Scottish Golf Union
SCOTTISH NATURAL HERITAGE
This work is assisted by funding from the Scottish Executive

GREEN SOUND

SCOTTISH Golf Environment GROUP

CONSERVING WILDLIFE
IT'S EASIER THAN YOU THINK

THE FUTURE OF SCOTLAND'S WATER
NEW LAWS TO COME INTO FORCE

"PEST"-ERED BY CLIMATE CHANGE
FURTHER IMPACTS OF CHANGING WEATHER

Adviser's Report

The last few months have been particularly busy for all three SGEG advisers. Site visits and requests for first time visits have been steady and we have followed up a number of practical projects involving pond, wetland and ditch creation. These projects were motivated by clubs wishing to enhance areas suffering from attenuation of water and it is encouraging that in many cases these projects have transformed problem areas into assets to the course.

We have also provided environmental advice and guidance for a number of new golf developments. These range from smaller scale children's courses such as the Hermitage of Braid in Edinburgh to large, international developments of championship courses.

We continue to develop a range of strategic projects, including a biodiversity study on golf courses, toolkits for waste management and energy efficiency, and on-going research into the predicted impacts of climate change. On that note, the SGU in partnership with the SGEG and the STRI will be holding a series of seminars this autumn/winter with particular emphasis on our climate change trials.

Internationally, our work with the R & A Golf Course Committee and with other organisations around the globe continues to pay dividends. We are a recognised source of advice worldwide with over ten countries, including Australia, China, USA, Canada, and Norway, seeking information in the last few months alone.

We hope you enjoy Issue 2 of Surround and please contact us if you have any thoughts or comments for future issues.

Keep hitting it long and straight!

Jonathan Smith

Jonathan Smith
Golf Course Adviser

Interested in saving money?

A new toolkit has been produced to help golf clubs reduce energy consumption and cut costs.

Devised by the SGEG, in partnership with the Scottish Golf Union, the Scottish Energy Efficiency Office and the Committed to Green Foundation, the guide suggests a wide range of practical no cost and low cost ideas to reduce energy use and to make clubhouses and maintenance facilities more efficient to run.

In addition to the guide, which was funded by the Scottish Executive, a limited number of free expert energy audits and advisory visits are also available. Those interested in picking up the new toolkit or wishing more information should contact the SGEG.

What a waste - can you help?

There are many issues relating to the management and disposal of waste, and to the prevention of pollution, which affect golf facilities. Green-staff in particular have to work within legislation covering a wide range of operations - from the storage, handling and disposal of pesticides, through to the disposal of used oils, parts, clippings and sand.

Legislation and best practice are often inter-twined, so that if you are undertaking accepted standards of best practice then you are working within the legislation. This is the case when disposing of pesticides within the Groundwater Regulations.

The problem is that there is a plethora of legislation affecting these wide ranging issues, which we have brought together under the term "waste". What's more, the legislation and best practice standards are constantly evolving (see article on the Future of Scotland's Water).

Acceptable standards for wash bays, fuel stores and fuel dispensing are all changing. It is very hard to keep track of all of this.

For this reason we have initiated a project to identify all the relevant legislation that affects golf facilities in these areas, condensing the best practices for each and packaging it in a "toolkit" for those involved in the administration and management of golf facilities. The work is being steered by a partnership of SGEG, STRI, BIGGA, SGU, Envirowise, SEPA and Scottish Energy Efficiency Office. We hope to publish the toolkit in Mid 2004 and would now ask you to let us know if there are any issues or operations that you feel require clarity over best practices and legislation.

Please contact us at the details provided on the back page.

Norwegian Study Tour comes to Scotland

In September, a delegation of government, environmental and sports development officials from Norway came to Scotland to study the sustainable development of golf courses. Norway is experiencing something of a golf boom, with a large number of courses either in development or planned. However, the authorities have concerns over the environmental impacts of these developments.

They were also interested in learning about the economic and social benefits of golf courses, striving to develop the right type of courses in the right place in order to have profitable facilities which deliver as much as possible to local communities.

The tour visited Royal Troon to see a traditional links course and championship venue, Mortonhall and the Braid Hills to see how a members club and municipal golf course provide huge social, economic and environmental benefits within a city, and also to Pumpherston to see how a former brownfield site can be turned into a healthy environment and recreational facility for the local community.

It is hoped that the tour will have educated the delegates on the important social, economic and environmental role of golf courses and in so doing will help them devise a strategy for the sustainable development of golf courses in Norway.

The delegates explore Mortonhall golf course, discussing golf's social, economic and environmental contribution in a bid to assist in the strategic planning of golf development in Norway.

Paal Melbye, Head of Golf Facilities with the Norwegian Golf Federation said:

"The reason for us bringing representatives from local and national government was to learn more about how Scotland has integrated golf courses with the local environment by good planning and sound knowledge. Several of the courses that we observed on our trip are outstanding examples of good planning, regarding the way the courses are integrated with the environment and society. The whole group felt that we had learned a great deal on how to ensure golf courses in Norway are of maximum benefit to people and the environment."

Turning the tide on erosion

Coastal defences along the Eden Estuary installed by the St Andrews Links Trust are succeeding beyond expectation, according to an independent report.

The results show a significant reduction in the alarming rate of erosion of the dunes, which was bringing the tides dangerously close to the historic Links courses.

Sand was deposited along a 300 metre stretch of dunes between the estuary and the 8th hole of the Jubilee Course to build up the eroded areas, with marram grass also planted to improve stabilisation.

"I am very impressed that it has stood up so well despite major storms," said George Lees, of Scottish Natural Heritage. "Every recharge scheme is different depending on local circumstances and although they cannot be expected to last indefinitely, this is certainly holding up well."

Alan McGregor, General Manager, St Andrews Links Trust, added: "These coastal defences were the result of extensive consultation with environmental organisations. Naturally we are pleased that they are working well so far, creating a vital buffer zone between the estuary and the Links."


Balnagask


The Dukes


Peebles


Cardrona

It’s not hard to conserve wildlife

The conservation of wildlife and habitats, or biodiversity as it is commonly known, can be really quite simple. It is about knowing when to take action and manage species and habitats, and when to stand back and let nature take its course.

Here is a gallery of images showing just some of the ways that other golf facilities are playing their part. Remember many of these examples are motivated by the desire to save money, enhance the atmosphere or character of the course, preserve the courses traditional qualities and improve drainage. Carried out in the right way, such projects can benefit wildlife and help in the delivery of **Scotland’s Local Biodiversity Action Plans**.

The Braid Hills in Edinburgh adopt a policy of not over-manicuring the course, providing natural character, challenge and a wealth of wildlife. It also means all available resources can be targeted at the priority playing areas.

Balnagask golf course in Aberdeen, where large areas of semi rough have been allowed to grow in to provide greater definition and shape to the course - in a way which does not necessarily slow up play or is unfair to golfers.

The Dukes Course - retention of rough grassland and wetland carries add challenge and avoids the problems of managing wet areas. Patch size of habitats and their connectivity are greatly improved by such measures, dramatically increasing the ecological value of the golf course. Small habitat patches and fragmentation are probably the main reasons for reduced ecological activity on golf courses, and can be easily remedied by such cost saving measures.

At The Glen, North Berwick a programme of native coastal scrub planting has been undertaken to increase the definition of certain holes and add more atmosphere, (tied into the extension of certain holes and enhancements to contour mowing). This will benefit declining bird species such as yellowhammer, linnet, whitethroat, reed bunting, bullfinch and stonechat.

Peebles golf course - creation of 1km of new hedgerow, associated “horse-shoe” planting and new native copses has created a dramatic boundary to the course and added shape and character to many holes.

Coatbridge golf course - areas that were formerly cut around tees are now left to grow as rough grassland. The area is dominated by wildflowers, particularly Lady’s Smock (Cardamine pratensis).

Cardrona golf course, Peebles shallow wetland scrape for attenuating surface runoff from adjacent playing areas, rapidly developing into valuable floodplain wetlands for amphibians and aquatic invertebrates.

At Southerness golf course a successful programme of bracken control has protected traditional character of links / heathland course and conserved the important grassland and heathland habitats.

One common theme for all of these examples (of which there are of course a great many more), is that those responsible recognise that golf course management is not simply about the tees, greens and fairways. It is about the management of the golf course as a whole - and recognition that golf facilities are stewards of the environment. In these cases each facility has combined benefits to the golfer and to wildlife with just a little extra thought.

So, what is your Club doing that benefits biodiversity?

The future of Scotland’s Water

New laws to cover all aspects of water use in Scotland have been passed.

The Water Environment and Water Services (Scotland) Act 2003 will now be implemented through a series of further regulations. The legislation aims to protect the water environment by

- Preventing its further deterioration and protecting and enhancing its status
- Promoting sustainable water use
- Enhancing the protection and improvement of the aquatic environment through specific pollution control measures
- Reducing and preventing the further pollution of ground waters; and mitigating the effects of floods and droughts

Over the next few years, the Scottish Executive will establish regulations covering many activities. The following are of particular relevance to golf clubs.

Point sources and diffuse sources of pollution

- within the development of River Basin Management Plans, SEPA will have greater powers and resources to control and monitor the influences of various land uses on water quality. It is likely that golf clubs will be approached to contribute to these plans, and in so doing may be asked about their fertiliser and pesticide usage in an attempt to evaluate golf’s potential impact on water quality.

Engineering works in the water environment

- tighter regulation of works in water courses will apply. Some form of permission will have to be obtained from SEPA for any engineering works in a watercourse or within the aquatic environment, which alters the river channel or wetland.

Water abstractions - golf clubs which abstract surface or sub-surface water for irrigation will be required to obtain abstraction licences (water use licence), as is currently the case in England and Wales. As with other regulatory regimes described above, a cost will be attached to applications and administration of the licences.

Impoundments - where water is impounded (i.e. a reservoir or lake is created) either to support irrigation or to create a water feature on the course, then this will need an impoundment licence (water use licence). As with other regulatory regimes described above, a cost will be attached to applications and administration of the licences.

It is anticipated that during 2004 a range of secondary legislation will be developed to provide mechanisms in Scotland. Some of this will relate to exactly what land uses and issues are to be included in all River Basin Management Plans. The abstraction control regime will be set out in secondary legislation.

The Act requires SEPA to establish River Basin Management Plans with more detailed programmes and sub plans for particular sub basins, sectors and water management issues. These will be led by SEPA, but will develop in consultation with all stakeholder bodies, which may include golf courses, within the defined area and will seek to establish:

- the current status of all water within the defined catchment;
- the types of land management and development issues ongoing (human activities);
- the risks posed by those operations / activities; and
- measures to minimise those risks to ensure the overall aim of high status water quality is achieved.

So, what should golf clubs do now?

The process of establishing the secondary legislation and the River Basin Planning system will take some years to evolve into the fully comprehensive structure required, and although this is early notification, we will strive to keep you updated as more details emerge.

At the present time we are awaiting the production of regulations which roll out the Act at a local level. Already a small number of River Basin Plans are in development. The River Annan catchment has been developed along with the Loch Lomond Basin and the River Spey. In each case golf clubs are being asked to participate and provide information to help assess any positive or negative impacts of course management within the wider catchment. We would encourage all golf facilities to participate openly and proactively in discussions over individual catchment management plans.

On a broader note, the Bill will give powers to Ministers to define individual pollutants or groups of pollutants that present a significant risk to or via the aquatic environment, including those on the European priority list. It will also give Ministers powers to define specific measures against the pollution of water by these substances.

“Pest”-ered by climate change?

By Steve Isaac, former Area Manager for Scotland & Ireland, STRI (now with the R&A)

This is the latest in a series of articles on the impact of predicted climate change on golf courses in Scotland. Let’s just remind ourselves of the main climatic effects we are likely to see over the decades through to 2080, as published in the Government document entitled “Climate Change Scenarios for the United Kingdom”.

- Average temperature may increase by approximately 1.5ºC-3.5ºC.
- Summer temperatures may increase more in the southeast compared to the northwest. There will also be more ‘extreme’ high temperature days.
- This increase in temperature will increase the ‘thermal growing season’. Each degree of annual warming causes a lengthening of the thermal growing season of about one to three weeks. Clearly this will have implications for grass growth and subsequent maintenance operations.
- Winter rainfall is predicted to increase by between 10-35%.
- Summer rainfall is predicted to decrease by between 35% and 50%.
- Higher temperatures and lower summer rainfall is predicted to reduce average soil moisture by up to 40%.
- High winds may increase during the winter months, and storms may become more frequent and extreme.

As the life cycle and well being of most pests and diseases is related to climate, what impact will these predicted changes have on the incidence of damage through pest and disease attack on our golf courses?

Increased disease attack?

There is already evidence that we are seeing more pests and diseases on our golf courses. The wet and sometimes humid weather we have experienced through the summer and the milder winters is an ideal breeding ground for familiar diseases such as fusarium patch. There are a number of diseases that appear more often in wet conditions:

- Fusarium patch disease (Microdochium nivale).
- Anthracnose (Colletotrichum graminicola).
- Take-all patch (Gaeumannomyces graminis).
- Yellow tuft (Sclerophthora macrospora).

Most Greenkeepers will be familiar with the first three on this list but yellow tuft is becoming a fairly regular visitor to golf greens, generally restricted to low areas that retain more surface water. When the ground dries the disease disappears with no real damage.

Fusarium and take-all seem to be occurring more often on green surrounds, where there is more thatch and longer grass that holds surface water longer than the close cut greens. We have also seen an increase in take-all attacks on Poa annua, this from a disease that all the UK textbooks consider to be restricted to bent grasses.

There has been more red thread (Laetisaria fuciformis) throughout the golf course, being seen on Poa annua as well as ryegrass and fescues. In some cases we have seen the apparent anachronism of active red thread and fusarium scars on the same piece of turf at the same time!

Fusarium and red thread are often seen year round, whereas previously the former was considered an autumn/winter disease and the latter only a summer one. Take-all activity is evident through much of the spring to autumn period now, not just confined to the months of July and August as often recorded in texts. Type 2 and superficial fairy rings pop up late autumn and late winter/early spring, again outside their “usual” seasons of activity.

There have been more reports of rust diseases on turfgrass and dollar spot has been identified on grasses other than fescues.

Not only are we seeing more outbreaks of disease but certain diseases are showing different symptoms to that commonly recorded in the past. For example, the classic symptoms of fusarium patch disease have been augmented by variations to type.

A greater variety of disease?

There have also been confirmed reports of unusual fungal disease incidence. These too are a consequence of climate change and tend to be more difficult to control as initial diagnosis of the problem is not always accurate and delayed treatment can make control more difficult. So, let’s run through some examples of “new” diseases that have appeared in the UK over the last 5-6 years.

- In recent times we have occasionally seen small patches of white leaved grass to golf greens. These have, generally, appeared after periods of humid weather, causing the plants to bolt (abnormally elongate). This phenomenon has been seen to perennial ryegrass cultivars as well as to annual meadow-grass on golf greens. Many Fusarium fungi are known to produce excessive gibberellins, which are growth hormones and this could be the cause of the abnormal growth.
- In the summer of 1998, the turf on greens at a golf course in the Midlands of England was lost in irregular patches. Bipolaris sp. was identified as the fungus causing the damage. This is similar to Drechslera sp., which is commonly found causing leaf spots and can develop into “melting out”.
- In August 1999, a sample was sent to the Pathology laboratory at STRI of diseased Poa annua. The lab identified Fusarium culmorum as the causal agent, the fungus that develops symptoms referred to as “fusarium blight”, which is a foliar blight, crown and root rot of turfgrasses worldwide.

Pests are on the up as well

There has been quite a lot written about nematodes in the turf management press over the past 2-3 years. Nematodes are microscopic round worms, generally between 0.5 mm and 2.0 mm in length. Nematode effects on turf can result in poor colour, the grass looks in a stressed condition, and damage usually occurs in irregular patches. There is no chemical control but managing stress to retain good turf vigour can limit nematode damage significantly.

The direct damage done by nematode attacks is not all you need to be concerned about, as it can lead to other problems. For example, the fungus that causes anthracnose in annual meadow-grass needs a senescent area of grass root/stem to infect and damaged areas left by nematodes may provide entry points.

We are all aware of the increased worm casting activity in wetter conditions but insect larvae that feed on grass also seem to be on the increase. Every year, we are warned about a plague of leatherjackets by one of the companies that sell a chemical that controls them. Fortunately, these dire warnings do not seem to have come to fruition as of yet, but there do seem to be more incidences of Bibio sp. larvae, with fever fly, frit fly and St. Mark’s fly all in evidence.

Chafer grubs are a major problem in some areas of England, with no effective chemical control. More worrying is that they are heading north. Chafer grubs damaging turf were unheard of in Scotland, thought to be due to our colder winters. Infestations severe enough to cause damage have yet to be seen, but the chafer grub has arrived with one individual identified on a course last year.

Be afraid...

Every Greenkeeper is aware of the increasing lack of a chemical option for pest and disease management. In many ways this is a good thing in that it ensures best practice is cultural-based and that reaching for the bottle has to be considered the last resort. However, if our climate is changing as predicted then the environment will increasingly favour fungal growths and pests that can cause damage. Sometimes cultural management may limit damage to an acceptable level, but this “acceptable” level is likely to be higher than that currently considered tolerable. Golfers must be prepared for this possible scenario.

Be very afraid...

For those who are still sceptical over the whole issue of “Global Warming”, the changing nature of disease and pest activity on UK golf courses is compelling evidence that the climate is changing. Just run through the list of environmental conditions that favour many of the diseases listed:

* Humid atmosphere.

* Moist turf surface - increased annual rainfall.

* Mild winter temperatures.

* Higher summer temperatures.

Exactly the sort of conditions we can expect from the climate change predictions.

This work, undertaken by the STRI, was commissioned by The Scottish Golf Environment Group, in conjunction with the Scottish Golf Union and Scottish Executive, as part of an effort to raise awareness of the impacts of climate change on golf course management.

Steve Isaac now works for the R&A as Secretary to the Golf Course Committee. His former colleague Richard Windows is based in Glasgow ((0141 632 0805 or e-mail richard.windows@stri.co.uk).


Anthracnose scars


Fusarium spots


Mad tiller disease


Crow damage after fever fly

Looking after our wildlife

With over 540 golf courses in Scotland, covering around 30,000 hectares of land and comprising large areas of sand dunes, heathlands, woodlands, parklands, grasslands and wetlands, golf has an important role to play in the conservation of biodiversity. But just what does an individual course contribute, how does this compare to other forms of land-use such as agriculture or even nature reserves, and what types of conservation management are of most benefit to wildlife?

A study, funded by the Scottish Executive through their Biodiversity Forum, is underway to assess the impact of golf course development and management on local wildlife.

This year, three courses - The Dukes, Elmwood and Linlithgow - have agreed to take part in a new project aimed at finding out how their development and existing management plans have affected wildlife. An ecologist has been commissioned to undertake these detailed studies.

With a substantial amount of data recorded over previous years, the new surveys undertaken this year will allow comparisons to be made and should provide a good indication of management actions which have directly benefited animal, bird and plant life.

do a little change a lot

SCOTTISH BIODIVERSITY FORUM

Grants for practical projects

The SGEG has again received funding from Scottish Natural Heritage for practical projects on golf courses.

We have a small fund available over the coming six months to help clubs implement a wide range of works. These can include activities such as tree and shrub planting, hedgerow planting and management, heather management, wildlife surveys, environmental interpretation, pond creation and pond enhancement etc.

The grants are awarded on a discretionary basis, covering up to 50% of the total project cost, with a maximum grant of £2,000. If you are interested in finding out if your ideas are eligible then do get in touch.

Bag your Golf Bag

If you are looking for information or advice on a wide range of environmental issues then why not pick up your free SGEG Golf Bag?

Each bag contains details on topics such as tree planting, coastal erosion, wetlands, green office guides, producing management plans, alongside case studies of good practice.

To find out more or to get your hands on your Golf Bag contact Fiona McIntyre on 0131 660 9480.

New Course Management Guides

Three new books, commissioned by the R&A, are now available from STRI. Gorse and its Management, Bracken and its Management, and Rhododendron and its Management provide a valuable technical insight into the best management practices for managing these species, indicating how management programmes can be tailored to the golf course. Copies are available from Linda Gallagher on 01274 518908.

New look for the web

The new look SGEG website is now on line, boasting a wide range of information and downloads on many aspects of golf course and environmental management.

The site has been upgraded with the help of the Scottish Executive and offers practical guidance on management planning as well as technical information on issues such as nature conservation and waste management. You can also access current and archive copies of Surround.

So, click on **www.sgeg.org.uk** and take a look!

SCOTTISH Golf Environment GROUP

The Stables, Dalkeith Country Park, Midlothian EH22 2NA
Tel: 0131 660 9480 Fax: 0131 660 9490
Email: scotgolf.wildlife@virgin.net
Website: www.sgeg.org.uk