

House in the Clouds and the magnificent old windmill add a little something not found in many other locations.

Ian, who was brought up at Wentworth where he was son of the Club chef and later a greenkeeper, has been at Thorpeness for 10 years and it seems the perfect club for a man who enjoys nature as much as he does.

"If I go out at night the number of hedgehogs you see is amazing while, when I walked my dog, Buddy, recently I ended up rescuing toads which sit in the middle of the road. I picked up about two dozen and carried them to the pond or the grass at the side so they can get on with mating. They are the same colour as the road and would be run over. You see the local children doing the same all the time.

"Then there's the nightjars and the woodlarks, for which we have SSSI status. It really has a vibrant wildlife community."

When he first entered the competition Ian genuinely believed that they had a good chance of winning.

"I didn't really know the criteria at that point and it was only through going through the process of the competition and speaking with STRI judges, Bob (Taylor) and Lee (Penrose), that you learn what is looked for. Then you try to integrate their thinking into the work that you are doing. At that point for us it became a journey.



The unique House in the Clouds overlooks the course



"As standards increased, the bar was being raised and there were occasions when we knew we were getting close but just as we were about to jump we discovered the bar had gone up by about three feet and we missed it totally!"

An example of this came a couple of years ago when composting and controlling waste water became more of an issue. I went on a seminar to learn about it then persuaded our MD that we needed to install a waste water system but it was still in the process of being installed when judging time came and I think that counted against us."

That highlights another of the issues Ian had to deal with. Having a small team - there are five in total - and doing most jobs in house meant completing jobs would take more time than might be the case at other clubs with larger staffs or who contracted more jobs out.

"We installed the concrete wash down area for the Waste2Water system ourselves and also put in the concrete composting area, completed with a bunding.

"We do have a budget, which isn't huge, to work within but we are particularly lucky to have Ray Hardinge, an ecologist who is also a member of the club, who gives us a lot of his time and expertise."

Ray built a set of bird and bat boxes for the course and together with the team spent a great deal of time up ladders studying compasses to make sure they were facing in the right direction.





"In the first year we had a 60% success rate with these and credit for that must go to Ray and his knowledge. He has always been keen to know who had won the competition and always made a point of visiting the winning club to see first hand the work that they had done"

Ray is also on hand to assist Ian and his team when they do any major work on the course.

"Every job we do has an environmental impact. If we are refacing bunkers, Ray will speak to me about which of them we are intending to do. Then we'll go out and take an environmental record of what flora we have within a metre and a half of the bunker. Then we'll tackle the job using locally grown fine turf and once finished compare what we had to what we've got. We leave gaps to allow the original seed beds to come through and recent work has shown us that we can get 55% of the original plants and wild flowers back within two to three years and we reckon it will take about nine years to get it back fully."

Ian is well aware of his responsibility to provide year round golf to members and hotel guests and the course copes with well over 30,000 rounds per year.

"We do practice sustainable golf at Thorpeness but not what the R&A are taking about, as we do take preventative measures to control disease because guests wouldn't want to pay on diseased covered greens.

"I don't have the luxury of closing the course for a couple of weeks to give it a rest. It just doesn't work like that."

So what turned the perennial bridesmaid into the 2005 bride?

"I'd say it was the whole club's involvement. I'm lucky that around 30% of the members are interested in the fact that we won the award and are champing at the bit waiting to see the Scott's Weather Station (part of the prize) in action," said Ian, who also has an ongoing programme of heather regeneration.

There is very much a collective feel to the management style of the Hotel, club and the course.

Thorpeness is lucky to have a small but dedicated and committed greenkeeping team comprising Deputy, Mark Henderson, Chris Guy, Paul Barber and Toby Alexander, and Ian is quick to involve all of them in decision making and often finds some of the best ideas come from the least experienced team member. More widespread consultation takes place



The club is heavily involved with heather regeneration



The team do all construction work in-house

throughout the club with everything being discussed at the Golf Committee so the members, the golf course, hotel guests and environmental issues are all considered from everyone else's perspective.

Ian's advice to other Course Managers thinking about entering the competition is short and to the point.

"Give it a go. That's what I did. I got so fed up with people turning round and telling me that golf courses were detrimental to the environment I wanted to show them that they are anything but and this competition showcases the great work that goes on up and down the country.

"You may not get a certificate in the first years, you may not get a visit, but you will improve your golf course through the information which is available from the judges," he advised.

Ironically, for a golf club with such green credentials it is a close neighbour to an establishment whose very name stirs the passions of environmentalists. Nuclear power stations Sizewell A and Sizewell B can be seen from the 10th tee and although A is currently being decommissioned there are still groups protesting that they should never have been built in the first place.

"We don't glow green at night, nor do we have two headed swans but the local waters are good for fishing as the water around Sizewell is a little bit warmer than further out," said Ian.

Although banned from entering the competition for three years, Thorpeness will continue with their environmental work and Ian is hoping to sign up to the EGU/STRI certificated programme.

"I'd also like to experiment with using sheep to manage areas the way Hollinwell has done, while I do believe you can do things with iron age pigs or wild boar which I'd like to look into."

As I said at the beginning you won't ever find Ian Willett in a kilt but he does have some similarities to Robert the Bruce, who as well as studying spiders, no doubt knew a bit about wild boar as well.

**There is still a little time for anyone interested in entering the 2006 BIGGA Golf Environment Competition, sponsored by Scotts, Syngenta, Ransomes Jacobsen and Course Care. Details and entry form can be downloaded from the BIGGA Website [www.bigga.org.uk](http://www.bigga.org.uk). But be quick entries must be submitted by June 23.**

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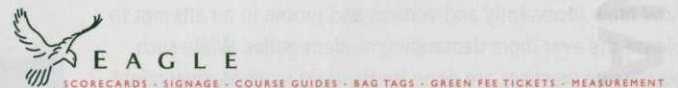
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# THE DISTURBANCE THEORY

These articles aim to give you a better appreciation of how to favour the finer grasses. Disturbance Theory comes from an ecological perspective and simply states that the nature of the environment, controls the composition of the sward. These three articles explain how the finer grasses can be successfully established and maintained within the modern golf green by simply managing the environment correctly. The role of the greenkeeper, is to understand and control the environmental pressures, to set the correct conditions for the finer grasses to flourish. If you understand The Disturbance Theory the finer grasses stand a chance. Our golfing heritage rests on fine turf.

## Do Not Disturb!

Richard Windows, STRI Turfgrass Agronomist.

Putting surfaces, dominated by the bents and fescues, provide consistent year round surfaces. Unfortunately, many of our greens continue to be dominated by annual meadow grass. A recent survey conducted by all STRI agronomists in the UK and Ireland for the R&A, proves this is the case. The results showed the average species composition in our golf greens in 2005, to be 56% annual meadow grass, 32% bent, 7% fescue and 5% perennial ryegrass/Yorkshire fog. Out of 598 courses assessed, 75% had greens supporting more than 50% annual meadow-grass. The annual meadow-grass dominance, makes our greens vulnerable and inferior during the winter. This information shows how many courses may be failing to reach their potential.

History has always blamed excessive fertiliser and water applications, to be the main cause of annual meadow-grass dominance in our greens. I used to as well, until I considered the ecology of the grasses involved the article "Changing the Nature of your Greens" explains this in more detail ([www.stri.co.uk](http://www.stri.co.uk)). In summary, annual meadow-grass enjoys disturbance, while the finer grasses flourish in a more settled environment. Annual meadow-grass, is so successful in golf greens because the environment is so disturbed or being constantly damaged. Disturbance pressure comes from surface preparations and of course play. In this article, we examine the effect of surface preparations on sward composition. The aim is to help you think about the preparation of your greens a little differently.

The true cause of annual meadow-grass ingress, comes from the creation of gaps in the turf. Constant physical damage (or disturbance) of the grass plant, creates these gaps. Modern greenkeeping practices and their mechanisation, have radically increased the disturbance pressure imposed on fine turf. We now mow incessantly and verticut and groom in an attempt to please the ever more demanding modern golfer. While such aggressive practices are done for the right reasons, they might, in the end, be causing untold harm. The symptoms can be seen, when the turf thins and the soil surface is exposed. Annual meadow-grass is adapted to exploit these conditions. It may therefore be true to say, the misuse of the triplex mower and modern turf refinement tools, are one of the main reasons for annual meadow-grass dominance in our golf greens.

Before we had these ultra efficient tools, the amount we refined our greens was restricted by time and the physical constraints of the human body. For instance, it took a long time to mow greens with a pedestrian mower and even longer when using a push mower or scythe! Not to mention the physically

demanding nature of the work. This meant it was largely impossible to over-manage and over-disturb putting greens. Consequently, the golf green environment was settled, which allowed the fine grasses to dominate. Fertiliser and water were kept to a minimum, as over-application simply made the grass grow faster! Greenkeepers knew the surface would be inferior, if grass growth was rapid. Growth was the last thing they wanted. A settled, undisturbed and unproductive environment, suited the finer grasses. It also produced the best year round putting surfaces. Old Tom Morris understood this.



"Fast growth was the last thing greenkeepers of yesteryear wanted when they were using scythes and birch besoms. This meant a settled and unproductive environment was created in which the finer grasses flourished." Photo courtesy of St. Andrews Links Trust.



Old Tom Morris taught us the real art of greenkeeping. Those that still follow these traditional principles produce the best and most consistent year-round putting surfaces. Photo courtesy of St. Andrews Links Trust.

The tranquillity of this settled and unproductive environment, was forever interrupted with the introduction of the triplex mower around 1968. Suddenly, greens could be mown in a fraction of time, meaning they were done so more regularly. They were even mown when it was not necessary! Further technological advances allowed the machines to follow contours, which facilitated ever closer mowing. In essence, triplex mowing increased disturbance pressure on the turf.

Soon after the triplex mower, came the introduction of more efficient and effective turf refinement tools. These mechanical tools, with their motor driven rotating steel blades (now with tungsten tips), were much more aggressive than the bristles of a brush - you can almost see the fine fescue and bent turf quivering at the prospect! Their ease and

efficiency of use allowed the frequency of operation to increase. The result was increased disturbance pressure on the turf.

The use of the triplex mower and more efficient turf refinement tools, gave golfers the faster surfaces they demanded. However, little regard was given to their damaging effect on our fine turf. To put it simply, the fine fescue and bent could not cope with the damage. Consequently, the sward began to thin and gaps were created. Annual meadow-grass exploited these gaps - the invasion had begun. To help the thin and damaged turf recover, more fertiliser and water was applied. The annual meadow-grass thrived in this more disturbed and productive environment. Our fine turf putting surfaces began their decline and many would never be the same again. The era of aggressive surface preparation and high input greenkeeping had (to our shame) arrived.

Many greenkeepers ignored the trend of more aggressive surface refinements. They knew it wouldn't make their surfaces any better. To this day, courses that have upheld austere greenkeeping principles, continue to provide the best putting surfaces. The greenkeepers charged with the management of these courses, still follow what Old Tom did all those years ago. They know the slow growing fine fescue and bent grasses, only require gentle refinement to produce high quality putting surfaces. While modern machinery is used, it is used with great caution. For instance, verticutting is implemented occasionally and only when the fine grasses are growing strongly. The greens are never scalped. Fertiliser and water, are always kept to a minimum - as over application will only require more aggressive refinement. Consequently, these environments remain

settled and unproductive, which is why the fine grasses continue to flourish. Old Tom Morris taught us this approach. We now call it "traditional greenkeeping".

The results of traditional greenkeeping were once again highlighted to the international golfing fraternity, during the 2005 Open Championship played over the Old Course, St. Andrews. During the Championship, the greens were maintained at 4.5 mm. Mowing was omitted when it was not necessary - the slow growing fescue and bent, simply did not need to be mown every day. Light brushing, light top dressing, a little rolling and May verticutting was sufficient to provide over 10.5 foot on the Stimpmeter and smooth true ball roll for the world's best players. Contrast this to the normal maintenance for Major championships, when the greens are scalped two or three times a day! It is obvious which grass this will promote.

I have perhaps blamed the triplex mower and modern turf refinement tools rather unfairly, as they are, of course, great innovations and have improved the quality and efficiency of surface production. Of course the problem does not lie with the machines but the way in which we use them. All too often they are used too frequently and too aggressively. Such misuse increases disturbance pressure on the turf. When the pressure becomes too great, the turf thins and gaps are created and annual meadow-grass invades. To help the turf recover from the pressure, requires a heavier hand with the fertiliser bag and irrigation sprinklers. It is this combination of disturbance and greater productivity, that leads to annual meadow-grass dominated greens.

I have no doubt that the production of better putting surfaces can be achieved by the promotion of the finer grasses. To be successful in this aim, we must adapt our management practices to minimise disturbance and reduce productivity. In essence, the way in which we prepare our surfaces must become less aggressive. This is not too difficult to achieve so let me describe some simple strategies...

- Reduce mowing frequencies. Ask yourself - do you really need to mow all the time? Can occasional operations be missed?
- Raise the height of cut. Every greenkeeper knows what height is comfortable and stress free for their turf. You should go no lower than this height. Do not push the limit of your turf it simply will not cope.
- Miss out the final perimeter cut a couple of times a week. The perimeters of the greens are where we see the first symptoms of excessive disturbance. Never engage groomers or verticutters on this perimeter pass.



The results of traditional greenkeeping were once again highlighted during the 2005 Open Championship at St Andrews



Careful use of rollers can help provide the playing conditions golfers require without imparting excessive disturbance pressure on the turf

- Relax verticutting and scarification. Consider brushing or light grooming, to gently refine the turf. When verticutting or scarification is necessary, ensure the finer grasses are growing strongly to aid rapid recovery and follow with bent/fescue overseeding, to encourage the restoration of full grass cover. Under no circumstances scarify when annual meadow-grass is seeding.
- Increase top dressing frequencies to smooth and firm the surface, as well as diluting the thatch. Avoid harsh operations to work the material off the surface. This hurts your turf.

- Use rollers or a Turf Iron to provide a little extra pace and smoothness when required. This will ensure the greens can be maintained at a higher cutting height.
- Increase hand mowing instead of triple mowing, as it causes less disturbance and allows you to closely monitor the environment.

The true reason for annual meadow-grass ingress into our fine turf putting surfaces, was the creation of gaps in the turf. Aggressive surface preparations were one way such gaps were created. Excessive inputs of water and fertiliser were applied to restore the cover after damage. This created a productive and highly disturbed environment, in which annual meadow-grass thrived and dominated. The current era of aggressive high input greenkeeping, continues to promote this undesirable species. To restore the dominance of the finer grasses, we need to provide a more settled and less productive environment. To do this, we will have to prepare our surfaces differently but not to the detriment of the playing quality. The key to this strategy is the minimisation of disturbance. This means being less aggressive with your surface preparations, by more cautious use of the triplex mower and modern turf refinement machines. With this approach, you will soon see the finer grasses returning to your greens.

# Irrigation - The Tool of Agronomic Change

Alistair Beggs, STRI Turfgrass Agronomist.



The misuse of irrigation delivery, is one of the reasons for the decline of the finer grasses on UK golf courses, over the last 40 years. This, alongside the arrival of the triple mower and compound fertiliser in all its forms, spelt disaster for the bents and fescues. The production of softer and lusher turf, made the game easier and also happened to suit the TV companies who could send appealing ultra green images into our living rooms. The "green is god" age had dawned and we quickly descended into agronomic oblivion to drown in a sea of *Poa annua*!

So, how do we set about righting the wrongs and creating the correct environment for our preferred grasses? Well, the very tool that partly initiated the decline, could be the salvation. Irrigation is the most powerful agronomic tool, providing it is used correctly.

In the article "Changing the Nature of Your Greens" ([www.stri.co.uk](http://www.stri.co.uk)), the argument is made that unnecessary disturbance, is the main reason for the loss of finer grasses on our golf greens. We have inadvertently created an environment more suited to opportunistic grasses such as annual meadow grass (*Poa annua*) by feeding and watering and then having to use aggressive disturbance techniques to create the playing surface. The finer grasses simply cannot cope with intensive disturbance, whereas *Poa annua* likes nothing better.



The installation and subsequent misuse of automatic irrigation systems, was one of the maincauses in the decline of our fine grasses



Hand watering is an essential but often forgotten aspect of accurate irrigation delivery

Greenkeeping requires a basic knowledge of the ecological strategies, of the two or three major grasses. Success will come, if we create the right environment for the finer grasses to flourish. In summary, the fine bent and fescue, enjoy settled and unproductive environments, while the annual meadow-grass dominates when productivity and disturbance pressure is high. By understanding these simple ecological strategies, we can easily reverse the botanical decline of our putting surfaces, experienced during the last century. We need to move away from high input and aggressive greenkeeping practices. One of the key tools in this process, is the correct use of irrigation. Believe me, if we get this right, the finer grasses will return and we will restore the true enjoyment of real golf.

Let us consider two scenarios. The first is the classic annual, meadow grass dominated surface. It has been over fed and overwatered for years, with two inches of thatch residing at the base of the turf. The summer surfaces are satisfactory but the winter surfaces become soft and disease ridden. To improve turf and playing quality here, we must reduce the productivity of the environment, by minimising irrigation and fertiliser inputs. At the same time, we must create the right soil conditions, in which the fine grasses can flourish by removing the thatch. This improves the firmness of the surface and reduces the need for excessive disturbance, which creates the more settled environment. When reducing productivity, a gradual approach is required, as radical reductions in irrigation or fertiliser inputs will excessively compromise playing quality.

The second scenario is a sward dominated by both bents and fescues with some annual meadow grass contamination. Here the objective is to retain the dominance of the fine grasses. We do this by exerting controlled stress on the shallow rooted annual meadow-grass, by tight regulation of irrigation to stop it gaining advantage. To help achieve this objective, we can be even more hard-line with irrigation inputs towards the late summer, to further reduce the competitive ability of the annual meadow-grass before bent/fescue overseeding.

In both scenarios the aim is to create a more settled and less productive environment as possible. At the appropriate time, irrigation application should be relaxed to exert the necessary stress, to reduce the competitive ability of the shallower rooted annual meadow-grass. As the fine grass component of the turf increases, greater stress can be exerted as the water requirement of the turf naturally decreases.

Proper irrigation is ultimately powerful in the restoration of fine turf surfaces. We use it to favour the strengths of the deep-rooted fine

grasses and exploit the weaknesses of the shallow rooted annual meadow-grass. Managing irrigation correctly, will restore the dominance of the fine grasses and provide golf surfaces commensurate with the heritage of our game.

The level to which irrigation is applied, is of course the main challenge. This will reduce as we optimise delivery and maximise water penetration. In this day and age it is critical that applied water is fully utilised by the sward and not wasted. How much or how little do we apply? Well this is the \$64,000 question. I do not believe this can be taught in a classroom. Every site is different, every green is different and every square metre of turf is different. Trying to measure these differences empirically and come up with a "one size fits all solution" is fatuous. Trying to implement this approach will in all likelihood lead to further decline in turf standards. There is no doubt effective irrigation delivery, is an art not a science. However, there is one over riding principle - water should only be applied to keep the turf alive and the surface uniform - nothing else!

Successful irrigation management can only be achieved by the correct deduction of the greenkeeper. There is no replacement for a good man with a sound knowledge of his site. The head man should know far better than any computer or tensiometer how much water is needed to keep the turf alive, to facilitate agronomic improvement and to optimise playing quality. If we are going to restore the fine grass content of our greens the golfers must trust the judgement of the greenkeeper.

Irrigation application is not just about pressing the button on the automatic system. This approach will generally lead to agronomic deterioration. We must create a healthy dry surface rather than a lush and vibrant one. To help with this we must ensure the water we applied can penetrate into the ground. This is aided with the use of wetting agents combined with regular aeration. What is more, many clubs have great success with water injection aeration using the Hydroject. Not only does this aerate the soils but it also supplies water to the deeper rooted grasses giving them a greater competitive edge over the shallower rooted annual meadow-grass.

The irrigation systems of today are great and sophisticated tools but they are a disaster waiting to happen in the wrong hands. There have been too many wrong hands operating over the last forty years hence the decline of the fine grasses on our courses. We have a duty to correct this and re-establish the link between the grass upon which we play the game and the game itself. Our golfing heritage largely depends on correct irrigation.



The Hydroject has the combined effect of aerating the soil and delivering water to the deeper-rooted fine grasses

# Food For Thought

- How to approach fertilising for the finer grasses.

Henry Bechelet, STRI Turfgrass Agronomist.

## It's not what you think

In these times of healthy debate, chew on this thought...

...You don't have to starve your turf to favour the development of the finer grasses.

Fertilising to favour the finer grasses is more about not over-fertilising than adopting a starvation strategy. The aim of this article is to get you formulating your fertiliser programme with the needs of the finer grasses in mind. With a predominance of the bents and fescues, we achieve better quality surfaces throughout the year.

## THE DOWNWARD SPIRAL

The problem is that too much fertiliser forces you to rely on intensive verticutting and aggressive mowing to prepare firm, fast and true playing surfaces. Hollow tining and deep scarification, become necessary to get rid of the deeper thatch. It is this incessant damage that the finer grasses can't stand. Such an aggressive method of preparing putting surfaces, will inevitably require additional fertiliser applications to ensure that the turf recovers from the onslaught. It is constant disturbance coupled with high productivity that brings annual meadow grass dominance.

*Hollow tining and deep scarification become necessary to get rid of the deeper thatch. It is this incessant damage that the finer grasses can't stand.*

## THIS IS IT

We try to minimise fertiliser inputs to reduce the need for disturbance. A more settled and less intensively managed environment will give the bents and fescues a fighting chance. A less disturbed environment will also take some stress to allow you to weaken the annual meadow grass. Let me tell you about fertilising golf greens, to favour the finer grasses.

## STEP BACK AND THINK

When greenkeeping, our single objective is to create playing surfaces of the highest possible quality. If that means we want to favour a predominance of the finer grasses, we will have to set the correct environment. Ultimately, this should involve minimising the level of disturbance, which is why we reduce fertiliser inputs. We then impart controlled beneficial stress at some point during the summer to pressurise the annual meadow grass at a time of overseeding, to let the finer grasses take advantage. We impart this stress with

*We generally try to keep irrigation inputs to a minimum to prevent thatch accumulation but we only use it to actually lever stress for a short period.*

judicious irrigation rather than fertiliser because it is easier to control. We generally try to keep irrigation inputs to a minimum to prevent thatch accumulation but we only use it to actually lever stress for a short period. This will serve to weaken the annual meadow grass before the new seedlings emerge. Too much stress for too long weakens all the grass species and golf greens are too busy to be weak. See "Changing The Nature of Your Greens" on [www.stri.co.uk](http://www.stri.co.uk) for more detail.

## JUST ENOUGH

So, we want to minimise fertiliser inputs to reduce the need for incessant aggressive treatments. Minimal (some would say "optimal") means producing just enough growth for the surface to be prepared and be able to withstand play without deteriorating. The desired level of growth will vary depending on what we need to achieve at different times of the year. For example, during spring we will need to generate a certain level of growth to bring recovery from winter wear and to allow the early season preparations to take place. During the summer, once we have set-

*Essentially, you should only apply what is necessary and no more*

up our surfaces, we would want to keep growth quiet to reduce the need for any further aggressive treatments. Into autumn we must ensure that the turf is strong enough to withstand and recover from the end of season renovations prior to the onset winter dormancy. When

minimising your fertiliser inputs concentrate on finesse and timing. The old boys used to feed by hand, to allow localised areas to be missed-out or receive extra nutrient depending on the turf condition - now that is finesse! Essentially, you should only apply what is necessary and no more.

## NITROGEN

In terms of nitrogen input, for soil-based greens the Danish experience finds 5 - 7 g/m<sup>2</sup> N per annum to be sufficient. You should aim to apply as little as necessary so you don't have to verticut too often through the summer. Be careful when weaning greens off a high-N approach because there may be an adverse reaction in the form of disease attack. Just take it steady and trust your judgement, that's all.

In most cases the main source of nitrogen should be ammonium sulphate for its acidifying effect. The finer grasses can tolerate a pH below 5.5 whereas the annual meadow-grass cannot. Nutrient availability and microbial activity are factors here but not in this article. Generally, lowering the pH is a way of selecting-out annual meadow-grass. Sulphate of ammonia should represent roughly 75% of the total nitrogen.

The remaining nitrogen can be balanced up with lesser amounts of dried blood for prolonged release or urea-based liquids during the summer months. Don't use too much organic nitrogen as this will promote disease



## ...You don't have to starve your turf to favour the development of the finer grasses.

prone lush growth and don't be fooled into using nitrates for the same reason. Disease equals disturbance and plays into the hands of annual meadow-grass. Just try to minimise nitrogen inputs, to reduce the need for disturbance.

Fescues will flourish in a high pH but annual meadow grass dominance can only be avoided with the influence of an overriding environmental stress, such as raised salinity or droughting. Liming generally plays into the hands of the weeds, worms and diseases.

### PHOSPHATE

The results of research on the effect of phosphate applications on fine turf quality, have actually been inconsistent. Incessant phosphate fertiliser applications undoubtedly encourage the development of annual meadow-grass but at lower levels the relationship is not so clear-cut. Regular phosphate applications will create an ideal turf base for seed germination to the advantage of the annual meadow grass. Just don't lose your head about phosphates and remember that they are not usually necessary to favour the bents and fescues. It is my feeling that the famous rabbit urine scorch tale should have been interpreted as scorch disturbance laced with urea fertiliser to encourage annual meadow-grass invasion rather than as being the direct effect of high phosphate levels.

### POTASSIUM

Potassium is more mobile and might well need supplementing on sandier soils. Potassium certainly has benefits in terms of drought and disease tolerance but don't hang all your hopes on it. Monitor potash levels on an annual basis if there is any doubt. Just remember that favouring the finer grasses is all about managing minimal disturbance.



Scorch disturbance laced with urea encourages annual meadow-grass invasion

### KEEP IT SIMPLE

So, what does this mean in terms of your fertiliser programme? As an example you could kick off growth in spring with an application of lawn sand. This should be applied with the onset of spring growth and will generate recovery from winter wear. An application of 8:0:0 or 8:0:6 fertiliser could then be made when strong spring growth is established. This growth will allow the early season preparations to take place. Using sulphate of ammonia based feeds during the spring will discourage annual meadow grass from invading gaps within the sward by lowering the surface pH. Liquid feeds can then be applied occasionally during the summer months, to sustain healthy rather than lush growth. Seaweed soil conditioners may be tank mixed in with liquid feeds if it is felt that they have a beneficial effect. Finish off in the autumn with an application of a turf hardener type product (2-0-2 or 3-0-3 plus Fe or similar) to strengthen growth and harden the sward against disease attack. The rate of applications should be as little as necessary. Your fertiliser programme should be focused on controlling growth so you don't need to employ consistently aggressive surface preparation techniques.

### SURFACE PREPARATIONS

So, how do we prepare surfaces without incessant verticutting or employing ever-lower heights of cut? Apply heavy top dressings with spring growth to firm and true-up the surfaces. A certain amount of verticutting will be necessary at this time but don't be unduly aggressive or too frequent. Once the surfaces are prepared we should then be aiming to let them be. We maintain our firm, true and smooth surfaces without undue growth by brushing, with light in-season top dressings, rolling, maintaining sensible heights of cut and employing isolated light verticutting if necessary.

Regular top dressing has the added benefit of keeping the turf base sandy and unattractive for annual meadow-grass seed germination.

### LESS IS MORE

If you want to fertilise for the finer grasses, you should be thinking in terms of minimising the need for aggressive surface treatments. You will need strong growth to prepare your surfaces in spring but from then on try to let them go to nature. Your job is to find the minimum growth level possible for you to be able to sustain quality surfaces without incessant verticutting. Ask your fertiliser supplier to concentrate on this when making recommendations based on soil analysis results.

The finer grasses are tender souls that don't like incessant rough treatment but they can withstand stress. Remember, at no point do we withhold fertiliser to exert stress. We exert stress on the annual meadow grass for a limited period in summer, by controlled droughting in conjunction with overseeding to give new seedlings a chance to take hold. Be patient and stick to your principles and the finer grasses will come.

Get this thought into your head...

...Aggressive greenkeeping is the death of the finer grasses.

Kapeesh?

## THE DISTURBANCE THEORY ROADSHOW

Richard, Alistair and Henry are aiming to conduct The Disturbance Theory seminars this autumn. Please contact [info@stri.co.uk](mailto:info@stri.co.uk) to express an interest or find out further information.

# Technical Reflections

Dr Mike Canaway retires as the Chairman of the GTC Technical Committee.

In September 1999 Mike chaired the first Technical Committee meeting of the GTC.

The GTC Board felt it was time to establish a committee of technical experts to assist the two full-time staff in the GTC office as the Board were "not experts in turf maintenance". The Board representatives had direct access to the funding bodies and thought it far more acceptable to have recommendations brought forward for funding by a technical committee.



His term in office has seen much progress in the sector, with fellow committee members he has supported David Golding, the GTC's Education Director, to ensure greenkeepers and the golf club employers have a range of qualifications and training programmes, including an apprenticeship - which is the envy of many industries.

David, in thanking Mike for his support over the years, cannot speak too highly of how Mike has been an excellent ambassador for the GTC, at meetings, conferences and exhibitions throughout the country.

"I will miss Mike's encouragement, as at times when the work involves working within Government systems and departments it is easy to think we are "banging our heads against a brick wall" but Mike has always believed in what we set out to establish back in 1999," said David.

I will leave Mike to summarise his experiences with the GTC and also give his views on what the future should hold for the sector through the GTC.

Mike reflects as follows.

When I first joined the industry with STRI in 1974 the then Director, John Escritt, insisted that all new staff attended the week-long training courses that STRI held for greenkeepers and groundsmen. Shortly afterwards the new recruit, if competent, had to teach part of the course relevant to their particular expertise. In my case this was the part concerned with structure and identification of grasses, as I had originally graduated in Botany and had some years experience in agricultural grasslands and plant surveying, for the then Nature Conservancy.

I was thus introduced to greenkeepers training at an early stage. Even on the first training course I was struck by the greenkeepers' thirst for knowledge, compared with some of the other course participants who had been "sent" by their (often Local Authority) employers. Of course not all conformed to this accolade but it is still the case that some of those attendees on the early STRI training courses subsequently went on to become Head Greenkeepers at prestigious clubs and in some cases Chairmen of BIGGA.

Following the formation of BIGGA from the previous greenkeeping associations, Neil Thomas' first office was at STRI, before that space was outgrown. David Golding was the first Education Officer before the GTC was split off by the governing bodies to separate the employers' (i.e. clubs) training responsibilities from those of the employees (i.e. greenkeepers) when David Golding became the GTC's first Education Director.

Fast forwarding to when I was Chief Executive of the STRI, I received a letter from David requesting that STRI nominate a delegate to the new Technical Committee. In view of the long involvement by STRI in greenkeepers' training and my own personal - albeit limited - involvement in it, I replied that I would serve on the Committee. I was subsequently invited to act as Chairman. Early in the proceedings I advised members of the committee that we were "in it for the long haul" since previous experience suggested that the wheels of Government and governing bodies, turned slowly and indeed, this led to some frustration among members that we were not progressing quickly enough.

The purpose of the Technical Committee is to assist the Education Director in pursuing the GTC's role as the lead body for greenkeepers' training. To this end our first task was to develop a business plan for the GTC to clarify its goals and objectives, and then to implement, monitor and update the plan as events unfolded. In addition the committee was to develop ideas for special projects to be funded over and above the core operations.

So what has been achieved since 1999? I would first preface my remarks by saying that a lot of the work of the GTC goes on behind the scenes, fighting for the recognition of greenkeeping as an identifiable sector, with its own training needs. There is no doubt that were it not for the work of the GTC, in the education system, greenkeeper training would be subsumed into general amenity horticulture, with a sports turf option. Probably the most important achievement has been the progress made in