

Aberdour Golf Club

Report of Visit and Meeting of 13th August 2019

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Aberdour Golf Club

Report of Visit and Meeting of 13th August 2019

Those present during this visit were Jim Pearston, Mark Laing, Malcolm Baxter, and Paul Miller. As has become our custom we walked the course inspecting each green and took moisture readings on the 1st, 6th, 8th, 11th, 13th and 15th. There are a number of very pleasing aspects about the golf course and I feel that our strategy is proving the right one despite the fact that we are again in a challenging year weather-wise, although a very different one to that of summer 2018.

The summer that we are in has been and continues to be a wet and warm one. Rainfall in May was 30% higher than average, in June it was 90% higher than average, in July 10% higher, and to date in August there has been 70% more rain than average for the month and there is still a week of it remaining: in addition to this the temperature for the months of July and August has been 2°C higher than average¹. If grasses need two things to grow well it is moisture and warmth, and this, coupled with the fertile soils of Aberdour, has meant a lot of growth and therefore a lot of work in mowing and preparing surfaces. It is to the credit of Mark and his team that they present the course as they do, although there are clearly one or two things that they are unable to attend to as promptly as they would like given the number of hours available in a working week.

As we walked the course, I was generally impressed with how dry it is underfoot given the weather we have had. The course was dry and firm with only one significant wet area in the rough between the 8th and 9th fairways. This is very positive and reflects well on the underlying soils and the aeration and compaction relief work that the greenkeepers routinely undertake in the low season. A few greens continue to hold moisture in excess of where we would like them to be; this will be discussed further later in this report.

¹ www.accuweather.com Data for Kirkcaldy

The Golf Course

Condition of Greens

With the caveat of the wet and warm summer I am pleased with the condition of the greens. On the positive side there is a good strong colour and general uniformity to the greens' surfaces (one or two exceptions concerning moss e.g. 18th, parts of 11th and 15th) and my judgement is that they are a healthy colour, not having been over-fertilised with inappropriate products. One notable improvement in comparison to previous visits is the texture (leaf fineness) of the grasses. We have talked about this many times and about how texture can be improved through verti-cutting or brushing, and until this season it remained as something we wanted to implement, but the very dry and stressful summer of 2018 was not the right time to start it. Mark has chosen to use the brushes more than the verti-cut units, but the effect is the same. The coarser grasses have become finer in the leaf and blend in with the finer species better, bringing a visual improvement and also an improvement to ball roll. During this visit we watched several golfers putting and the ball certainly seems to roll smoothly.

Those areas of greens where moss has been a persistent element of the sward are showing moss to be more aggressive again this summer. The balance between moss and grass is one that is sensitive to light, temperature, and moisture, and the dynamic competition for space is ongoing. It appears that in some areas the moss has the upper hand, again in my opinion due to the wet summer, however it also indicates that although we have made improvement to the competitiveness of the grasses we need to continue with the approach of building plant health and resilience through attention to all the fundamental practices of greenkeeping. I believe we are improving the growing conditions of the grass through use of wetting agents, seaweed liquids, and the fertiliser selections we are using, but that work needs to continue.

Slightly less positive, but something over which we have limited control, is the firmness of the greens and therefore the potential to make them 'slick' in terms of greens speed. The wet and warm summer has stimulated a lot of growth meaning a slight accumulation of organic

matter at the surface. It will be recalled from previous reports that organic matter holds moisture which makes the greens softer and therefore slower, and this is what is observed on this occasion. The extra growth meant that Mark slightly lowered the height of cut to create a little more speed, a decision which I fully understand and which has proven to be an appropriate one, inasmuch as this loss of leaf tissue when the grass is growing so strongly has a minor impact on the plant health. Should we be lucky enough to get a dry autumn I'd be looking for this height of cut to return to 4mm as soon as possible to protect plant health and resilience.

A further consideration of wet weather and therefore softer greens is the prevalence of pitch marks. This has been raised before and it remains disappointing that some golfers don't repair their own pitch marks. Figure 1 shows a fresh pitch mark as clear as day on the third green – at least one golfer has walked right past this and made no attempt to repair it: it is difficult for the greenkeepers to maintain smoothness in wet conditions in any case, and this makes it more so. In my view it is disrespectful to the golf course, the Club and the greenkeepers to leave pitch marks unrepaired in this way.



Figure 1. Unrepaired pitch mark on 3rd green

As stated above the firmness and speed of greens is related to moisture content. This is something we have been routinely measuring and we did so on this occasion; a comparison of August 2018 and August 2019 is given in figure 2.

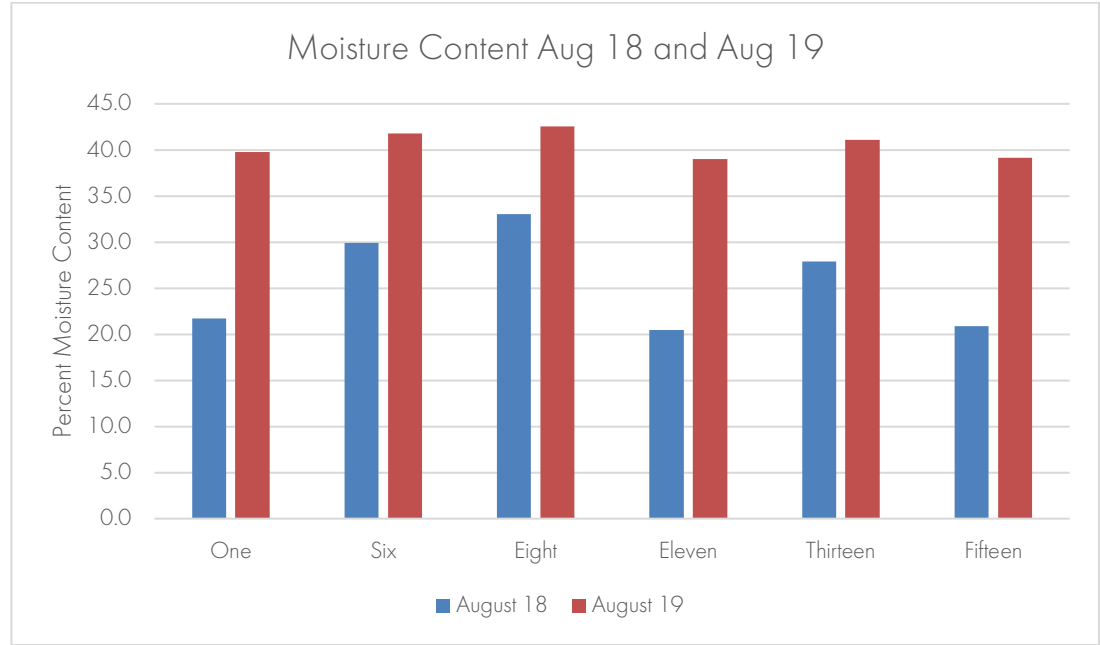


Figure 2. Comparison of moisture content in August 2018 and August 2019

Figure 1 shows that in the dry summer of 2018 the moisture content of these six greens was between 20% and 35% by volume, against a routine target of 30 – 35% to allow appropriate firmness, speed and smoothness. As can be seen the moisture contents from August 2019 show the levels considerably higher, between 38 and 42%, i.e. somewhat above the target. My visit was on a Tuesday; Mark reported 92mm of rain accumulated in the weather station over the previous five days, and this is reflected in these figures. In addition to the above-average rainfall the greens are really having no opportunity to dry out through evaporation and transpiration due to the regular nature of the rainfall, so this is not making things any easier.

In addition to the effect on playing performance of the surfaces the high moisture levels are affecting the composition of species in the greens. We all felt that there is a higher prevalence of moss this summer, not to a hugely detrimental effect but we are working to

improve the competitiveness of the grass against the moss, however a wet summer has tipped the scales back in favour of the moss. A further area of concern is the presence of a dark green, almost black, algae forming on some greens. It is particularly noticeable in the wettest areas including some standing water at the back right of the eighth green, the left hand side of the 4th, and a little bit on the right of the 7th. Figure 3 shows the algae in an affected area.



Figure 3. Algae accumulating in particularly wet areas.

The following is a description of the problem taken from Iowa State University², which I feel describes exactly what we are seeing, and gives a brief description of the reasons for it and some controls ideas:

"Algae in Turfgrass

By Lina Rodriguez Salamanca, Plant and Insect Diagnostic Clinic

Algae are primitive green plants. They can be a problem in turfgrass when surface conditions are overly wet. They tend to occur in low, shaded, or compacted areas. Algae form a greenish to black scum on the soil or in thin turf. As this blackish scum dries, it appears as a

² <https://hortnews.extension.iastate.edu/2018/09/algae-turfgrass>

crust that later cracks. Turfgrass plants may become chlorotic (yellowed), weak, and eventually die.

Algal scums can be controlled by:

- improving surface and subsurface drainage
- avoiding frequent waterings, especially at night
- aerifying compacted areas
- maintaining proper pH and nutritional levels
- increasing mowing height
- improving light penetration to the turf
- using shade tolerant grasses in shady areas"

It is tempting to speculate about how the greens would have responded to the summers of 2018 and 2019 had we not embarked on the strategy and programme we have undertaken. The strategy has been to improve plant health and increase resilience to environmental stress as a consequence of that, through a variety of measures implemented in Mark's maintenance programmes. It is my feeling that this is working and I am not disappointed in the performance of the greens and how they have responded both last summer and this, and indeed how they have got through the winters of 2017-18 and 2018-19, I believe having extended the period of turf quality well into the autumn, and with an earlier pick-up in spring. Having said that, I also believe that there are continued improvements to be made and that we need to continue to pursue them. In my opinion this is primarily about continuing to improve the ways in which the greens handle water. This has to be a combination of the ways in which water gets on to the putting surfaces, how it infiltrates through the surface, and how it percolates through the body of the soil.

Water onto Greens

There is nothing we can do to control rainfall, so in years such as this one we will just have to accept what nature gives us, in common with every other golf course, and try to minimise its effects through good greenkeeping. It is still my contention however that water continues to enter those greens which have a steep bank above them, e.g. to the right of the 6th and 8th, and to the left of the 4th. Other greens show this to a lesser extent e.g. the 7th and 9th. We

have tried putting in a small interceptor drain in the form of a gravel band on each of these areas, but it is difficult to tell if this has had any significant effect. It may be that a specific drainage advisor could produce a more comprehensive plan on how to prevent this water ingress, but there is unlikely to be an easy or cheap solution. As such we will need to continue working to get water through the greens.

Infiltration

In terms of water infiltrating the greens surfaces we need to continue to aerate as frequently as possible using pencil tines and other relatively low-disruption techniques, and we need to control and manage the accumulation of organic matter. As described above it is my feeling that this 'growing' summer has created a little more organic matter than we had been seeing, and we need to control and dilute this through the planned programme of autumn renovation (scarifying, coring, topdressing). I'd also like to see a programme of more frequent, light topdressing with sand, just to facilitate infiltration but also accruing other benefits.

Percolation

The movement of water through greens depends to a large extent on the texture and structure of the soil. As we know, there is variability of the soils in the greens at Aberdour, however common to them is a relatively sandy upper profile giving way to native soils which, given their 'parkland' nature, are less open and free draining (see figure 4).



Figure 4. Typical upper profile of Aberdour greens

In a dry year this isn't an issue, but I think this year we are seeing the limitations created by this, and that it would be useful to address that. Mark is a user of the verti-drain, and this is a great tool for breaking compaction and allowing greater water movement, but it operates to a restricted depth. A method that is being widely adopted now is the Air2G2 machine, which injects air at high pressure into the profile and breaks deep-seated compaction. I am aware of other clubs who have used this and report positive results. We talked about this and I'd strongly recommend speaking to the contractor about your soils and conditions with a view to using this equipment at Aberdour.

Greens – Recommendations

At the time of my visit the late summer renovation work (scarifying, coring, topdressing) was planned for week commencing 19th August, and it is my understanding that this was carried out successfully. I think that this year in particular the greens will very much welcome the aeration and will respond positively, and should recover quickly given the weather and time of year.

Given all of the foregoing there are a few things I think we can recommend for the greens.

Surfaces

Surface preparation is good and as said earlier the density, uniformity, smoothness, texture and colour are all very positive aspects of the greens. They are however lacking a little in firmness and speed due to the rainfall that has been experienced, and the slight accumulation of organic matter. As such I feel that the ongoing programme of mowing at 4mm, regular light brushing, and rolling should be continued, but I'd like to see regular light topdressing applied more frequently in order to dilute the organic matter a little.

In relation to the algae on some surfaces it is my feeling that all of the maintenance recommendations below will act as cultural controls against the algae and that at the moment it is simply a symptom of wet conditions at the surfaces of those greens affected. My understanding is that there are no approved chemical controls against algae, but you could check with your suppliers, although any specific materials used against moss are likely to check it.

Profiles

The topdressing mentioned above will make a slight but positive difference to the profiles, and I'd also recommend continued regular use of a low-disruption tine for aeration i.e. the pencil tine currently in use, regardless of whether the weather is less rainy or not, as I feel it is important to get the water moving into the soil if at all possible rather than being held at the surface. I'd recommend using the verti-drain in the later part of the year as is accustomed practice, and exploring the use of the Air2G2 and using it on all greens subject to potential disruption to surfaces (perhaps discuss with Kenny Duncan at Dunfermline, who has used it regularly and is pleased with the results) and to the conditions at Aberdour not being prohibitive. What I mean here is, for example, the fact that we have often speculated about there being a rocky shelf under the 13th green, and so soil depth and potential damage to the machine need to be discussed with the contractor. I am happy to speak with the contractor on your behalf if appropriate.

Other

I would be very pleased if those areas badly affected by moss, which we have identified previously e.g. parts of the 11th and 15th greens, and the whole of the 18th, could be treated with the granular wetting agents that Mark is planning to do. Moss in these areas remains stubborn and is particularly apparent in a wet year, and I feel that we should continue the journey to improve the plant's competitiveness against it.

Looking Forward

The renovation work which has just been undertaken will give the greens a chance to breathe and recover from the wet summer, and if we are fortunate the autumn will be less rainy and they will have a good chance to be strong coming into winter in a couple of months' time. If however the weather remains wet then there will be high disease pressure and we may well see outbreaks of Fusarium Patch and potentially Anthracnose. I'd therefore be keen to return the heights of cut to 4mm, to use seaweed liquids as regularly as monthly, and plan for the application (when the time is right) of an autumn fertiliser high in potassium (K). Regular light aeration should also continue. I am confident that Mark will have all of this in hand and in planning, and we can hope that disease pressure doesn't create difficulties, but also be prepared for if it does. As before Mark needs to be prepared to use a fungicide if required, using his judgement of sward condition, disease pressure and weather forecast.

Other Considerations

Tees

I noticed a marked change in tees on this visit, with improvements in colour, density and texture. I believe they are being cut a little more frequently, which allows them to 'tighten up' a little bit, and have been treated with a growth suppressant called Primo Maxx. This product prevents elongation of the cells of the plant meaning that the dry matter produced by photosynthesis stays closer to the ground and creates a denser and more resilient sward. Mark has used it here with positive effect and it might be useful to plan for using it as a regular management tool on tees in the future.

Fairways and Semi Rough

Fairways were generally dry and firm and looking fit for purpose. One exception to this is the 6th which remains a little soft, but the gravel trenching work that was done a year and a

half ago has made a big difference here. I don't think that area would have remained playable under 92mm of rain in the absence of that work, and so this has been a good investment. It is clear that the growth on fairways and semi roughs this year has been difficult to keep control of. There are some clippings lying in clumps, but this is inevitable when cutting heavy, wet grass that is growing so fast, and although it detracts from the overall appearance it is simply a consequence of the wet summer and will be an feature of most parkland golf courses this season.

Paths and Trees

Another consequence of the rainfall is the washouts on paths e.g. in the area of the 7th tee. With the pressure on available greenkeeping hours to cut grass and to maintain playability of turf the repair of these areas is something that has to wait until turf maintenance slows down.

In a wet season such as we are experiencing, we need to consider all approaches to improving dryness in the turf. One consideration in a few areas is the shade from trees e.g. the 6th fairway, 13th tee, and 17th green. Although it is a long term consideration I think it would be useful to start a conversation and create a plan for reducing the number of trees in these areas. This does not mean removing all trees and detracting from the character of the hole or the golf course, however trees have a habit of self-seeding and becoming overbearing by stealth e.g. the sycamores at the 17th, and this needs to be countered through a management plan. I am confident that with the right considerations these areas could be opened up without detriment to the visual amenity of the course, but definitely to the benefit of the turf. We saw this over the last 12 months following the removal of some trees behind the 3rd green and the subsequent absence of disease from this green, which previously had been quite badly affected.

Conclusion

The course is performing well in a wet summer and whilst a little extra pace is desirable in the putting speeds there is little further that can be done without causing undue stress to the plant. As an overview I feel that the course is moving in the right direction and becoming more resilient to stress, but it is not a single, smooth progression and a wet year such as we are having shows up areas of vulnerability. As such I recommend that we continue putting the emphasis on the health of the plant in improving the growing environment through seaweed, wetting agents, aeration and the right fertiliser, and managing surfaces sympathetically through height of cut, frequency of mowing, rolling, brushing or verti-cutting, and topdressing. The one thing I'd like to see a bit more of is topdressing, within the constraints of the golfing calendar and budgets.

In the longer term I feel that a significant issue will continue to be the density, age and condition of trees in certain parts of the course, and from the perspective of turf condition I'd recommend a plan to remove as many trees as is feasible, in certain areas, without detracting from the visual amenity of the course.

Paul Miller PhD
August 2019