means there is better interaction and more exchange of ideas."

Backing up the success of the workshops has been the number of downloads from the e-par website, a central component of the system, following the series of workshops. According to Muir there were over 500 downloads of environmental documents from the website in the first week which was "extremely encouraging".

As well as the workshops, information sessions were held at Bonville International and Royal Hobart Golf Club in November.

The second series of AGCSA Environmental Initiative workshops have been earmarked for March 2007. More details of times and venues will be made shortly.



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## Simplot Pro-Line's online portal



Simplot Pro-Line has recently launched simplotproline.com.au, a website specifically for Australian conditions and practices. Simplot Pro-Line general manager Matt Scott says the new site will serve as an information portal for customers to access the latest news, product information, safety documents and specials.

By embracing emerging digital technologies, the website looks like being more than a few product sheets. "Upcoming features to be implemented shortly will include product specific sections, videos of product demonstrations, RSS news feeds, audio

podcasts and nutrient calculators along with other information services that our customers have been requesting," says Scott.

"Many websites these days are done by third parties and are rarely updated. By designing, writing and maintaining the website completely in-house we can get information about our new products out to our customers that day.

"It's our knowledge and outstanding customer service that has sets us apart from our competition. We want to make simplotproline. com.au part of that commitment, and part of our customer's turf nutrition program."

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# SVGCSA 🗢

o all our trade sponsors, the VGCSA thanks you all for your generous and continued support of our association over the past year and into 2007. Our calendar was delivered earlier in December, so if any member has not received a copy please contact one of the committee members and we will forward one straight away. Please support the sponsors of our association.

Water storages are around 40 per cent and in decline, with Stage 2 restrictions in place and Stage 3 not far around the corner. It looks like we are all going to be on our toes for what will be an extremely dry summer.

With golf clubs looking for alternative water sources and with superintendents' knowledge of their course plus our professional attitude to the environment, we will all being doing our best to give members the best possible surfaces to enjoy golf over the summer months.

### **ASSOCIATION DAYS**

In early October the VGCSA held its annual tournament and fundraising day at The Sands, Torquay, sponsored by Bayer Environmental Science. Numbers were slightly down on last year, but it proved to be a successful day.

Congratulations to past committee member, the shinning light of golf among superintendents in Victoria, Brett Balloch from Anglesea Golf Club who won the golf and for his efforts will be going to the 23rd Australian Turfgrass Conference in Cairns. Thank you to Nathan Bennett and The Sands, Torquay for the use of the course.

Next year's tournament will be at Kingston Heath Golf Club and I thank superintendent Martin Greenwood who approached the VGCSA to have a meeting at the club in 2007.



The VGCSA Christmas meeting was held in late November at Box Hill Golf Club and sponsored by Total Turf Machinery. Generally a meeting that in recent years has had very low numbers, it was pleasing to see 77 VGCSA members turn up with plenty of new faces.

Maybe it was a mixture of changes that made this a success, bringing it out of December to November, morning golf and lunch, or having Phil Ford talk instead of a comedian! For whatever reason, numbers were great and thank you to everyone who ventured out to Box Hill and to host superintendent Mark Jennings.

### **2007 MEETING DATES**

Looking forward to 2007, we have now allocated golf clubs to host our meetings. If you wish your club to be nominated for 2008, contact any VGCSA committee member to start the ball rolling. The meetings for 2007 are as follows:

**Education meeting:** Tuesday, 27 February (Northern Golf Club)

**Country meeting:** Sunday/Monday 25-26 March (Bright Golf Club)

**Annual General Meeting:** Monday, 7 May – (The National Golf Club)

Superintendent/Managers day: TBA

Annual Open Tournament and turf research fundraising day: Thursday, 11 October (Kingston Heath Golf Club)

**Christmas meeting:** Saturday, 8 December (Huntingdale Golf Club)

### **COMMITTEE AT WORK**

Congratulations to VGCSA vice-president and superintendent at Huntingdale Golf Club Michael Freeman for presenting the course for the Australian Masters in such magnificent condition. Michael continues to have the course in better condition each year and this year's surprise was noticing that greens surrounds had been hand mown. It is a credit to Michael to run this event every year and still contribute to the VGCSA. On behalf of the VGCSA committee, I wish all members a Merry Christmas and a happy New Year. See you all at Northern Golf Club in February 2007.

MARK PROSSER, PRESIDENT, VGCSA.



GAA NSW has wrapped up 2006 with a gathering of over 250 turf industry workers for our annual Sportsman's Charity Luncheon. The luncheon was held at Parramatta RSL Club on 17 November with guest speakers Bill Young and Wendell Sailor.

We were pleased to have the current Sevens Rugby coach Brian "Billy" Melrose interview both stars and Billy didn't hold back on asking those somewhat sticky questions, particularly of Wendell. Both speakers were very enjoyable and stayed during the luncheon to mix with guests. The day was a great success and we thank all the organisations who donated raffle prizes and auction items and for everyone who attended.

With another full calendar of events planned for 2007 the committee are going to enjoy the break over the Christmas-New Year period as there won't be much of a break during the year. We will hit off the year with our annual Golf Day on 20 March at Ashlar

Golf Course. We are very fortunate to have such great supporters of our association who assist us in providing education, training and networking opportunities. To all our sponsors and members we wish you all the best for a safe and happy Christmas and here's hoping 2007 is filled with buckets of rain falling over our dams and playing fields.

GRAEME LOGAN, PRESIDENT, TGAA NSW.



easons greetings to all. Just to be different in this issue of ATM, I would like to write briefly about the formation of our small and unique association in WA.

The association was formed around 1970, with founding members Pat Maher, Allan Barlow, Gordon Catchpole and Neville McNamara progressively building the membership of practicing greenkeepers in WA from a fragmented bunch of people to a group with a united interest in turf surface preparation and the ongoing development of the turf management profession.

The intention behind the formation of the association was to formalise the art of greenkeeping and provide a networking conduit for greenkeepers to share ideas, information and importantly lend support to each other in times of need. The GCSAWA was born and so begun the evolvement of our association to what it is today.

In 1980 the executive committee of the time, including current members Tim Chape, Mark Claes and Trevor Strachan, elevated the

professionalism of the association by writing the GCSAWA Constitution and Code of Ethics which set a benchmark for the association's management and the expectations of its members. That Code of Ethics is worth something. It has stood the test of time and is ultimately responsible for the generally cohesive, progressive and professional industry that we all exist in.

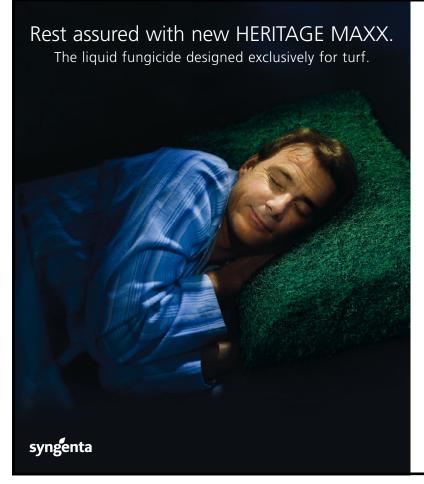
#### GCSAWA CODE OF ETHICS

As a member of the GCSAWA I accept and fully agree to abide by this code and pledge myself to:

- Recognise and discharge all my responsibilities and duties in such a fashion as to be a credit to this association and profession.
- Practice and insist upon sound business and turf management principles, in exercising the responsibilities of my role.
- Utilise every practicable opportunity to expand my professional knowledge, thereby improving myself and my

- profession.
- Maintain the highest standards of personal conduct to reflect credit on and add to the stature of the profession of golf superintendency.
- 5. Extend assistance to any golf club, when called upon by the superintendent.
- Abstain from debasement of, or encroachment upon, the professional reputation, practice or employment of another superintendent.
- Lend my support and actively participate in the efforts of my association to improve public understanding and recognition of the profession of golf course superintendency.
- 8. Abstain from any exploitation of my association, industry of profession.
- Present information and participate as a witness in all proceedings to which there exists evidence of a violation of this Code.

BRAD SOFIELD, PRESIDENT, GCSAWA.



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## SAGCSA 🕸

Merry Christmas and happy New Year to all in the turf industry. Dry conditions continue to provide turf managers with plenty of challenges and here in South Australia level three water restrictions are now in place for users of mains water. We are in continuing discussions with SA Water to get manageable exemptions for clubs on mains water which we hope will allow superintendents to maintain at least greens, surrounds and tees.

On to more encouraging news, and Glenelg Golf Club superintendent Daryl Sellar capped off a remarkable year recently when he was named the Australian Golf Digest magazine's Superintendent of the Year.

Sellar was honoured at the awards dinner held at Huntingdale Golf Club on the Monday before the Mastercard Masters and was among an exalted list of winners which included 2006 US Open champion Geoff Ogilvy (player of the year), Karrie Webb (female player of the year) and Michael Sim (rookie player of the year). The awards have been running since 1990.

Sellar, who attended the awards dinner with wife Andrea, is the inaugural winner of the award. The Superintendent of the Year Award was one of two new categories created by Digest in 2006, the other being Coach of the Year which was won by Dale Lynch. It just goes to show that the profile of superintendents is increasing

Daryl Sellar capped off a great year when he was namd Australian Golf Digest's Superintendent of the Year

across the country. The honour comes in the same year that Daryl received the AGCSA's Excellence in Golf Course Management Award at the 22nd Australian Turfgrass Conference in Brisbane. Unfortunately Daryl is on the sick list

at the moment, but on behalf of the SAGCSA, I would like to congratulate Daryl on this great achievement and hope he gets back on his feet shortly and doing what he does best out on the golf course.

Elsewhere in SA there has been a bit of movement in the superintendent ranks recently. Brian Cooper has left Mt Osmond Golf Club for a job in the mining industry. Brian has been a long time superintendent and a SAGCSA committee member whose input will be missed in the future.

A farewell dinner was held on 22 November where Brian and his wife Colleen were presented with a gift from SAGCSA members in appreciation for all the work they have done for the association for the best part of 20 years. Brian's successor is his former 2IC Barry Bryant.

The other departure sees Grange Golf Club superintendent Chris Klei leaving the industry. At the time of writing this report his replacement had yet to be named

The first SAGCSA meeting for 2007 will be in February at Rob Millington's Vines of Reynella Golf Club. I hope to see you all there on the day.

PETER HARFIELD, PRESIDENT, SAGCSA.



veryone here in New Zealand has been battling the elements recently. Golf courses in areas such as Otago and Southland have received well below average rainfall and consequently are experiencing periodic scrub fires.

The middle of the country continues to be inundated with rain and the northern parts are being buffeted by strong winds as well. Temperatures are cooler in many parts as well, which hampered any early spring recovery.

Whether you believe in global warming or not you would have to agree that for a small country we do have a lot of weather extremes.

Plans are well underway for the 2007 Sports Turf Conference and Trade Show to be held from 17 July, 2007. I'm pleased to report that keynote speakers include current GCSAA vice-president Ricky Heine. Ricky will be speaking on the turf industry in the US as well as other

specialist areas. Peter Donkers, winner of the AGCSA's Claude Crockford Environmental Award, is rumored to be attending as well.

The week starts with the NZGCSA 75th Jubilee Reunion to be held at the James Cook – Grand Chancellor Hotel in downtown Wellington. This will also be the main venue for conference delegates, some 15 minutes walk from the Westpac Trust Stadium where the conference will be held. The NZ conference is obviously the week before the AGCSA conference in Cairns, but it would be great to see a contingent from Australia here.

All our nine regional associations are reporting that they are finding it hard to attract members to training days because of work and other commitments. Many are looking at different ideas and ways to attract participation. These range from getting a speaker in to talk on a topic outside turf management to

including nine holes of golf. Hopefully we will see an upturn in participation long term and our regional associations will continue to prosper as they have done over the years.

With this being the last update for 2006 I would like to take the opportunity to wish each and every one of you a very Merry Christmas and all the very best for 2007.

## BRETT BURGESS, PRESIDENT, NZGCSA.



## GCSAQ 🖎

ith summer now upon us most superintendents around the country would be looking for a bit of rain. In Queensland it has been very dry with little to no rain over the last couple of months except for the odd storm which has provided some temporary relief.

Our last three field days have been very well received. In October we were on the Sunshine Coast at Headlands Golf Club. This was an excellent day full of educational information, with more than 70 members leaving with plenty of ammunition to take back to their clubs.

The day included talks from Matthew Gore from Bio-Remedie on products to help make water bodies cleaner, while Paul Spencer looked at water treatment and the effects on soil. Major sponsor Dean Smith then spoke on automatic injection units and other services that his company provides, followed by course superintendent Roberts Cains who gave us the low down on what has been happening at Headlands over the past five years, including a tour of his new Taj Mahal shed and pump

set up. Thank you to Dean Smith, Australian Irrigation Services and staff and Robert for such a great day.

The GCSAQ turf research day was held at Club Pelican in November with a very healthy turnout of around 130. Thank you to all who contributed to this day, in particular superintendent Ben Marshall for the excellent condition of the course and to major sponsor Twin View Turf. Highlight of the day was undoubtedly the turf industry's No.1 guest speaker, the highly entertaining Martyn Black who gave us a rundown on his trip to India earlier this year which proved very enlightening for everyone present.

In December it was back to Wet 'n' Wild for our Christmas Party. Thanks to the 150 who attended and for making it such a great day. It was good to see some new faces among the regulars. On the day we were graced with the presence of former association elder statesmen Jon Penberthy and Eric Rickman (now a Penberthy look-a-like) as well as Les Austin.

The GCSAQ is now co-contributing to a project looking at summer decline and patch diseases in couch. This project is being put together by Graeme and Marcelle Stirling and Percy Wong. These problems affect a lot of clubs in Queensland and through the other states so the findings will be very beneficial.

In the New Year, the GCSAQ is looking at running a series of environmental, workplace health and safety workshops for superintendents and staff. At this stage there will be one held on the north side to cater for Sunshine Coast and northern Brisbane clubs and one on the Gold Coast to cater for southern Brisbane and northern NSW members.

On behalf of the GCSAQ we wish everyone a Merry Christmas and a Happy New Year and look forward to another challenging year in 2007.

RODNEY COOK, PRESIDENT, GCSAQ



he Christmas break and New Year is always a hectic time for all and the TGAA ACT hopes that everybody has a great festive season. With very little rain and current water restrictions at level three it is going to be a long summer.

If there are any greenkeepers, or if you have recently completed a trade certificate in turf management, or you may be interested in continuing your studies and improving your qualifications, the Canberra Institute of Technology (CIT), School of Horticulture in

Weston is considering offering various courses at the certificate and diploma level for 2007. The future of these courses is dependent on the number of enrollments. Expressions of interest by anyone thinking of furthering their skills in turf management should be forwarded to the CIT.

On a similar note, the CIT also conducts regular chemical use and handling training courses (AQF Level 3). Also, the School of Horticulture will be running refresher/bridging classes covering level 3 Smartrain chemical

use. These certificates need to be updated every five years. Please contact Bruce Davies on (02) 6207 4623 for further enquiries.

As all TGAA members know, part of the benefits of being a member is that you receive a quarterly newsletter. The TGAA ACT wishes to invite any submissions you may wish to include into our next edition. Please contact Gary Dawson on (02) 6207 4624.

JUSTIN A.K. HASLAM, COMMITTEE, TGAA ACT.

## TGAA WA

he turf industry in Western Australia continues to be affected by a severe labour shortage across all sectors, which is placing greater pressure on managers to meet user expectations. It is a great concern that skilled people are leaving the industry in droves to pursue other more lucrative employment opportunities in the mining and building industries.

Turf wicket management is a specialised area where there is a need to develop more

expertise. The association is working in conjunction with Challenger TAFE and the WACA to establish a short course for turf wicket curators during the next off-season.

The University of WA turf research group held a field day in November to inspect their current turf research projects. These include a three-year study on kikuyu water use, nutrient requirements and renovation techniques, along with a trial comparing water requirements for a range of buffalo genotypes.

The association's last event of 2006 was the TGAA WA Social in November. Approximately 70 members attended the interstate day/night cricket match at the WACA, between full strength WA and Queensland teams. It was a most enjoyable evening, highlighted by the ground inspection with WACA curator Cameron Sutherland after the match.

PETER RUSCOE, PRESIDENT, TGAA WA.

## NSWGCSA

he new-look NSWGCSA Board met for the first time at Mona Vale Golf Club in late September and it was great have a full complement of 10 and have all portfolios filled. Responsibilities of the directors are as follows:

Field days: Craig Molloy and Scott Riley.

Education and environment: Nathan Elder and Shaun Probert.

Membership: Craig Wright. Newsletter: Justin Sheehan

Merchandise and apparel: Mark O'Sullivan.

Mark Warwick is association secretary while Darren Jones will be assisting me as well as working on financial issues. Alison Jones, who is our newly appointed administration officer, is responsible for finance as well as assisting other director's when association work becomes excessive.

#### 2006 ALISTRALIAN OPEN

To John Odell and all his staff at Royal Sydney Golf Club, congratulations on the magnificent state of the course. It was great to see the Australian Open return to the tournament it should be with great players, a great golf course and an extremely well organised event.

To the Royal Sydney Golf Club, congratulations on your presentation of your golf club to the world. I'm sure all the players from here and overseas have great memories of the week they spent at Rose Bay. I would also like to congratulate Ross Watson on his re-design of Royal Sydney. It is a true test for a golf course architect to see the course stand up to good players with the latest technology, and also with testing weather conditions to ensure the course didn't become farcical. The design proved to be interesting and testing for players and spectators alike. Well done Ross!

A big thanks also to all the volunteers who helped out with the AGCSA's course quality officials programme. I hope you all enjoyed it.

## **EDUCATION**

The NSWGCSA annual education day was held at Ryde Parramatta Golf Club in late October. The event was well attended with over 70 members including at least a dozen general managers.

The theme for the day was 'Working as one for a successful outcome' and was aimed at building knowledge and skills necessary for running a successful golf club and at improving relationships between superintendents and general managers. Speakers for the day

included Gary Dempsey from NSW Golf Club who gave us an in-depth look at the systems used at NSW for planning, budgeting and informing members and guests of all standards kept and proposed course improvements over a five-year period. It was intriguing to see how this premier Group 1 club ensures its financial security and also its status within world golf now and into the future.

Bill Francis, who is general manager of Pymble Golf Club and also the newly appointed president of the General Managers Association, was our second speaker. Bill has a lot of experience with big project planning, budgeting and management after his 17 years at The Royal Sydney Golf Club. Bill shared some interesting experiences and insight into the methodology he applied in keeping his team in line, interested and all working together.

Rod Frazer, from VIP Corp Enterprises, was our third speaker for the day. Rod has a degree in Master Practitioner Neuro Linguists and Ericksonian Hypnosis. Rod was able to align some of our thoughts and cast a very positive aura over delegates as he exposed insight into some of his experiences and successful outcomes with sporting identities and business people alike.

Special thanks from the Board of the NSWGCSA to Shaun Probert and the management of Ryde Parramatta Golf Club for a great job and to Shaun's dedicated staff who presented the course in pristine condition. Thanks also to Nuturf and to Country Club International for supporting the day.

#### HARBOUR CRUISE

The NSWGCSA's annual harbour cruise took place on 6 December. After comments last year that the boat was too small and the variety of alcohol a little on the lean side, it was decided to upgrade to a bigger vessel as well as have a greater variety of food and beverages. I would like to thank our sponsors Dad & Dave, Golf Shapes and Environmental Business Solutions. Your continued support is appreciated.

Finally, I hope everybody has a great Christmas and prosperous New Year. Let's hope it rains the whole of the Christmas holidays!

ANDY HUGILL, PRESIDENT, NSWGCSA.

## **TGAA VIC**



hristmas and New Year is always a hectic time for all in the turf industry and on behalf of the TGAA VIC I would like to wish everybody a happy and healthy festive season.

The year has seen many challenges confront the industry, the biggest being ongoing water concerns. We all know that it is highly unlikely we will ever return to the water use levels we once enjoyed. Careful water usage and strategies have become a major factor in the role of all turf managers.

It is encouraging that dialogue has continued between the combined turf industry body VICSWU, Water Minister John Thwaites, state and local government representatives and water authorities. In city, regional and rural areas the importance of maintaining suitable sports surfaces for the community, in particularly for our young people, during these dry climatic times is of grave importance. The continued efforts, water savings made and surfaces produced prove Victoria certainly has a healthy, forward-thinking turf industry.

Throughout 2006 the TGAA VIC has continued to keep members up to date on what has been happening in the industry. We aim to continue to provide relevant up-to-date and practical solutions in turf management through ongoing seminars, newsletters and our website. Members should by now have received their 2007 TGAA calendar. A final run of membership cards will be ordered in early January so please finalise your membership, or notify the office if you are still awaiting either a calendar or card.

The TGAA VIC six-a-side cricket day will again be held at Wesley College – Glen Waverley on Sunday, 18 February. So start putting your teams together now. More information will be available in the New Year.

We hope you keep your cool during these hot summer days and that summer rains brighten the festive season.

MATT HANRAHAN, COMMITTEE, TGAA VIC.



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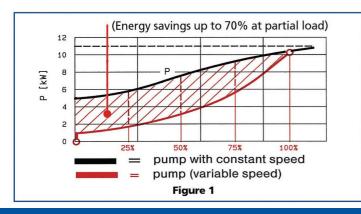
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Brett Burgess Course Manager Taupo Golf Club

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