Climate control

Climate unpredictability makes it far tougher for courses to stay on top of weather extremes. John Sutherland chats to those in the know to gain a keener insight into what needs to be done to ensure clubs stay on course

Sunningdale GC

Following one of the hottest Aprils on record, which saw barely a drop of rain in some parts of the UK, we were hit with the year's first hosepipe ban.

Not only was it unseasonably early but almost immediately after the announcement was made, the nation fell victim to two months of perpetual precipitation with rainfall that entered the record books.

This pattern of monsoon-like rainfall and scorching heat would be more at home in India than the UK but the reality is that this pattern of weather is likely to continue, coupled with colder, snowier winters.

We've seen the impact on sports such as football, with top-flight games cancelled, such as Sunderland's fixture in August. In golf, the issues are arguably greater because of the variety of turf types and a more varied landscape. So how can greenkeepers put in place contingency plans for Britain's weather extremes?

"The main issue is managing wet weather and ensuring adequate drainage," explains Richard Windows, a turfgrass agronomist for STRI (Sports Turf Research Institute) who works with Scottish clubs.

"It comes down to adequate soil management and effective drainage. With good organic matter reduction and regular sand topdressing, clubs can better arm themselves for the onset of poor weather."

Images show Sunningdale GC, 18th green on Old Course (TOP RIGHT) and 13th green (INSET RIGHT)

Windows talks of the "increasing need" on soil-based greens for underground drainage systems. Such installations need not cost the earth either, he says, At £3,000 to £5,000 per green, the works are within the reach of most clubs' budgets and compare favourably with the £30,000 he says covers complete reconstruction.

He works extensively with clubs in the Glasgow area, one of the wettest parts of the UK with 1,600mm to 1,800mm of rainfall annually. He adds: "I always recommend this method as it's very successful and allows improved year round performance". He advises digging narrow trenches and laying closely-spaced drainage pipes at 2m to 3m centres. "On top of this, implement an accurate organic matter management programme involving regular sand top dressing (at a rate of 120-150 tonnes per hectare per year), hollow coring and Graden sand injection scarification. The combination of drainage and accurate organic matter management will ensure courses can minimise the effects of severe wet weather. Improving sward species composition is also important to minimise the effects of changing and more extreme weather patterns.

"Finer grass species like browntop bents and fescues are better able to cope with climatic extremes and also perform better throughout the year. By improving the sward species composition you will help reduce the chances of disease, which thrive in wet, mild conditions."

At Sunningdale, course manager Murray Long knows that the best form of attack is a stout defence. "You have to plan your maintenance regime so when poor weather hits, you don't grind to a halt. A good soil maintenance plan has been key in the seven years I've been in the post, which means the right soil and turf conditions are set out for the whole season, including regular aeration, organic matter testing – and at its heart, good drainage. "It sounds obvious but planning is the only way to prepare for what the weather throws at you.

Historically, golfers have viewed the Berkshire club as a pure sand course, but this isn't the case, Long insists, as it has an underlying clay structure in many areas - an enemy of free drainage. "Our annual plan is based around our many ditches. Primary drainage takes excess

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water from the ditches into our reservoir and we then work out from that point, and highlight problem zones, which can then be tackled in isolation.

"Once the primary drainage does its job, the secondary drainage networks, gravel banding and sand slitting work more efficiently. We have a well thought out aeration plan tailored around the golfing calendar in the summer. We also slit greens weekly, alternating the depths throughout the winter months."

Greenkeepers' fear during wet weather is that the playing qualities of greens cannot be maintained to the desired standards. "Providing good drainage and firm surfaces is the foundation for delivering high quality and consistent surfaces whatever the weather," insists Windows. "On top of this, good turf husbandry and regular refinement involving brushing, grooming and rolling will maintain optimum playing conditions and healthy turf without having to mow turf short."

Long agrees, after discovering that the drainage practices at Sunningdale are vital in ensuring year-round play. "Fundamentally, if the greens are free draining they can be maintained throughout the year at any time. We can get on to our greens 99.9% of the time because we plan long in advance. We're averaging 600 to 650 tonnes of topdressing, split between the two courses which, combined with slitting and primary and secondary drainage systems, means the weather hasn't forced our hand."

For some of the major events held at Sunningdale, such as the international final qualifying for the British Open, a contingency plan is always in place, so if bad weather does descend, play doesn't suffer unduly. "By recognising the areas that are most at risk, we can pre-empt problems. We'll ensure there's enough staff, enough wet weather resources and the right knowledge of what the problems are beforehand, so we're not faced with an issue that we can't handle. We've now addressed most of the minor issues, so we need to do increasingly less to prepare for major events."

For clubs in the South-east such as Sunningdale, the biggest hurdle has usually been retaining water, not trying to remove it. So for Long, the wet weather has in some ways proved a blessing in disguise, allowing him to store more water than he would normally. "We're pretty much self-sufficient now," he states, "and collect as much as we can in our reservoir, which minimises the quantity we need to draw from boreholes and mains suppliers."

Not all clubs have the resources of Sunningdale. What does he suggest for those on a smaller budget? "My best piece of advice would be to improve water collection, which is also part and parcel of having effective drainage systems."

Good course management is not only about hands-on work but also about knowing your weak links. Every course will have its hotspots, so minimising footfall can play a critical role. Course vehicles assume a big part in the modern game, and it's no different at Sunningdale. "To ensure good grass cover in the winter months, we rope off sections of the course to avoid damage from buggies. Winter planning is as much about traffic management as anything else. We've fitted a GPS tracker to all our buggies, which notifies us of where they are at all times, and

allows us to send a warning to one if it strays into restricted zones. If this happens too often the buggy will cut out, preventing damage and saving us money."

While it's increasingly difficult to predict the weather, what we do know is that sound planning is paramount.

The growth in weather forecasting technology is proving a useful tool short-term in the golf club's armoury and one that Sunningdale makes the most of. "We've used Headland Amenity's Weathercheck for some time, and with some pretty good results," explains Long.

"What forecasting does do is give you further ammunition to prepare, and the Met Office's forecasting phone app also comes in handy when walking the course. With our location, and the fact we have a lot of high land around us, neighbouring courses can sometimes get the rain and not us.

Ultimately, it allows us to put better contingency plans together, which is really the key to dealing with poor weather."

The application of weather forecasting could become more widespread thanks to a new computer model from the Met Office that can better predict cold winter weather a season ahead.

Sunningdale GC, 5th on the new course (below)

While these developments are significant, experts were quick to play down the idea that it is a solution to the problem. Met Office spokesman Dave Britton said: "We don't want to over-egg new developments. It's moving us one piece forward in the very complicated jigsaw behind the weather."

Judah Cohen, director of seasonal forecasting at the US-based Atmospheric and Environmental Research (AER), said:" The research is potentially very important. Winter forecasting remains a difficult challenge and much work is needed to improve our forecast models."

The Met Office had shown "great creativity" in exploring gaps in our knowledge and deficiencies in the models, she added. "But frankly, the bar for seasonal forecasting is set pretty low so any advance is very welcome."