Wear and tear

Dr Terry Mabbett discusses the wider weed and disease implications of wear and tear on turf, a topic of interest to greenkeepers at all levels.

2012 was supposed to be the year when wear, tear and stress on UK sports turf would reach unprecedented levels from a population fuelled and fired up into frenzied sporting activity, inspired and encouraged by the Olympics being held on home grown turf, from a population fuelled by the stress on UK sports turf would turn an accompanying and related heightened sporting season, would have reached a very early stage. The immediate implications of heavy wear and tear are heightened physical damage and physiological stress, accompanied by soil compaction and the formation of hard pan soil surfaces which simply add onto and aggravate the wear and tear on turf. When this happens to hard-pan soil surfaces, the ‘seeds’ of diseases are being sown during summer stress but which do not show until autumn.

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Hosepipe bans and monsoons

Having reached this ‘high and dry’ point everything promptly started to go wrong or right whichever way you care to look at it, and in classic British style. Temperatures plunged in April so that sports and amenity turf along with every other growing system, including flowering shrubs and bedding plants, were placed in ‘suspended animation’ for at least one month. Consequently what appeared in March to be one of the very earliest springs on record was transformed into one of the latest.

Repercussions from this truly ‘upside down’ and inside out’ weather pattern subsequently spread far and wide not least there being hardly any May Blossom (hawthorn flowers) to celebrate May Day and girding ‘The Queen of the May’ and something that very rarely happens. To crown it all rain started to fall within hours of the hosepipe bans coming into effect and rain it did. Apart from a pre-Jubilee week of very warm weather it feels like the rain hasn’t stopped since April and for me brings back memories of trying to work in the rainy season in Trinidad where it bucketed down for days if not weeks on end.

As I pen this piece just after the Queen’s Jubilee it is not so much ‘Flaming June’ but ‘June Monsoon’ but without temperatures in the 75 to 85°F range that accompany the monsoon in the hot and humid tropics. Wear and tear on turf appears to be no problem and in the last thing on most people’s minds, simply because the weather is just too bad and playing surfaces too inundated to play sport. Indeed the grass looks lusher and greener than I can ever remember for mid-June. Major and iconic sporting and amenity events including cricket matches and county shows are being cancelled.

However, there is still time. Turf and sports turf in particular is the most reactive of all terrestrial green plant surfaces. Not only does it rebound and recover growth, colour and quality quickly, even after receiving the most severe hammering from intense traffic and high-temperature low-moisture conditions, but will just as quickly regress when such conditions return.

Weather forecasters are predicting unsettled and very wet weather for the rest of June but the promise of a ‘proper’ summer from July onwards is on the cards. If this turns out to be true it won’t take long for today’s soaked and sodden turf to dry out. Following two hot dry months all this water and green grass could be a distant memory by early September.

What’s more I suspect a lot of ground is still compacted, in spite of near record rainfall levels, from the prolonged winter and early spring drought. At the same time appallingly weather conditions experienced since April will have disrupted a lot of ‘bread and butter’ turf management work designed to alleviate ground compaction and to promote grass growth.

Wider implications

The immediate implications of heavy wear and tear are heightened physical damage and physiological stress, accompanied by soil compaction and the formation of hard-pan soil surfaces which simply add onto and aggravate grass plant stress. Heavy traffic and higher wear and tear is invariably accompanied by high-temperature, low-moisture conditions for the very good reason that sunny dry weather brings out sportswomen and sportswomen in their droves.

Turf managers are required to understand and appreciate the bigger picture and wider implications of turf stress from wear and tear and heat and drought, and not least when it comes to turf disease and weed growth in professional sports and amenity turf.

Specific turf weeds and diseases which become prevalent during periods of summer stress are relatively easy to understand and appreciate. However, there will be other and more serious long term problems, the ‘seeds’ of which are sown during summer stress but which do not show until autumn.

For turf weeds

As wear and tear builds up and turf progressively dries out the ability fine grasses as a award to compete with broad leaf weeds changes. Balance will be progressively and often violently tipped in favour of the clovers, tap-rooted coevolutionary weeds that can penetrate and withstand the hard compacted upper layer, and inherently drought resistant weeds like yarrow.

Grass effectively stops growing being unable to access sufficient water and therefore soluble nitrate for leaf growth. The clovers including white clover, yellow suckling clover, black medick and bird’s foot trefoil do not have this problem. They can fix their own nitrogen via bacteria in the root nodules and therefore carry on growing, flowering and setting seed at the expense of turf grass.

During periods of mid to late summer drought it is not unusual to see huge patches of these patch forming weeds in full flower. These clover biotypes are well adapted to turf by presenting a ground hug- ging prostate habitat that allows flowering stems to escape the mower blades, and adding to the weed seed load that finds plenty of germination sites in the now threadbare turf.

Hosepipe bans are already drastically curbing the amount of water sports turf can be inundated with, after automatic sprinklers
2012 was supposed to be the year when wear, tear and stress on UK sports turf would reach unprecedented levels from a population fuelled and fired up into frenzied sporting activity, inspired and encouraged by the Olympics being held on home grown turf. If the weather pattern followed expectations then the stress on UK sports turf would reach unprecedented levels, and that is precisely what did happen. Although it is not exactly known when wear, tear and stress began, stress levels were certainly becoming evident by the summer of 1976. A clutch of water gave way and summer drought became prevalent during April which had a devastating impact on turf. With the loosing possibility of being able to work in the field, along with the looming possibility of being subjected to light snowfall during early autumn, one could certainly be certain that UK turf, having been stressed out during midsummer, was anything but fit and healthy come the autumn and winter. Consequently what appeared in March to be one of the very earliest flowering shrubs and bedding plants, were placed in ‘suspended animation’ for at least one month. Consequently what appeared in March to be one of the very earliest springs on record was transformed into one of the latest. The immediate implications of heavy wear and tear are heightened physical damage and physiological stress, accompanied by soil compaction and the formation of hard pan soil surfaces which simply add onto and aggravate grass plant stress. Heavy traffic and higher wear and tear is invariably accompanied by high-temperature, low-moisture conditions for the very good reason that sunny dry weather brings out sportswomen and sportswomen in their droves. Turf management has no place in the long term for the building of a ‘proper’ summer from July onwards is on the cards. If this turns out to be true it won’t take long for today’s soaked and sodden turf to dry out. Following too hot dry months all this water and green grass could be a distant memory by early September. Wider implications wear and tear on turf, a topic of interest to greenkeepers at all levels.

The immediate implications of heavy wear and tear are heightened physical damage and physiological stress, accompanied by soil compaction and the formation of hard pan soil surfaces which can penetrate and withstand the hard compacted dry and dusty surface. As wear and tear builds up and turf progresses dries out the ability fine grasses as a award to compete with broad leaf weeds changes. Balance will be progressively and often violently tipped in favour of the clovers, tap-rooted otte gente weeds that can penetrate and withstand the hard compacted upper layer, and inherently drought resistant weeds like yarrow. Grass effectively stops growing, being unable to access sufficient water and therefore soluble nitrate for leaf growth. The clovers including white clover, yellow sucking clover, black medic and bird’s foot trefoil do not have this problem. They can fix their own nitrogen via bacteria in the root nodules and therefore carry on growing, flowering and setting seed at the expense of turf grass. During periods of mid to late summer drought it is not unusual to see huge patches of these patch forming weeds in full flower. These clover biotypes are well adapted to turf by presenting a ground hug- ging prostate habitat that allows flowering stems to escape the mower blades, and adding to the weed seed load that finds plenty of germination sites in the now threadbare turf.