

The art of greenkeeping, according to ROBERT TAYLOR, relies on a dedicated approach to work – and with green issues a top priority, now much more than ever before

It is estimated there are in the region of 2,100 golf courses established or being established throughout Great Britain, amounting to over 120,000 hectares of land. The terrain and vegetation classifications on which such golf courses are situated varies from heathland/moorland, parkland (predominantly broad-leaved or coniferous woodland and grasslands) through to the sand dunes and slacks of maritime or links courses.

It is also estimated that only two to three hectares of the course – ie. the putting and teeing areas – are or should be intensively managed. The fairways, excluding carry but including the greens collars, surrounds and bunkers etc., may total up to 17 hectares leaving up to 40 hectares (on an average course) which can be divided between deep rough, semi rough and the fairway carries. Indeed, the deep rough alone may occupy up to 40% of the total land, depending upon the course standard. Thus, working on the lowest figures, up to 42,000 hectares of rough is represented within the nation's golf resource.

Small wonder, therefore, that where very little time and resource is given to this land criticisms highlighting the 'selfish use' are resulting in harm to the sport, especially where planning applications for further development are submitted.

Definitions

The concept of rough and the need for its management are not always immediately understood. In the rules of golf the term 'rough' is not specifically defined but is included in 'through the green'. The latter is taken to include fairways.

Ideally the rough and the management thereof should include all the areas of the course surrounding the green, tee and fairway of each hole. Any rough management programme should consider the range of vegetation associations such as the various forms of grassland, the woodlands, copses and shelter screens, the heath (or heather dominated communities) and the water features including ponds, lakes, dykes and drainage ditches.

Ecological management of the golf course should not be thought of strictly as 'rough management'. The fairways, bunker moundings and surrounds situated on suitable nutrient poor soil types may often be included. Indeed several have been designated with the status of Site of Special Scientific Interest (SSSI), and may be severely damaged by insensitive management operations. Incorrect management can lead to a fairly rapid change in the species composition and the loss of desirable herb and grass species from the sward. Such areas would form part of the overall ecological management programme.

Management objectives

Ideally an initial survey of the course should be undertaken to determine both the present vegetation associations and the type of management necessary to enhance or retain



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existing character. Within the survey it may be useful to assess the history of the site with respect to possible successions or the change in vegetation and species abundance. This is often helpful in highlighting particular problems which can then be addressed.

A certain amount of expertise is required when evaluating a particular golf course site. On a heathland course, for example, it would be wrong to encourage management toward great species diversity. The development for diversity for its own sake is rarely a wise conservation goal and is certainly inappropriate on heathland. Diversity here would invariably result in the reduction of those characteristics and species of greatest importance. It is important that the appraisal be carried out by a competent ecologist experienced in the game of golf, one sympathetic to the needs and priorities of the sport.

The data and results obtained from such a site inspection should be drawn together and encompassed in a 'Plan of Action' for the course. Such a document should outline an appropriate management strategy taking into account all areas of the course and the varying habitat types present. The plan must consider the requirements of golf (the strategy and character of each hole) and the ecological needs in

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etc., has largely maintained the heath condition, though on golf courses traditional processes have ceased to such an extent that the spread of bracken, rhododendron, birch and pine scrub are all altering the character of the heathland course. The scale of the task on many courses is so substantial that a phased programme of reinstatement and restoration over several years should be considered.

It would be sensible at the outset to concentrate management in those areas of new scrub colonisation, in order to avert the need for more expensive action at a later stage. Clearance of both pine and birch is a physical process which due to past neglect may involve a large labour input. Following physical lifting, all cut material should be removed from the site to prevent any return of nutrients to the soil. Birch stumps remaining should be treated with an approved herbicide to prevent their re-growth.

Rhododendron is a very invasive component of many heathland courses and is best removed by winching (especially on sandy soils) or by cutting and chemical treatment. Cut stumps should be drilled and filled with an approved herbicide.

Bracken eradication is timing dependent, with Asulam sprayed over the young, dry fonds in mid July to mid August being possibly the most efficient technique. If applied correctly in dry conditions, allowing 36 hours between rainy spells and where wind speeds are between 1-3, underlying heather should not be adversely affected.

Heather, normally the dominant species on the heathland courses, is often sadly neglected and is therefore usually old and beyond its capacity to regenerate vegetatively, or is being outcompeted by more aggressive grass species. Management to reinstate areas where the heather has become very 'leggy' will involve cutting the sward to ground level and removing the arisings and litter. A heavy duty flail/scarification machine should be employed to remove surface debris without passing too deeply into the surface, bearing in mind that regeneration at this stage is almost entirely dependent upon the buried seed bank.

In younger swards the heather should be periodically cut to maintain the desired height, keeping the plants in the building phase of their life cycle, which in turn will encourage basal tillering and maintain a strong and dense sward. Suitable machinery to employ would be a forage harvester or a heavy-duty vertical flail with collecting hopper. In a recent series of heather trials conducted by the STRI we used an Amazone Groundkeeper, which proved to be most satisfactory.

Burning is an option, but has a fairly restricted application on the golf course. Much depends on a fast burn at an appropriate temperature, with these conditions being quite exacting and difficult to achieve. Should you consider this option it is ideally carried out in February, with the action becoming unlawful after the end of March.

Cutting management is best undertaken between November and March, preferably after seed set, but not in adverse weather conditions. Competition from productive grass species is a problem, particularly on those courses lying on dry nutrient poor sand and still recovering from the onslaught of the previous two years of drought. In such cases grass invasion should be controlled through an integrated programme of scarification and selective herbicide treatment, though it should be noted that the scarification procedure may temporarily inhibit the heather, but this should recover with the passage of time.

Conclusion

Greenkeeping in the 1990s is both an exacting science and an art. Understanding the management ground rules for putting and teeing surfaces requires a very dedicated specialism – as we progress into an era where environmental conservation is taking an overriding precedence in our societies sociology. Then the specialism of rough management will increasingly present itself to the greenkeeper, his workforce and to the Club as a whole. The STRI is now, through its research and consultancy services, heavily committed to the restoration of heathland courses and welcomes requests for advice and guidance.

● The author, Robert Taylor, is an ecologist with the Sports Turf Research Institute. He will be addressing the subjects of Environmental Considerations in New Course Design and The Ecological Management of a Golf Course as part of a series of STRI seminars, scheduled between November and February at various locations throughout the country.

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order to ensure the continued survival of common and scarce species present. The plan must offer a practical and workable strategy, giving due consideration to the financial and labour resources of the Club and the availability of machinery to undertake many of the operations that may be recommended. It may be that expensive machinery is required for certain operations and this may involve either hire or outright purchase.

Timing of such work is in many cases critical on a golf course, complicated perhaps by a range of other pending priorities with which the greenkeeper is faced. Also integral with the timing is the actual phasing of such works. Much will depend on the amount of work to be carried out, but splitting the work up over several years does minimise course disturbance. Similarly, working one area of the course at a time will result in less disturbance than an approach where work is scattered around the course. Phasing the work over discreet areas will indirectly have certain ecological benefits, by maintaining a series of different habitats which are all at different stages in their life cycle.

Management

It is not feasible in an article of this length to discuss in depth the management of all habitat types encountered by the greenkeeper on his course. I have therefore concentrated my efforts to exemplify the ground rules for management on just one major habitat type, that of heathlands. Future articles will discuss the ground rules for management of woodlands and grassland, as encountered on parkland and downland courses, and the very exposed coastal maritime or links courses.

Heathlands: Although heathland courses have a strong air of wilderness about them – giving a serious impression of naturalness – they are in fact totally 'man-made'. Evidence from pollen analyses suggests they were once wooded and were cleared in the Bronze age in respect of the continuing population expansions that were then occurring. Heathlands tend to be caught in an aggressive process of tree/scrub re-invasion and reversion back to original woodland condition. Constant management, ie. grazing and fodder harvesting