



By July drought resistant turf weeds stretched as far as the eye could see

grow when the grass cannot. The turf root zone may be brimming with nutrients but if the fine fibrous root system of turf grasses cannot enough extract water from the soil to compensate for transpiration then it [the soil] is for all intents and purposes functionally infertile.

### Leguminous turf weeds

A select group of leguminous plants including white clover, bird's foot trefoil (*Lotus corniculatus*), yellow suckling clover (*Trifolium dubium*) and black medick (*Medicago lupulina*) are dedicated weeds of UK turf with two essential and related things in common. All have the capacity to access their own supplies of nitrate courtesy nitrogen fixing bacteria (*Rhizobium* species) that conduct a symbiotic relationship with the leguminous plant from their position in the root nodules. In addition all these leguminous weeds are inherently drought tolerant.

Nitrogen is an essential major nutrient for growth which most plants including grasses can only source it as water soluble nitrate ions ( $\text{NO}_3^-$ ). Plants which are unable to source water from soil during drought conditions automatically lose access to nitrate fertilizer. No such problem for leguminous plants which take advantage of

## Individual leguminous turf weeds may possess other characters that confer drought resistance

any shortage of soil water and soil nitrogen by 'making their own'.

Individual leguminous turf weeds may possess other characters that confer drought resistance. For instance, bird's foot trefoil has a deep tap root while the relatively small area of the individual leaves on all of these species helps to minimise water loss by transpiration.

### Nowhere to hide

Fast growing turf's ability to hide more diminutive turf weeds like parsley-piert (*Aphanes arvensis*), creeping cinquefoil, self-heal, slender-speedwell (*Veronica filiformis*) and dove's foot cranesbill (*Geranium molle*) is a double-edged sword. It may be superficially OK when turf grasses are actively growing but with the onset of drought these small-leaved plants are no longer easy to hide and become prominent weeds in their own right, presented with a free hand to grow and move through the static drought-stricken turf.

None of these turf weeds is generally thought of [like yarrow and white clover] as drought tolerant

but parsley piert and dove's foot cranesbill in particular with their fondness for sandy free-draining soils would be expected to have a high degree of drought tolerance. Furthermore the inherent soil structure of golf greens and tees with their distinctly sandy free-draining bases are clearly potential prime sites for these weeds whether or not water stress in summer is a problem. The clear advantage given to such weeds during June and July was evident by September with parsley-piert spreading on golf tees as its common name implies like parsley fit for a salad.

That apart even those weeds like self-heal which most frequently occurs as a problem weed of persistently damp and poorly drained turf, and creeping cinquefoil typically found in wet neglected acid turf, were doing well enough at the height of heat and drought in July 2010. They were flowering and setting seed to take full advantage of the late summer and autumn rains that would follow just a few weeks later. Even weeds like slender speedwell known to prefer damp swards did not appear to have suf-





Another example of drought resistant turf weeds in July

ferred. By September this dedicated turf weed was growing profusely alongside opportunistic turf weeds such as bristly ox-tongue (*Picris echinoides*).

### Tap roots all round

Small leaved weeds may go unnoticed in the grass but there's nowhere to hide for turf weeds from the family Asteraceae (Compositae) irrespective of whether the sward is actively-growing or static. A number of factors contrive to make dandelion (*Taraxacum officinale*), cat's ear (*Hypochaeris radicata*) and to a lesser extent smooth hawk's-beard (*Crepis capillaris*) and mouse-ear hawkweed (*Hieracium pilosella*) formidable turf weeds.

The common factor which enables this group of closely related species to withstand severe drought is a tap root. Packed with polysaccharide tap roots have traditionally allowed these perennial plants to survive the sub-zero air temperatures and frozen soils of winter and get a head start over turf grass in the spring. However, tap roots prove equally useful in enabling them to survive a completely different set of adverse environmental conditions in the form of high air temperatures and soil moisture deficits in summer that will push other plants past

permanent wilting point.

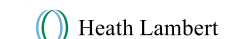
Dandelion was already having a good year (Greenkeeper International, July 2010) and the summer drought just added to this relative advantage over turf grass, so that by September dandelions were much more prominent and frequent in fine turf than usually seen at this time of year. And especially on golf tees where dandelion seeds germinate and establish with ease in the unavoidably damaged turf. Other related species such as ragwort (*Senecio jacobaea*) and bristly ox-tongue were clearly taking advantage especially when the tees were alongside potentially large seed banks like railway embankments.

Neither ragwort nor bristly ox-tongue is regarded as weed of professional turf and as such will rarely appear on the target weed hit list for selective herbicides designed and recommended for use on managed turf. That said it should come as no surprise that both are able, when the opportunity arises, to exploit golf tees by germinating and establishing on bare soil exposed by divots and which offers the ideal sandy free draining base that both prefer. Indeed ragwort is listed as a key species in the plant succession of sand dunes. Once established they are difficult to remove. Like dandelions, ragwort and bristly ox-

tongue are quickly conditioned by close cutting into a prostrate habit that allows most of the leaf rosette to escape the mower's blades. With their deep tap roots able to generate new shoots at will even a low cut is to no avail.

### Fears for the future

The drought tolerance of dandelion and other members of the Asteraceae (Compositae) like cat's ear are evident from their success as turf weeds in South Australia where there are four consecutive excessively hot summer months with virtually no rain. Should global warming arrive and develop at the speed and on the scale predicted five years ago for the UK then turf weeds will present a huge problem for golf courses. Not in mid to late summer, when the grass is dried out and herbicide application is not an option anyway, but certainly during the rest of the year starting in autumn, when the rain returns and still-growing weeds have a head start of over turf grasses. And at the very time when on-going EU pesticide legislation seems hell bent on removing chemical herbicides from the marketplace, leaving greenkeepers with few if any proactive practical options for turf weed control.



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# Every one a winner

Winners, Portmore Golf Park

Richard Stuttard, of the STRI, reveals the winners of this year's Golf Environment Awards and explains why they were successful



**STRI's Golf Environment Awards have once again brought to the forefront of the golf industry ten of the most environmentally proactive golf clubs in the UK.**

In addition to this the awards attracted a significant number of first time entrants to the programme indicating that awareness of environmental and ecological best practice is continuing to spread throughout the industry.

In 2010 our overall winner is Portmore Golf Park situated close to Barnstaple in North Devon. This 27 hole facility constructed on former agricultural land in the 1990's has had ecological and environmental considerations built into its ethos since inception. The Club has achieved the perfect balance between presenting a top quality golfing experience with a low environmental and financial cost.

The foresight and enthusiasm of owner, Colin Webber, has resulted in the creation of a successful and sustainable business model for the Club particularly with regard to ecological and environmental

considerations. On the nature conservation side the course is a rich mix of diverse mature woodland, extensive well managed deep rough grassland and visually and ecologically superb water features. The Club has a true appreciation of the need to develop ecological corridors through the golf course and

son, Josh, are strong advocates of the use of Compost Tea and have developed considerable skills in its development and application.

Waste reduction and management has also been a priority at Portmore, particularly over the last five years. In that time the Club has achieved a two thirds reduction

**The Club (Portmore Golf Park) has achieved the perfect balance between presenting a top quality golfing experience with a low environmental and financial cost**

have as a result created appealing vistas from all parts of the golf course. On the playing surfaces an eight year programme of intensive management has seen previously annual meadow grass dominated greens become almost entirely fescue. No pesticides or fungicides have been used on the course for over 14 years and only organic fertilisers are applied. Colin and his

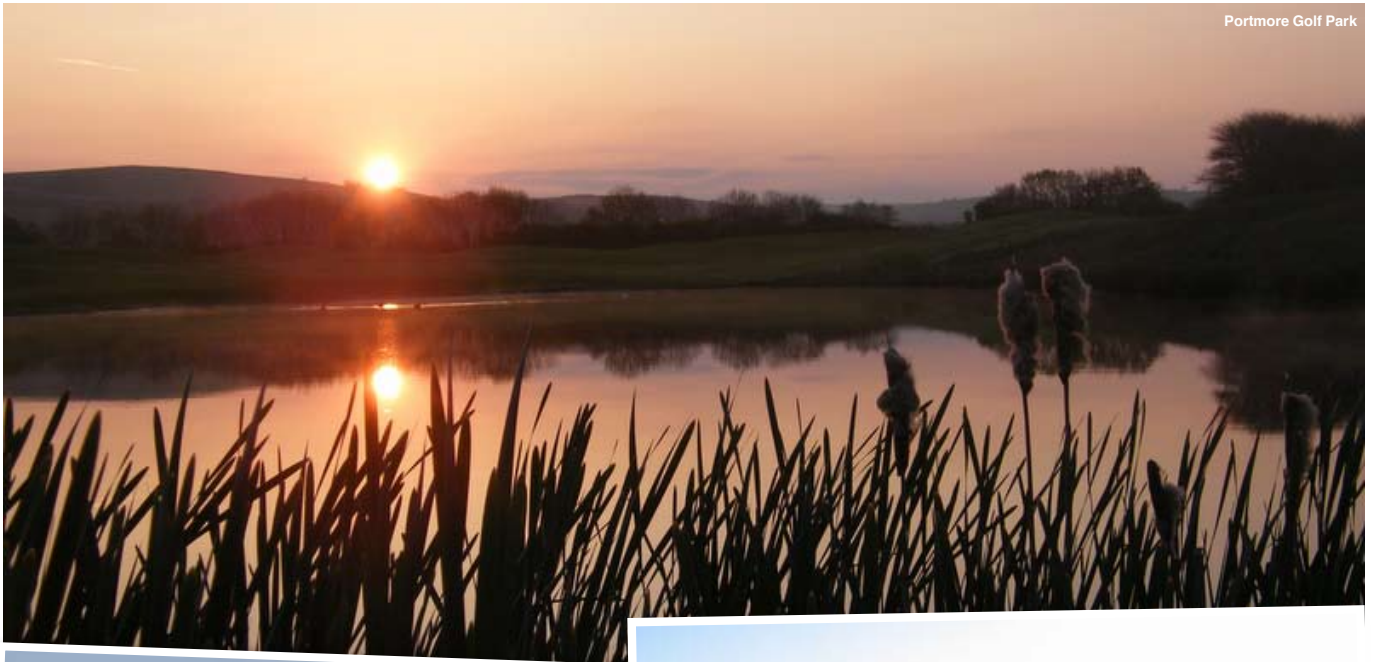
in landfill waste – a considerable environmental achievement.

Overall, and with all environmental bases covered, Portmore Golf Park find themselves worthy winners of the 2010 overall prize.

Our Conservation Greenkeeper of the Year award has been given to James Hutchinson, of Fairhaven Golf Club. James, who was featured recently in Greenkeeper



Portmore Golf Park



Silloth on Solway Golf Club



Fairhaven Golf Club

International was given the award for his tireless dedication toward maintaining and enhancing the biodiversity interest at Fairhaven. With the full backing of Club representatives James has very much taken the lead in establishing countless ecological projects across the site. Fairhaven is host to a rare mix of woodland, grassland, heathland and links characteristics and has significant opportunity, if managed correctly, to be a true wildlife haven. Happily James picked up on this around five years ago and has been making enhancements to the course ever since. Some of James' most visually striking projects have included the creation of extensive wild flower areas, heather establishment and promotion and pond clearance and maintenance. James' achievements are a shining example of how the enthusiasm and dedication of an individual can achieve significant results.

The remaining eight prize winners in this year's awards are all worthy recipients, each with their own individual distinguishing characteristics. Our Regional Prize winners;

Loch Lomond Golf Club, Silloth on Solway Golf Club, Aberdovey Golf Club and Aldeburgh Golf Club each offer very different but very special golfing experiences. Loch Lomond Golf Club sits within a truly breathtaking setting which has been further enhanced by the work of the golf course maintenance team. As managers of such an important site there is a clear sense of responsibility from the whole team and this is reflected in the quality of ecological work undertaken. The Club have also paid significant attention to environmental matters with large scale water management projects undertaken and waste management being a particular specialism. The Club are on course to achieve their highly commendable goal of sending zero waste to landfill by 2012 – a not inconsiderable achievement.

Our Northern Regional winner, Silloth on Solway Golf Club, received their award for the large scale ecological management work that has been undertaken over the last 10 years and continued in earnest in 2010. The transforma-

tion at the Club in the last 10 years has been truly staggering with this former gorse choked coastal course being gradually reverted to its original more open character. Following large scale gorse removal the Club have continued to enhance the bio-diversity of the course by exposing wetlands, developing heather swards and establishing and maintaining good quality open and fine leaved rough grasslands. Additionally this year the Club have significantly improved their impact on local water resources installing a bore hole to obtain irrigation water and investing in a new highly efficient and accurate irrigation system, thereby ensuring minimal inputs to the turf.

Aberdovey Golf Club has retained their 2009 Welsh Regional title following the continuation of its extensive ecological and environmental management programme. In 2010 the Club have focused on sand dune restoration and stabilisation, scrub clearance and grassland management and have also paid particular attention to further naturalising the golf course with deep coastal grass-

Golf Environment Awards  
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Silloth on Solway Golf Club



Portmore Golf Park

lands being developed around tee complexes and bunkers to create a more natural rugged appearance.

In addition to Silloth on Solway Golf Club's battle with gorse invasion our Southern Regional winners, Aldeburgh Golf Club has also made significant management advances in recent years, again reverting the character of the course back to its more original open nature. The Club have developed fine leaved

rough grasslands and a strong heather component in addition to maintaining extensive deciduous woodland. Turfgrass management at Aldeburgh is of the highest order with fertiliser, pesticide and water inputs kept to an absolute minimum and this has been reflected in the firm, fast and true playing surfaces that are achieved here. Additionally in recognition of the increasingly strict water legislation relating to golf, Aldeburgh has commissioned and will shortly be installing a reed bed to cleanse waste water from its machinery wash down area.

The Golf Environment Awards also offers special initiative prizes in the following areas – Nature Conservation, Waste Management, Water Management and Turfgrass Management. Each of the four winners here have undertaken

innovative and effective projects in their respective category areas. This year's Nature Conservation Award has been given to Delamere Forest Golf Club. The win for Delamere Forest is made all the more special by the fact that this is the Club's first application to the Awards Programme. A hidden gem, supporting a wide range of habitats including mature deciduous woodland, gorse, heather, fine leaved open grassland and large, well maintained water bodies, there is a great appreciation at the Club of the benefits of enhancing the nature conservation value of the site, not only for wildlife but also in terms of the visual and strategic aspects that the natural environment can offer. The result is a course that has significant aesthetic and playability appeal and is a striking natural environment within which to play golf.

Our Waste Management Award is given to Clubs which pay specific attention to waste reduction on the golf course and take seriously the need to manage this in a sustainable and responsible fashion. In 2010 Machrihanish Dunes Golf Club are the well deserved recipients. Open for just over a year the course was constructed on ecologically rich duneland near Campbeltown on the Mull of Kintyre.

Given the very special nature of the environment within which the course sits the Club has adopted a rigorous waste management policy which dictates that all waste streams are dealt with in the most environmentally appropriate manner. This includes all maintenance facility related waste; oils, batteries, fertiliser bags, pesticide containers, contaminated wash down water and also gives cognisance to Clubhouse waste also.

## The Golf Environment Awards continue to promote the wide range of environmentally positive initiatives that are being undertaken throughout the golf industry



Delamere Forest



Purchasing policies and sustainable sourcing are also key elements addressed by the club and as a result Machrihanish Dunes are very much leading the way in terms of waste management within the golf industry.

Our Water Management Award has been given to Maesteg Golf Club in South Wales. For many years several areas of the course have been prone to flooding/water logging and the Club has put a considerable amount of effort in recent times to combating these issues.

In 2010 one of the few remaining issues was a green prone to regular water logging due to surface water run off from an adjacent hillside. To deal with this the Club took on an ambitious project to completely redesign the topography of the green and green surround.

This project, designed and undertaken in-house was to raise the previously low set green and create a swale at the low point of the green surround to divert water around the playing area and direct it off site. The project was a huge success with the water logging issue completely solved and the re-designed hole looking and playing superbly.

And finally we move onto our Turfgrass Management Award. This award is presented to Clubs which have adopted a sustainable approach to Turfgrass management.



This year the award has gone to Royal St David's Golf Club in Harlech, North Wales. Course Manager, Roger Kerry, and his team have put in considerable effort toward changing the composition of the formerly input demanding annual meadow grass dominated playing surfaces to the bent/fescue dominated swards we see today. In recent times the annual meadow grass content of greens has changed from 80% to approximately 5% as a result of input control and cultural management techniques. The result is a consist-

tent set of firm, fast and true playing surfaces which are environmentally and financially sustainable and are crucially available for play for the vast majority of the year.

The Golf Environment Awards continue to promote the wide range of environmentally positive initiatives that are being undertaken throughout the golf industry and it is hoped that those clubs who are yet to address environmental sensitivities at their club will gain inspiration from the fine example set by this year's winners.



This page: more shots showing the splendour of Portmore

For more info. on this years winners and how to apply for the 2011 Golf Environment Awards Programme please visit [www.golfenvironmentawards.com](http://www.golfenvironmentawards.com) or alternatively call Richard Stuttard on 01274 518903







# Behind the scenes at an exhibition

**Jim Cook finds out exactly what it takes to pull together the ultimate turf management exhibition in Europe**



**For anyone who, like me, has attended Harrogate Week religiously in previous years, soaked up knowledge during seminars and workshops, learnt from exhibitions, built contacts in the industry and met some great friends, the thought of how it all happens and how it is put together may have slipped under the radar.**

From cups of coffee and risk assessments, to delegate packs and schedules, every detail of the week must be planned meticulously to ensure the visitor has the most beneficial and enjoyable time possible.

To gain an insight into how this is all done and what goes on behind the scenes in hosting such an immense event I visited the BIGGA office and spoke with the team responsible.

Pauline Thompson, the Exhibition Officer, is first on site during the week and the last to leave. She has the task of organising the venue so that when exhibitors and delegates arrive, everything is where it should be and running as smoothly as possible.



Throughout the year, Pauline negotiates with various contractors and companies, manages content for the website, writes copy and sifts through photographs from the previous show. She also processes applications from the sales team, researches best prices on such things as lanyards, carrier bags and pens, looks after the health and safety side of things and has the sizeable task of getting information out to exhibitors about the build.

“It’s an extremely tight build time-wise and because of the location it’s like a big jigsaw puzzle. Contractors help me but I guide and drive it. We all work fantastically well as a team.”

The day after the show finishes, Pauline begins planning for the next one by holding debriefs with contractors, the Harrogate International Centre and various accommodation venues, to review how things went and build a template for the following year.

“I work all year round for this one event.

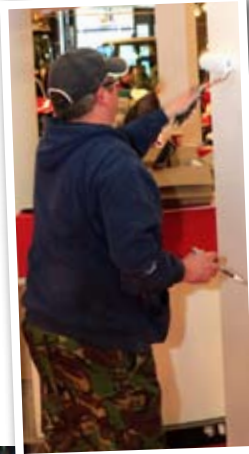
“When I know the build is complete on the Monday night I can take a deep breath, then the show opens and it’s lovely to hear people say thanks it’s been great and I’ve enjoyed the show.”

TOP: The Exhibition in full flow  
INSET ABOVE: Work in progress

BELOW: Pauline discussing the Hall Plans







**“All the little things where people say, ‘We’ll go for a coffee break now’ we’ve had to print out hundreds of coffee vouchers and made sure we have the right number in for each class”**  
Sami Collins



This year the Continue to Learn programme at Harrogate will be the most comprehensive it has ever been. The pair organising it, Sami Collins and Rachael Duffy (shown above) start planning 14-16 months in advance for sessions running over the full five days. They organise featured sessions, which this year include Jim McKenzie, of Celtic Manor, and Chris Kennedy, of Wentworth, and allocate the rest of the seminars over the week. After sorting out all the accommodation and contractual requirements for the speakers, they write the brochure for the beginning of August and have the programme completed by June.

Sami explained the administration behind parts of the week.

“We make up all the delegate packs, all the speaker packs and do all the vouchers for lunches, coffee

and catering. All the little things where people say, ‘We’ll go for a coffee break now’ we’ve had to print out hundreds of coffee vouchers and made sure we have the right number in for each class. All the very small things that people may not think twice about have actually taken us maybe two days to do.”

Sami and Rachael arrive on site at 8am Sunday morning, start preparing rooms for speakers and by 9:30am start registering delegates, giving out badges and handing out delegate packs.

“Once all the delegates are in, calm starts to descend for a little while at least while we start thinking about what needs doing next and we start writing a reminder list for the next year. What could have been better; let’s keep that in mind; what didn’t we bring?”

Rachael is also co-ordinating

the Personal Development Zone adjacent to the BIGGA stand.

After the show there is no rest as it is back to work the next day.

“Friday morning we’re back in the office, unpacking boxes and sorting out everything that’s happened, what we need to address, getting certificates out to people and then the show starts all over again.”

Harrogate show provides a large part of the income for BIGGA and the task of selling exhibition space falls at the feet of the sales team,

BELOW and ABOVE RIGHT: a seminar room in action and in preparation







Sue McDonough poses next to the Hall Plans, and two pics showing the Exhibition in full flow

Sue McDonough and Jill Rodham. They organise who goes where in the exhibition hall based on individual requirements of space and cost.

Sue said they book clients in as early as possible in the year and then help them with a number of things including sponsorship and how to get the best out of the show.

“The people who are coming to exhibit will talk about the show as a project so they’ll know they’ll come in January and show their product, but also know that it’s an opportunity to see all their clients, meet and sell. It is their one shot in the year to get all these visitors in one place to show off their product.”

This year the team has brought in a new Enviro-Zone.

“What I also do is go around other shows looking for ideas to make Harrogate better and this was one that Jill and I came up with. It is something that we can grow and expand on and hopefully end up with a half, or a full hall of environmental stands.”

“I think next year we will because we will have an idea of what worked and what didn’t from this year and we’ll be able to move it forward,” said Jill.

Sue explained her and Jill’s role at the show.

“When we get to Harrogate it’s a case of us walking around and making sure that everybody is happy and also meeting new

customers. It’s to do with building relationships and we use these three days to get to know people. It’s a very social and exciting job.”

Anything media-related to the Harrogate Week is handled by Scott MacCallum.

His work also begins immediately after the previous show, when he starts putting the press centre schedule together and companies can book slots for press conferences in the media centre under Hall A.

Towards the end of the year he starts putting out press releases to all the media outlets, using e-zines to tell what will be new at the show.

During the week itself Scott juggles a number of roles as Press Officer, BIGGA official and the Editor of Greenkeeper International. He explained how he utilises his time there.

“I’m sometimes hosting press conferences, I’m sometimes doing my PR role, meeting and greeting people; attending press conferences in a journalistic capacity; taking notes, chatting to people and generally just making sure that the whole thing is running smoothly.”

For a number of members it is the only chance in the year they get to meet up with Scott.

“They wouldn’t get to see me during the other eleven-and-three quarter months of the year, but they’ll pop in to say hello and it’s nice to see a lot of the friendly faces

**“We like to think that it is the biggest event of its type in Europe, so it’s important that we get it right and that we plan it meticulously”**

**John Pemberton**



John Pemberton at BIGGA HOUSE

who I have got to know over the last fifteen-and-a-half years.”

As soon as the show is over Scott focuses on the important February magazine.

“It’s a great week and I have thoroughly enjoyed every Harrogate I’ve ever done. The first time I went there was 1996 and I couldn’t believe the scale of it then and it’s grown so much. It’s an event of which I’m extremely proud to be a part. I know though, that these are difficult times and I really do feel sorry for those companies who have regularly attended and see Harrogate as a great launch to the year, but whose budgets just can’t cope with attending this year. We would love to see them back when things are looking up and hopefully that will happen before too long.”

Even though BIGGA organise the event, they are also exhibiting at the show and their stand remains an important focal point for members. Tracey Maddison, Head of Membership, Steve Wragg, Company Accountant, and Brad Anderson,

BELOW: Scott MacCallum, concentrating hard at his desk

