

	How do you combat damage being caused to irrigation systems during winter?	Do modern, computerised, automatic systems help with early warnings of such problems as non-uniformity in application?
Keith Martin Course Manager Machrihanish Dunes Golf Club 	<p>We drain our system and tanks down, protecting both pipe work and heads from frost damage. With our pump station being in a heated room there is also no chance of any damage occurring during very cold periods.</p>	<p>The installation of moisture probes within greens can be a great tool to monitor soil conditions, helping with both setting appropriate programmes and helping conserve the amount of water actually needed.</p>
Jeremy Hughes Course Manager Vale of Llangollen Golf Club 	<p>At the end of October, the system drain valves are opened and the two lowest irrigation valves will also be left open, the pump is drained off and drain plug removed. The intake submersible pump is removed for service, both tanks are left full.</p>	<p>My system is an old TW2 controller and while it will notify us of problems in the system and then run diagnostics to identify it quickly, we can only gauge uniformity and effectiveness of the coverage with visual assessment.</p>
Ken Barber Course Manager Staverton Park Golf Club 	<p>A powerful generator is used to blow the pipe-work through with air to clear the entire system of water. This ensures that the coldest of winters will not have any effect on the system.</p>	<p>Our greens have no steep undulations, which makes life a little easier, yet we had some localised Dry Patch problems last year. In some cases this may be due to wind exposure. I plan to water less often, but for longer, to encourage deeper rooting.</p>
Dave Langheim Course Manager Wimbledon Park Golf Club 	<p>We shut down our irrigation system around October, and drain off from the lowest points of the course. We blow out the pipes with compressed air to ensure they don't freeze over the winter months.</p>	<p>Very much so. Modern systems are so hi-spec now that you should never see non-uniformity in application. I think irrigation technology has evolved so much in the last ten years that non-uniformity is no longer an issue.</p>
Pete Gross Deputy Course Manager Ashbury Golf Hotel 	<p>We winterise both our systems each year to protect them. This means draining the whole system and also shutting down the controller so no signals are being sent out to the valves. Each of our pump houses are insulated and heated.</p>	<p>Valve-in-head sprinklers can show you how much each individual sprinkler is putting down and is instantly recognizable, however they don't say whether the sprinkler is rotating so uniform coverage still needs to be picked up visually.</p>
Aaron Small Course Manager Donaghadee Golf Club 	<p>At the start of November we drain the irrigation system at two low points on the course and we drain the main pump in the pump house. Also the pump house is heated just in case of any freak frosts.</p>	<p>We have a 35-year-old system that regularly gives us trouble. I prefer to check core samples and do visual checks than to rely on it. We do the weather for the MET office so we are very accurate on rainfall which helps a lot.</p>

IRRIGATION

Irrigation is the subject of debate

<p>Is it important for golf courses to be seen as leading the way in terms of respecting environmental issues of high water usage?</p>	<p>Where do you source your water from and is this an ideal system for you?</p>	<p>Water restrictions were placed on many areas of the UK in 2005. Is a problem keeping your course watered with these in place?</p>
<p>Yes, it is very important. Machrihanish Dunes follows an environmentally responsible management approach to our water resources with the aim of minimising water use and to protect and enhance water quality in and out of our course.</p>	<p>We have 19 well points from which we draw water. It is then pumped to a holding tank. This system works well for us as we only irrigate greens and tees. Also, we only use water only when necessary so we don't need to store huge quantities.</p>	<p>The abstraction licence we hold is adequate to more than fulfil our needs. The only problem we could have is during droughts the well points could run dry, but this hasn't happened yet.</p>
<p>It is important that we are seen to be intelligent in our water usage and what we can do to reduce the amount of water we need to use, so hand watering is an essential part of our water management program.</p>	<p>The source of our water is the stream that runs down through the course and feeds into the river Dee, which flows along four holes of our course. A submersible pump in a holding area feeds both irrigation tanks.</p>	<p>No we don't have any problems as we extract from the stream and do not take any mains water. We have a licence to extract up to 3.2 million units over the year and never get anywhere near this volume.</p>
<p>I believe water is used to excess on some courses, especially those with fairway irrigation. I aerate my fairways as regularly as I can afford, which promotes deeper rooting and more drought tolerant. Plus the more desirable bent/fescue grasses often predominate.</p>	<p>We are very lucky, since our water is sourced from a spring fed lake, which never seems to drop. The pH is a little too high for my liking, but having a natural water source allows me to easily carry out compost tea brewing.</p>	<p>Even with the spring fed lake, it does not necessarily mean I use it without consideration, since I tend to hand water when restrictions are in place. The occasional deep watering followed by syringing during very hot weather helps reduce plant stress.</p>
<p>When you have areas of the country with hosepipe bans and you're throwing on water, it's very important to respect environmental issues. I think golf courses should be at the forefront of using the least amount of water possible.</p>	<p>Our water is from the mains. Is it ideal? – No. I would love to use the nearby lake, but due to its toxicity, can't. Our course rebuild over the next few years will incorporate a new system and we're looking into bore holes.</p>	<p>The club was told to cut down, before my tenure began in 2008, and they did. They tended to over-water here years ago and the sprinklers were so poorly positioned that water was wasted. We cut that by placing half-circle sprinklers at roadsides.</p>
<p>Yes, and even more so for us with five and-a-half courses. This is why modern control systems and sprinklers are such useful tools. If the back of a green is sheltered, it can be watered less than the front with valve-in-head sprinklers as opposed to a block system.</p>	<p>Our water is all delivered from above and held in reservoirs. With the amount of courses we have, bore-holes or mains water wouldn't be able to produce enough water, as well as the cost being prohibitive.</p>	<p>Our main problem with keeping the courses watered is the actual amount of greens – over 100. Because of this we closely monitor usage and available water resource and adjust programmes accordingly.</p>
<p>For me to respect environmental issues better I would need a new system. This would save electrical energy, reduce hydraulic shock and provide better control of water use. Unfortunately there's no chance of a new one in this economic climate.</p>	<p>We source our water from a bore hole and mains water. The bore hole cannot keep up with the system in a night's watering so it gets help from the main. At least from the bore hole the plant is getting the majority of natural water.</p>	<p>As yet in Northern Ireland we have no water restrictions but we do keep it to a minimum. Often golfers perceive that greens are watered to soften them not that we water them to keep them healthy.</p>