ed to ensure that a hole is enhanced by it. It can be completely out of play, and solely for the benefit of wildlife and the landscape, or it can be brought into play to create challenge and interest on the course. Position may be determined by factors such as drainage problems and the desire to alleviate those. However, if it is intended to enhance the course, it will need to be carefully positioned, designed, constructed and managed to ensure that it becomes an asset to the course, and of benefit to wildlife.

Ponds can be important elements of the drainage system on the course. They can provide localised catchments for flood water, acting as a sink to draw excess water from playing areas. Excavation of the pond will provide topsoil that can be used to build up and regrade in other wet spots, further alleviating the problems. When ponds are created in areas that are already wet, they may not need to be lined to hold water. However in well drained or seasonal wet areas a liner will be necessary. Butyl is the most common material used, and is usually suitable for most situations. Other possible liners are heavy duty black plastic, a clay based material known as bentonite and concrete. Plastic usually has only a short life span often to 15 years, whereas butyl is often guaranteed for up to 50 years. Bentonite is expensive but can be useful in situations prone to vandalism or other damage as it is self sealing when punctured, and repairs can usually be made successfully. Concrete is not generally recommended, as it is difficult to ensure that it does not leak. If leaks do occur repair is difficult and usually requires a complete reconstruction.

Creating a new pond provides the opportunity to incorporate the shallow margins, irregularly shaped edges, and variety of depths which are ideal for wildlife. Wildlife ponds do not need to be deep (one metre at most), unless of course they are also required for irrigation or drainage. Introducing appropriate plants into the pond will enhance it further, helping it to mature, soften and become integrated into the surrounding landscape. Native species such as branched bur-reed and bottle sedge, along with attractive flowering margins such as Purple Loosestrife, Meadowsweet, Marsh Marigold, Yellow Flag, Ragged Robin and Water Lilies will all improve the pond for wildlife and create an attractive feature that will enhance the course. Care should be taken not to plant inappropriate species. Many ponds have become accidentally infested with vigorous aliens such as Canadian pondweed, Floating Pennywort and New Zealand Swamp-stonecrop, that choke out native species. These usually arrive accidentally when plants are introduced from garden centres. It is always best to acquire plants from natural sources (with the landowners permission) or reliable native plant suppliers specialising in aquatics. Like all habitats it is important to manage ponds well. Over management, through clearing out too much of the pond too often, will reduce plant, invertebrate and amphibian populations. Long term lack of management can lead to silting and drying of a pond.

All wetlands need protection to ensure they are not polluted or damaged. There is much that golf courses can do to enhance and protect their wetlands for their value to wildlife and golfer alike. One of the highest risks to any wetland on a golf course is the possibility of accidental contamination from chemical applications on the course. This most commonly occurs through runoff from treated surfaces or leaching of chemicals through the soil from treated areas into wetlands. There are two ways to reduce chemical pollution of water bodies.
No-spray zones can be created around and alongside water bodies and water courses. Buffer strips of rough vegetation should also be allowed to develop alongside ponds and water courses. These measures help to protect the pond from direct contamination and runoff, and help to give bumps and ditches more character and definition, contributing to the overall interest of the course. Certainly, some banks will need to be more intensively managed but those areas should be minimised, also saving on time and management effort.

Vegetation also helps stabilise eroding banks by increasing soil binding. There will be places where such strips are not possible e.g., where bumps cross fairways, but careful adherence to the no-spray zones, and allowing rough vegetation to develop immediately the bump is out of play will all help to reduce potential problems.

Herbicides and pesticides can affect wildlife directly, through toxicity to the plant life and invertebrates, that are the basis of the food chain. They can persist in water bodies, adversely affecting amphibian reproduction and even causing deformities. They have a cumulative effect, leading to high mortality in animals at the top of the food chain. Fertilisers can cause unsightly 'algal blooms', which are undesirable ecologically, as they can strip out the oxygen from the water causing drops in invertebrate populations and sometimes even fish kills, but these are extreme cases and careful management can avoid such problems.

Golf course ponds and wetlands can enhance the course for both golfer and wildlife, but they do need to be well designed and managed to be a long term asset to the course. Importantly what is best for the clubs and golfer in terms of pond creation and management is usually best for wildlife, thereby resulting in a better playing environment for all.

Furthermore it may be possible to obtain funding for pond creation or enhancement through the Scottish Environment Protection Agency, or Scottish Natural Heritage, where these ponds will benefit wildlife as well as the golf club.

If you have any questions about ponds and their management please contact Fiona McIntrye or Jonathan Smith at: The Scottish Golf Course Wildlife Group, The Stables, Dalkeith Country Park, Dalkeith, Midlothian, EH22 2NA Tel: 0131 660 9480.

Fiona’s email: scotgolf@wildlife36.freeserve.co.uk

Jonathan’s email: scotgolf.wildlife@virgin.net
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Six of the country's top men talk about the grasses on their courses and plans for the future...

Grasses
Compiled by Malcolm Huntington MBE

Name: Ian Menzies
Region: Scotland
Course: Drumoig Hotel and Golf Resort, Leuchers, near St. Andrews.
Course Type: Parkland (18 holes plus Scottish National Golf Centre, approx 12 holes)

Name: Richard Hollingworth
Region: Northern
Course: Rudding Park, Follifoot, Harrogate
Course Type: Parkland
Staff: Head greenkeeper plus five, plus casuals

Name: Kenny Mackay
Region: Midland
Course: Merriott Forest of Arden, Meriden, nr Coventry
Course Type: Parkland (36 holes)
Staff: Course manager plus 23, plus mechanic

Name: Don Wilson
Region: South East
Course: Dyrham Park, Galley Lane, Barnet, Herts
Course Type: Parkland
Staff: Course manager plus six

Name: Steve Evans
Region: South West & South Wales
Course: Yelverton Golf Club, Devon
Course Type: Moorland
Staff: Head greenkeeper plus 4

Name: Emmett Curran
Region: Northern Ireland
Course: Downpatrick Golf Club, Northern Ireland
Course Type: Parkland
Staff: Course manager plus two, plus mechanic

What grasses do you have on your course - greens, tees and fairways?

On greens, tees and fairways we have 40 per cent slender creeping red fescue, 40 per cent chewing fescue, 20 per cent tenuis bent (Highland brown top bent on fairways).

Fescue, and bent on greens, plus a lot of natural grasses still there including 50 per cent meadow grass. Tees are predominantly rye grass with some smooth stalked meadow grass. Fairways are a mixture of fescue, predominant rye grass, plus smooth stalked meadow grass.

Our greens are a mixture of poa annua and bent, the tees are dwarf rye grass and the fairways a mixture of bent, rye grass and poa annua.

A mixture of bent and poa annua on greens, though I try to eradicate poa as much as possible; dwarf rye on tees natural rye on fairways which was originally agricultural land.

Bent and annual meadow grass on the greens and we have oversown with fescue in recent years. Tees - dwarf rye grass, natural bent. Fairways are natural moorland with bent, fescue and annual meadow grass.

On greens we have meadow grass and a little bent. Tees - dwarf rye grass and fairways meadow grass and bent.
**What would be the ideal grass types you would include in your course?**

Our course is only five-years-old and as I was involved with the construction I am very happy with the existing grasses.

**What attempts are you making to change the grass type profile on your course?**

None whatsoever as we have had excellent results with the mix we originally decided on, supplied by Barenbrug.

**What are your views on poa annua - learn to live with it or try to eradicate it?**

I would learn to live with it. Poa annua is kept at an absolute minimum on our course by verti-cutting as often as we can.

I believe that the grasses currently on the market are excellent when it comes to the battle against disease. Perhaps for sand based greens like ours there will be a development with resistance against drought and close mowing - we are cutting at 4mm.

**What qualities would you like to see from new grasses which are currently in development?**

Finer grasses to have better winter tolerance and also grass to have better recovery.

Research has been very good over the years and I have tried a number of new grasses. I am not looking for anything special in the future.

**On greens I would like creeping bent and the rest of the course dwarf rye grass with a little fescue in the rough.**

Predominantly bent on greens with a touch of fescue, dwarf rye grass on tees as it is hard wearing with a quick recovery and bent fescue on fairways.

We have spent a lot of time on this. Greens are overseeded with bent twice a year and tees overseeded with dwarf rye once a year. Fairways are overseeded with dwarf rye and smooth stalked meadow grass once a year.

On the fairways I am trying to get a more evensward with rye grass, fescue and bent. I have a lot of poa anna on the back nine of the Arden course and so I am hopeful the introduction of the others will do the trick.

We can't eradicate it. If I tried to do this on the greens the overall quality would drop. I believe in trying to manage what you have and make the best of what you have got.

On the fairways we overseed with bent and fescue each year and greens are overseeded twice a year with bent and fescue mix. We have 50 ponies on the course who eat the greens which we top dress 20 times a year because of this problem.

We overseed tees each year with sand and soil mix and dwarf rye grass. On fairways we overseed with bent and fescue each year and greens are overseeded twice a year with bent and fescue mix. We have 50 ponies on the course who eat the greens which we top dress 20 times a year because of this problem.

Some which resist disease, particularly fusarium. Someone will make a fortune if they can do that. Also one which is drought resistant.

Greens - quick recovery and less susceptible to disease and drought. Tees - hard wearing and quick recovery. Fairways - hard wearing, quick to recover and cope with wet conditions.

On greens I would like creeping bent and the rest of the course dwarf rye grass with a little fescue in the rough.

Definitely learn to live with it. If your management programme is dedicated to meadow grass your course will be fine.

Disease resistant and compact growth. I can't remember any drought - we have more water than most! I would also like to see a grass developed which is more tolerant to close mowing. We cut at 4mm on our greens.
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Effingham Golf Club,
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Scott MacCallum travelled to Islay to talk with the Machrie Head Greenkeeper, Simon Freeman, about living and working on an island.

Island Life

Below: Simon, seated centre, has been blessed with a talented hard working team.

Machrie was voted 56th in the most recent Golf World rankings. One visit proves why.

Think about life on an island and you might conjure up images of Robinson Crusoe; Sue Lawley; Father Ted or indeed the stars of Castaway or Survivor. But how would you fancy managing a golf course on a remote Scottish island?

Simon Freeman did just that. Two years ago he moved from his home town of Crieff to take over as Head Greenkeeper at the Machrie Golf Links, on the island of Islay off the West coast of Scotland, and he hasn't regretted his decision one bit.

Access to the island, which is on the same latitude as Glasgow is not always easy. The half hour twice daily flight from Glasgow can often be delayed or even cancelled by fog or low cloud or the ferry which sails from Tarbert, itself a three hour drive from Glasgow But once there you can appreciate why people make the effort. The beauty of Islay is stunningly natural with wonderful beaches and friendly islanders.

"This is as good as it gets as far as I'm concerned," said Simon, as we sat discussing his life and work shortly after returning from a strictly alcohol-free lunch in the restaurant of one of the island's six distilleries.

"I'd been over here once before I applied for the job. The son of the previous owner of the Machrie was an assistant pro at Crieff Golf Club..."
and I came over with a group to play the course. That one visit was enough to convince me that if the job came up I should go for it," said Simon, who began his career as an apprentice under Jimmy Kidd at Gleneagles.

While the quality of the golf course quickly won over the four handicap - it was ranked 56th in the UK in the most recent Golf World rankings - the complications of island life, and their impact on his course maintenance procedures gave him something into which he could really get his teeth.

"We have to source our top dressing from between the peat bogs and the sand dunes at the top end of the island, but while the chemical analysis of the material shows it is perfectly suitable the particle size is really too fine to be used as a top dressing. We've run into problems with it. When we get a period of dry weather after we've top dressed we find that the surface starts to seal," admitted Simon.

"If the course was on the mainland we'd simply get the rootzone which was best suited to growing healthy bent and fescues. On the island however the cost is prohibitive to get lorry loads of top dressing coming over by boat, so we have to use what is available."

One option is sand from nearer the shore which is sharper, but they have found that the pH and the calcium content is too high. However it has created something of a puzzle. "Strangely although the pH is technically too high to grow healthy grass it appears to be the tees and greens which have the sand off the shore blown over them which seem to be our healthiest," mused Simon.

The other main area of complication resulting from island living is machinery maintenance. "I've got a basic grounding in mechanics and some of my guys are also quite good but once something technical goes wrong it becomes very difficult to get someone to fix it. When it comes to grass cutting machinery, the mechanics on the island are no better than us so we have to get someone over for it, but you can't just phone up and expect someone to be there within two hours."

Such a scenario perhaps only happens two to three times a year but always at an important time. "We can be looking at the machine being down for a week instead of a day as it would be on the mainland."

However, Simon does find that dealers are very good at talking them through problems over the telephone. "A.M. Russell's and Scottish Grass Machinery are good at this and it is a great saving. They are also excellent at getting parts to us."

Simon also tries to ensure that he has machinery which can do more than one job so he has cover if machines go down. "I have tried to work out which machinery would cover my back - for example being able to use cutting heads on more than one machine so if one breaks down the heads can be transferred over and the job still completed."
The main disease problem the team has to contend with is dry patch.

“We have a build up of thatch on the greens and a build up of waxy material which caused a hydrophobic layer on the greens,” he explained.

“It is a problem which isn’t at the front of greenkeepers’ thinking as much as it was in years gone by, but in our situation, where we haven’t got the necessary aeration equipment or an irrigation system, it’s the scariest thing that happens to us.

“When it strikes, as it did recently, we have to go out with hand and aeration forks and fork up all the patches and then water them. We borrow a bowser from a neighbouring farmer, strap a pump to it and spray with a fire hose which is very time consuming and when it’s hot we can never really keep in top of it.”

Simon is already looking at longer term solutions.

Getting access to aeration equipment is the key and the lure of the island has proved useful in ensuring one of Simon’s contacts is a regular visitor.

“We have a very good relationship with Kevin Brunton, of Greentech Sports Turf, who has taken to the island to the extent that he is keen to come over with his aeration machinery and offer me any technical advice I might require,” said Simon.

“But we are going to have to think about purchasing aeration equipment soon because the situation is going to have to be tackled otherwise it is just going to get worse.”

They will also be installing a rudimentary irrigation system with a pump at each end so they can have a box at each green from which to hand hose.

Although only measuring 6,200 yards, the course, originally designed by Willie Campbell who also designed Brookline which hosted the 1999 Ryder Cup, doesn’t play short.

This is because it is laid out across the dunes rather than down valleys and long hitters often have to lay up between blind hills to give themselves the best chance of hitting approach shots close.

It has a reputation of being one of the very finest links courses and as a result does attract some of the more intrepid golfing pilgrims.

Indeed before I returned to the mainland I listened to three Americans starting their day with a breakfast table reading of text from a golf book extolling the virtues of the Machrie.

They displayed the same passion that the club’s own Head Greenkeeper has for the game.

“My father is an architect but his hobby is designing golf courses. He helped design the new holes at Crieff Golf Club about 20 years ago and he and I both had input into designing the new nine hole extension at Crieff Hydro, where I worked before coming here. I did the original plans and he touched them up for the final design. Golf course design is a great interest for him and it has turned into a great interest of mine.”

Those skills have been put to good use at the Machrie.

The team plan to build two new greens for the 12th and 14th holes as the existing greens are the least popular with the members and Malcolm King, the owner.

“The current greens, built when five new holes were required when the club lost land to farmland in the 70s, are on the tops of mounds while the original greens were in hollows. No one thought about irrigation in those days and put the greens in the wettest areas so they wouldn’t dry out in the summer.”

August 2001 Greenkeeper International 39
Machinery Inventory

Toro 2300D Triple Fairway Mower
Ransomes 160D with Greens units and verti-cut units
Ransomes 160 Petrol (used for spare due to island petrol prices 98p per litre!)
Set of Ransomes 160 tees units
Kubota 3800 compact tractor
International 484 tractor
Ransomes 20" Super Certes
Ransomes 20" G550
Saxon Baroness 22" with groomer
Set of five Ransomes Sportscutter gangs
2 Allent 218Si Flymos
Komatsu Strimmer
SISIS Auto-Rotorake
SISIS Supaturfman
Cushman Turf Tractor (Diesel)
Cushman Top-dresser
Richard Long Finishing Mower
Alfa Laval Skinny Spreader complete with Honda WP20X Pump and Fire Hoses for Irrigation
Honda 300 Quad Bike
Allman Boom Sprayer
CP20 Knapsack Sprayer
Two and a half tonne trailer

The other major development is the new nine hole par-3 course which Simon and the team have built.

“We wanted to build a mini replica of the main course complete with blind shots and run and bumps so we found a bit of unused links land and Ewan Logan and Bobby Brown, of the greenkeeping team, and I designed the course into it.

“We are currently at the stage where we are ready to put the final cut on six of the holes with the other three still to be built. The holes will be between 120 and 180 yards with two or three holes together so we would have wide fairways, to enable the children to play, and narrow necks into the greens so good golfers could face a challenge hitting into the greens,” explained Simon, who revealed that children get free membership of the golf club.

Before Simon, wife Catherine and young son Brandon - who has been joined by a brother, Bailey, since being on the island - arrived, Simon was told he might find it difficult to get people to work for him but he has found it to be the complete opposite.

“We have a good hard working team.”

That team also turns its hand to whatever work is required and had decorated the bar in which we were sitting as well as doing similar work on the Hotel's chalets.

That demonstrates the close relationship Simon has with Hotel Manager, Ian Brown, with whom he conceived and organised the Machrie Team Challenge which filled all the Hotel's chalets and half the hotel itself last year and was won by Gleneagles' greenkeeper, Simon Crawford and his team.

If Simon misses out on anything it is contact with other greenkeepers and he is keen to encourage greenkeeping colleagues to visit.

“It is prohibitively expensive for me to leave the island and keep up-to-date with current greenkeeping issues by visiting other golf courses so I do feel a little isolated but if any Section Secretary wants to organise a visit to the Machrie we’d certainly be able to sort out some sort of preferential rate for them.”

I can guarantee anyone who takes up the offer would feel it a rewarding experience.