The affordable golf course

17 November 2009

The R&A definition

"Optimising the playing quality of the golf course in harmony with the conservation of its natural environment under economically sound and socially responsible management."

Thursday 20th August 2009

The R&A, St Andrews

Search

Home | About The R&A | Rules | Championships | Golf Development | Course Management | Shop

Course Management

- Sustainability
- Playing Performance
- Environmental Stewardship
- Economic Performance
- Social Responsibility
- Best Course for Golf

Quick Links

- News
- Gallery
- Downloads and Free Publications
- Affiliated Golf Bodies & Golf Unions
- Contact Us

Course Management

Objective

The R&A Golf Course Committee's objective is to promote sustainable golf course development and management through the implementation of best practice.

Sustainability

The R&A definition of sustainable golf course management is:

Optimising the playing quality of the golf course in harmony with the conservation of its natural environment under economically sound and socially responsible management.

'The challenge for golf is to maintain course quality and playability while respecting and positively contributing to the social and natural environment.'

Peter Dawson
Chief Executive, The R&A

Featured products

Golf Rules in Action
The DVD will help to show how the rules work in practice
DVD available now

Featured Video

The Amateur

Watch Video

Golf etiquette

Watch Video

Course management - Windows Internet Explorer

https://www.bestcourseforgolf.org/

Course management

Deutsch | English | Español | Français | Italiano

Course management

Sign in | Register (optional)

Home | Greenkeepers | Administrators | Golfers | Sustainability | Environment | Case studies | Checklist | Benchmarking | News | Forum

Search site

For anyone who works on or uses a golf course

- Greenkeepers »
- Administrators »
- Golfers »

No need to register unless you are active in course management and want to use our benchmarking and self assessment tools.

Benchmarking

Golf clubs can measure their environmental, economic and social impact against themselves and others

- » Monthly and annual data
- » A selection of graphs
- » Printable annual report

See benchmarking...

The sustainability map | Benchmarking | Latest news | Case study

Benchmarking

Benchmarking is a tool your club can use to measure its performance over time and compare themselves to other clubs.

Discover more about benchmarking

Sustainability

The future of golf

Videos

Forums

- » Re: Re: Re: Re: Re: COURSE EXTENSION ...
- » Re: Re: who do the greens staff answe...
- » Re: Re: Re: Re: Re: COURSE EXTENSION ...
- » Re: USGA certification

See forums

The sustainability map

Find out more out best practice in sustainable course managment

See the sustainability map

Explore the R&A

Based in St Andrews, The R&A is golf's governing body and the organiser of

About the R&A | Rules | Championships | Golf development

The R&A definition

"Optimising the playing quality of the golf course in harmony with the conservation of its natural environment under economically sound and socially responsible management."

Sustainability is about your ability to adapt to the challenges posed by a changing world.

Economic sustainability - the challenges

- Achieving year-round playability
- Climate
- Pesticides
- Water
- Biodiversity
- Management priorities

What do you want from your golf course?

- Vision
- Strategy
- Economics


Golf Links, Carnoustie

Every successful business has clear, measurable goals

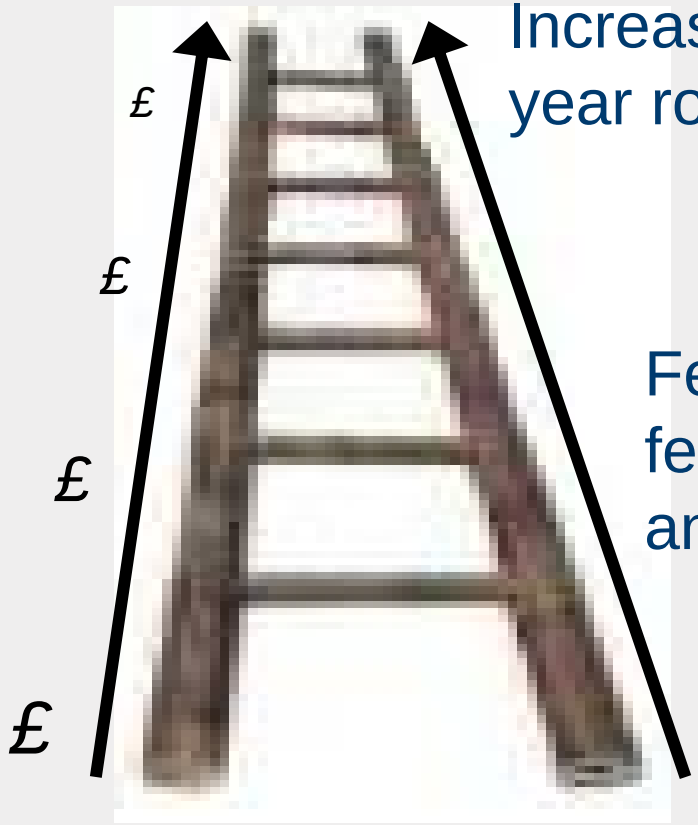
- Vision, strategic plan

An effective business plan helps to achieve these goals

- Communicate the goals
- Communicate the plan to achieve them

The ladder of sustainability

A better environment - increasingly dry, firm and airy



Increasingly better year round golf

Fewer chemicals, fertilisers, less water and disturbance

Unsustainable

The ladder of cool season grasses for golf greens in Northern Europe

Fewer inputs and less intensive maintenance

A healthier environment

Fine fescue

Browntop bent

(Velvet bent)

Creeping bent

Poa annua

Unsustainable

Healthier environment = Less cost and greater revenue

Sward improvement project

- 5 courses in England
- All inland (parkland, variable soils)
- 4 began in 2006 with significant thatch and virtually 100% *Poa annua*

Sward improvement project

2006:

- Thatch
- Disease
- High fertiliser and pesticide cost
- Problems with winter play

Sward improvement project

By 2009:

- Reduced thatch
- Reduced disease
- Reduced fertiliser and pesticide inputs
- Better winter playability

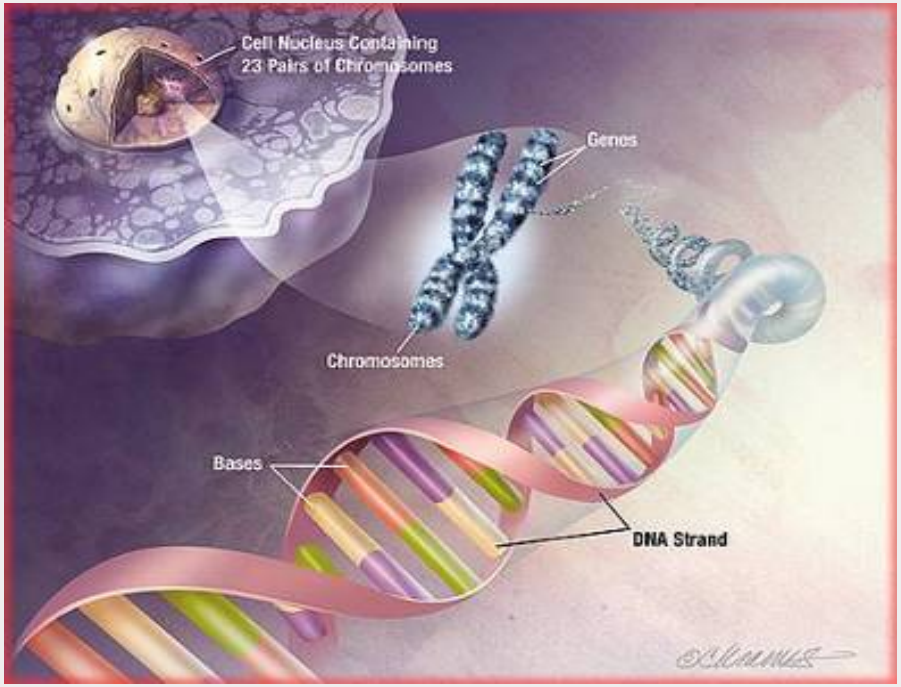

R&A


R&A

Sward composition as an indicator

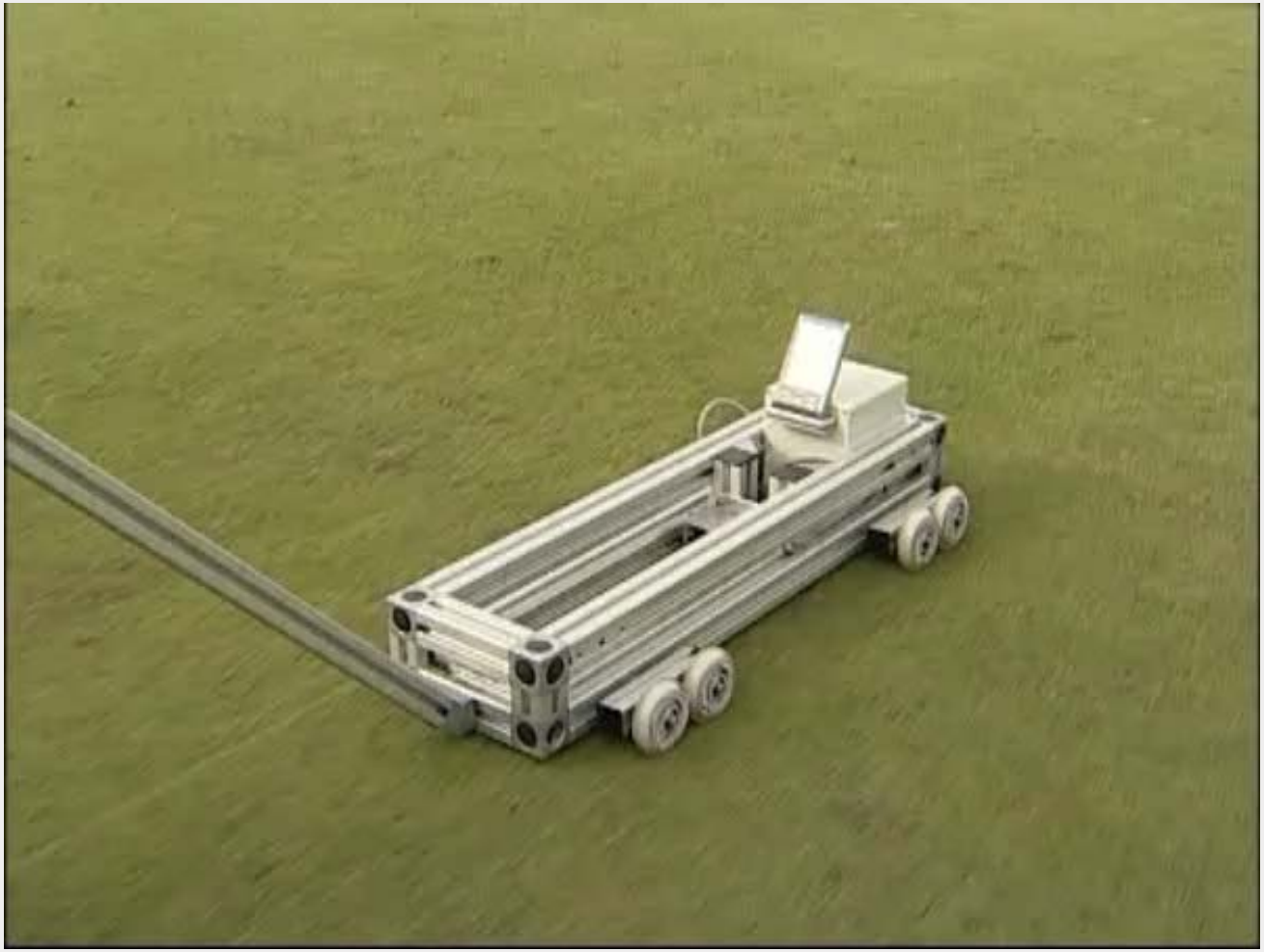
DNA of grass

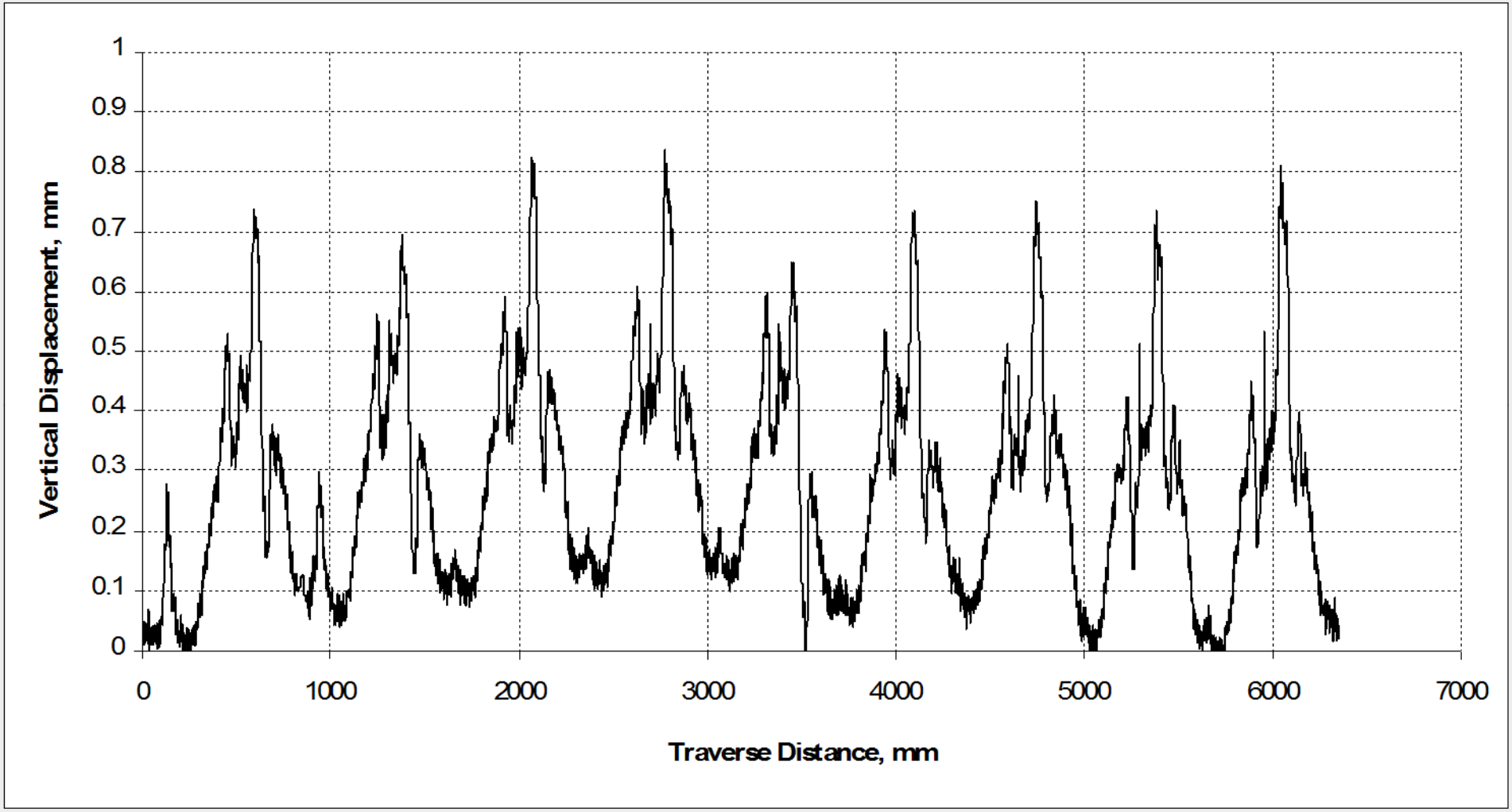
- Measures composition of swards
- Current techniques inaccurate (visual) or too time consuming (point quadrat)

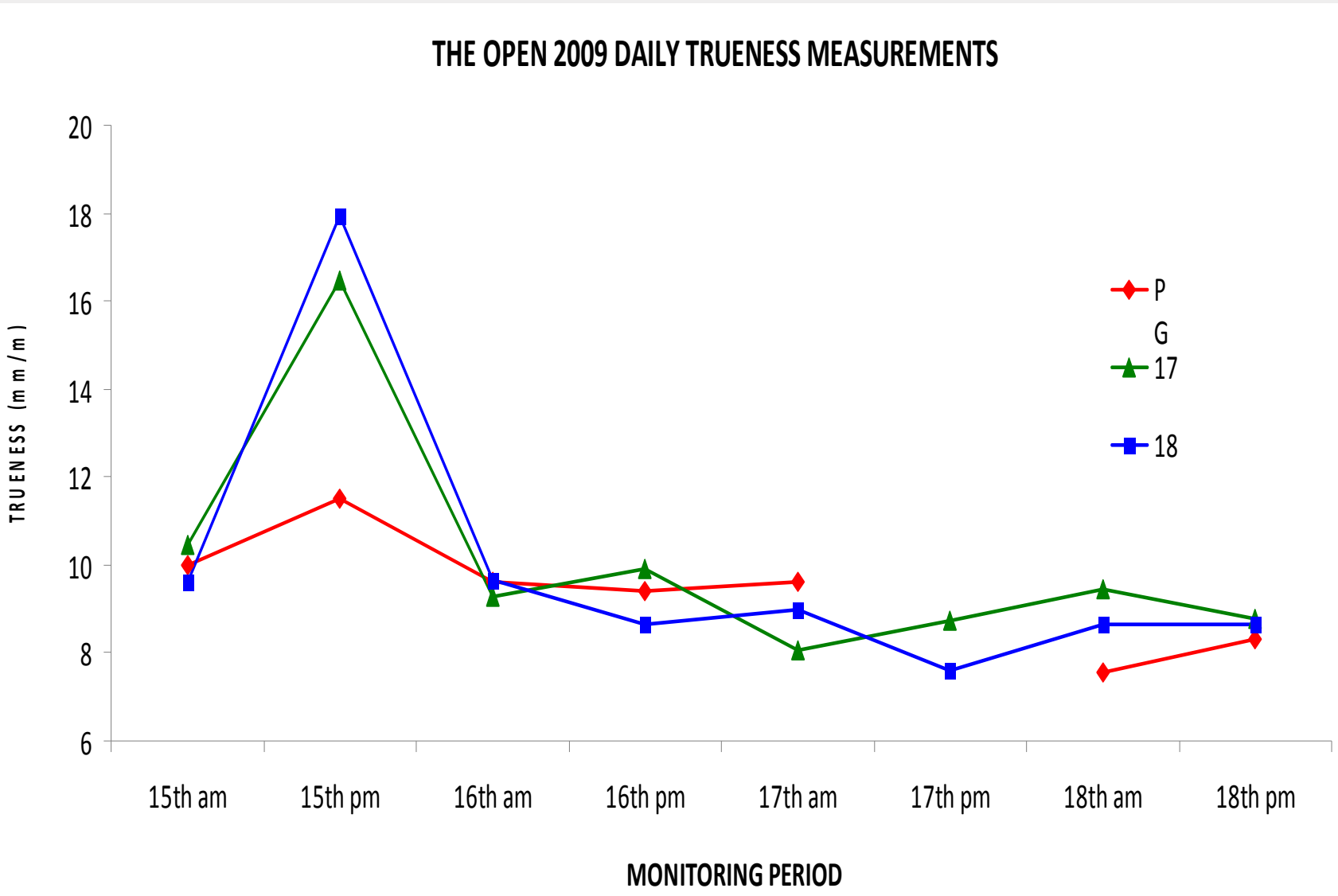


Playing performance

- Trueness
- Firmness
- Speed




Vertical Displacement, mm
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
Traverse Distance, mm


THE OPEN 2009 DAILY TRUENESS MEASUREMENTS
TRUENESS (mm/m)
20
18
16
14
12
10
8
6
15th am
15th pm
16th am
16th pm
17th am
17th pm
18th am
18th pm
MONITORING PERIOD
P
G
17
18

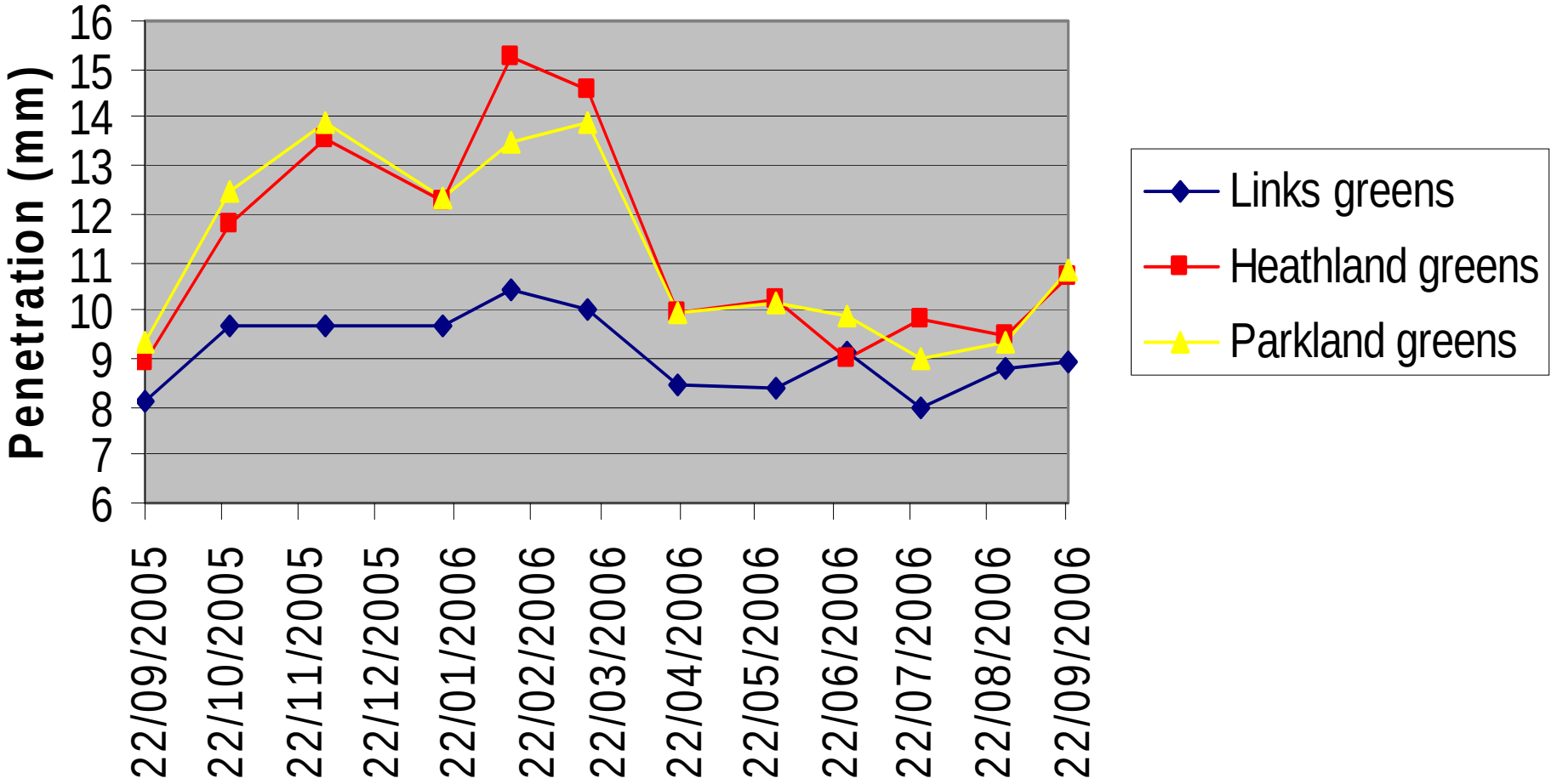
Turf reaction to full shots is important

There is a balance between:

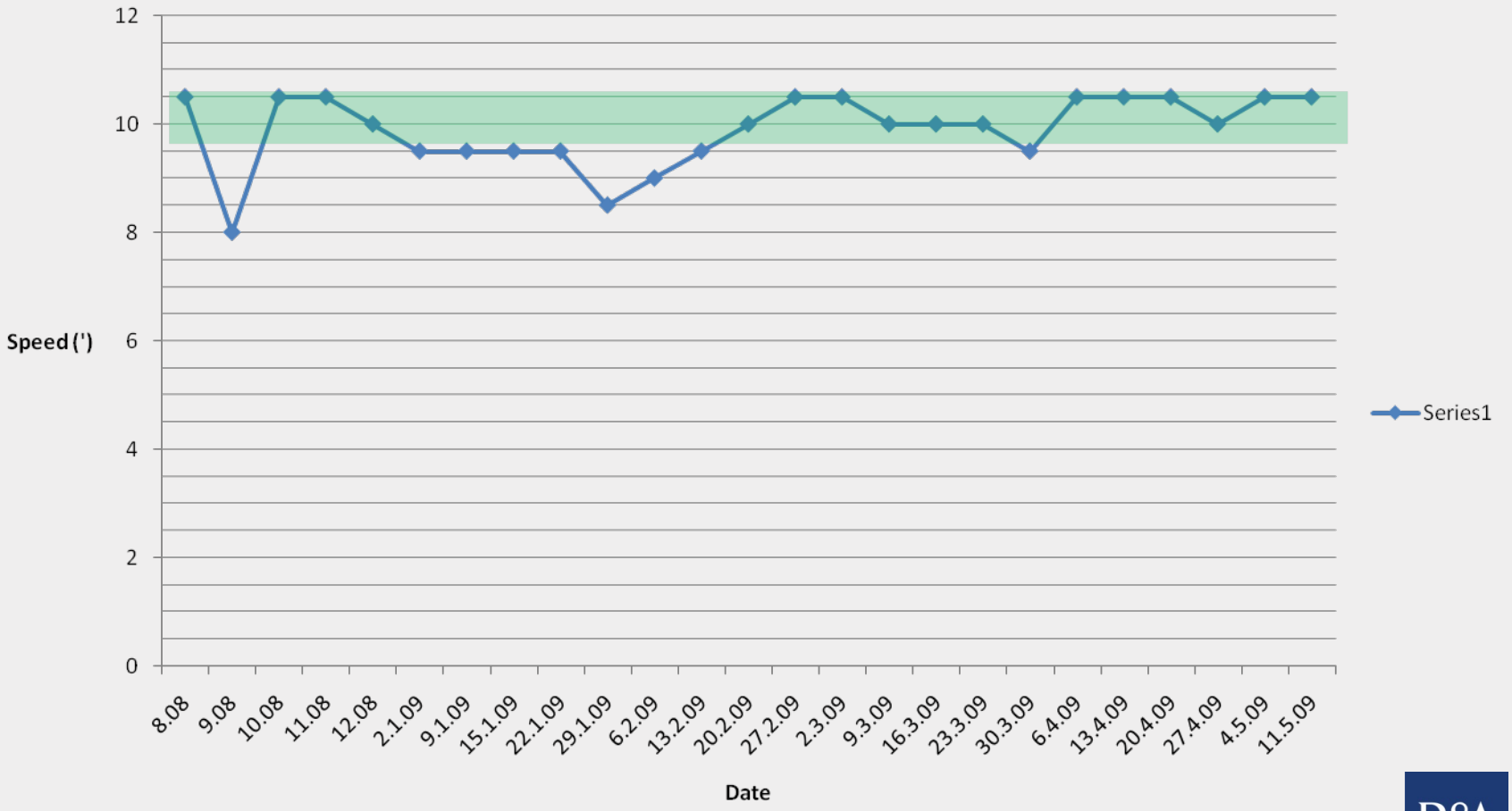
- Rebound speed
- Reaction to spin
- Firmness

We have measured over 80,000 locations.

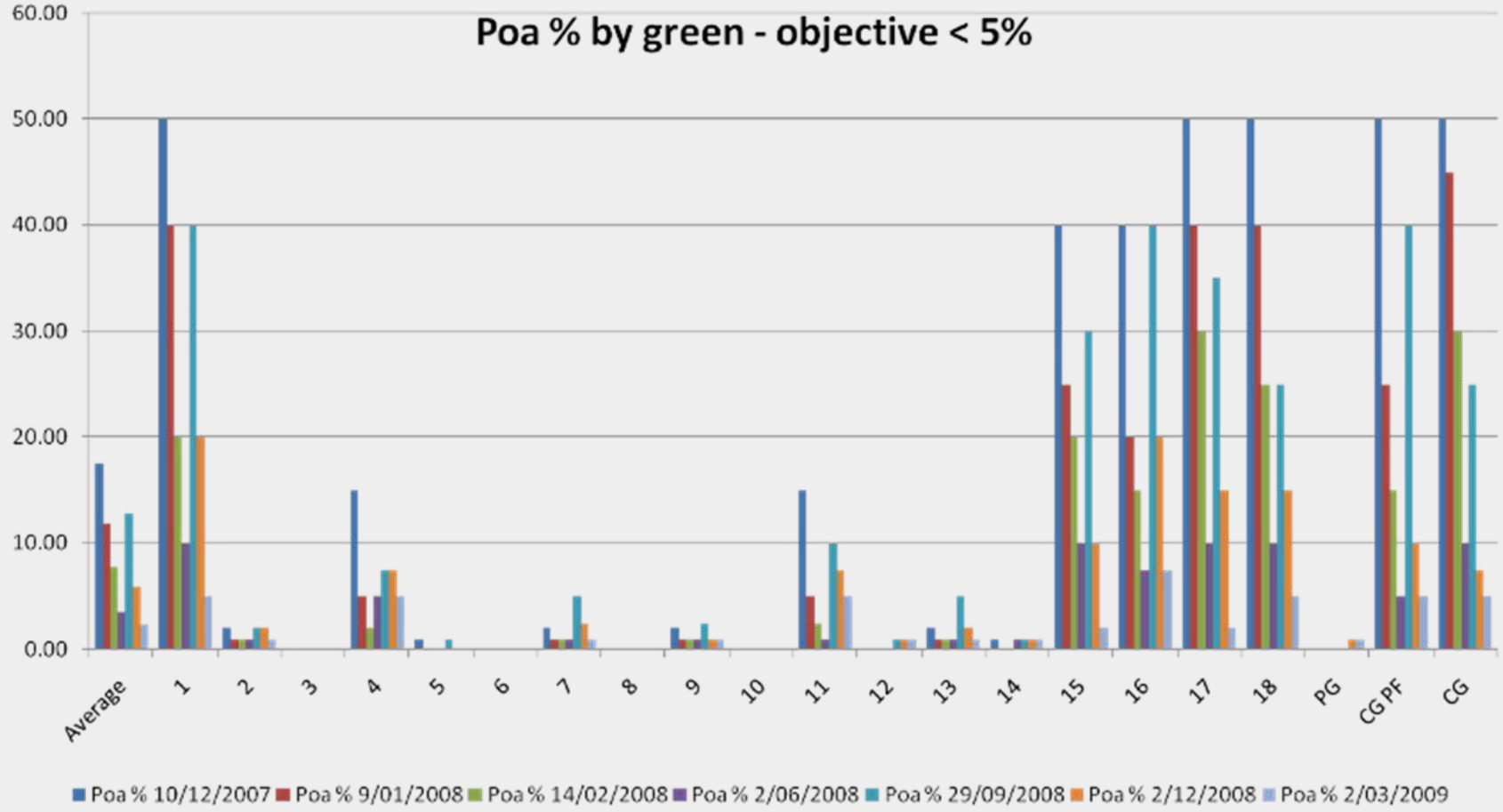
Green penetration (mm)



Course Quality Objectives



Courtesy of Daryl Sellar, AGCSA



Courtesy of Daryl Sellar, AGCSA

Coping with climate change

- Better drainage
- Better drought tolerance

Coping with climate change

- Drier, firmer and healthier turf
- The right grasses

Turfgrass
- Species selection and management
- Cool and warm season grasses
- Turfgrass species information
  - Cool season grasses
  - Warm season grasses
- Species selection – case studies

Course maintenance

Course set-up

Construction

The 'Rules of Golf' and course management

Why benchmark

Why self-assess

Advice and research

Cool season grasses

Fescues

(*Festuca rubra* ssp. *commutata*) and slender creeping red fescue (*Festuca rubra* ssp. *litoralis*, also known as ssp. *trichophylla*)

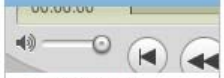
- Suitable for use throughout the golf course. Native of links, chalk downland and heathland sites and indigenous to established low input grassland, i.e. to many fairways and roughs on golf courses.
- Low inputs: 50 kg/ha N per year or less on greens to established turf, drought resistant, potentially zero pesticide. Acid or alkaline soil conditions to the extreme range lock up nutrients and this can work to fescues' advantage.
- Susceptible to red thread and dollar spot diseases but these are considered to, usually, be of cosmetic nuisance value.
- Tolerant of occasional and short term salt water contamination, and can tolerate salt concentration of up to 3,000 microSiemens/cm.
- Will benefit from regular mowing at or above 5 mm.
- Slow growing and most cultivars discolour to tan during prolonged dry weather.
- Produces fibrous thatch.
- Requires free draining soils and good access to light and air.
- Low cost and the most environmentally sustainable cool season grass.

The fescue grasses which are indigenous to dry, infertile sites can be maintained through appropriate management and low nitrogen fertiliser input is critical to this achievement. Mowing height is another key element to encouraging fescues; regular cutting below 5 mm will lead to a loss of this species.

Browntop bent

Benchmarking

Show me more

Videos

Show me more

Sustainability map


Show me more

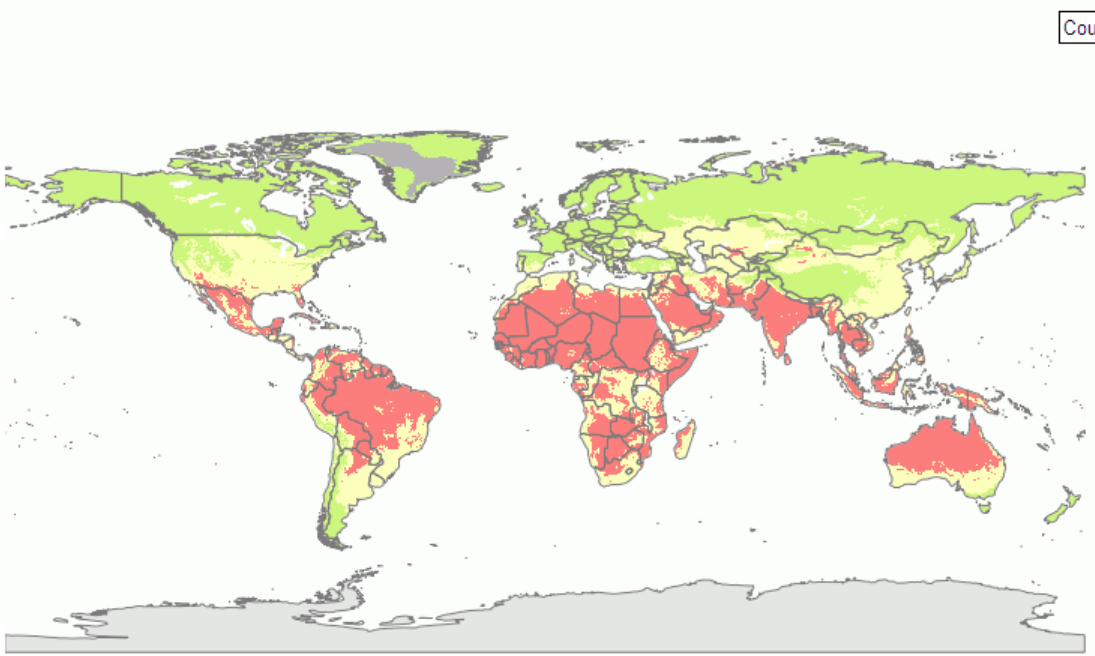
Course management - Turfgrass distribution map - Windows Internet Explorer

http://randamaps.maplecroft.com/?language=en&lat=51.517&lon=-0.105

Course management - Turfgrass distribution map

Course management **best practice guidelines**

Global map of turfgrass distribution



About this map

This map is designed to help golf course developers and managers around the world to achieve best practices in sustainable course management. It shows the global distribution of climate zones that are suitable for the main types of turfgrass – cool season species and warm season species. The 'transition zone' is the climate zone in which neither cool nor warm season species are ideally suited. More...

Turfgrass zone

- Warm season
- Transition zones
- Cool season
- None

More information

- Environmental impact of golf development
- Turfgrass species information

List of all case studies

Icons

"Find places" marker

Case studies

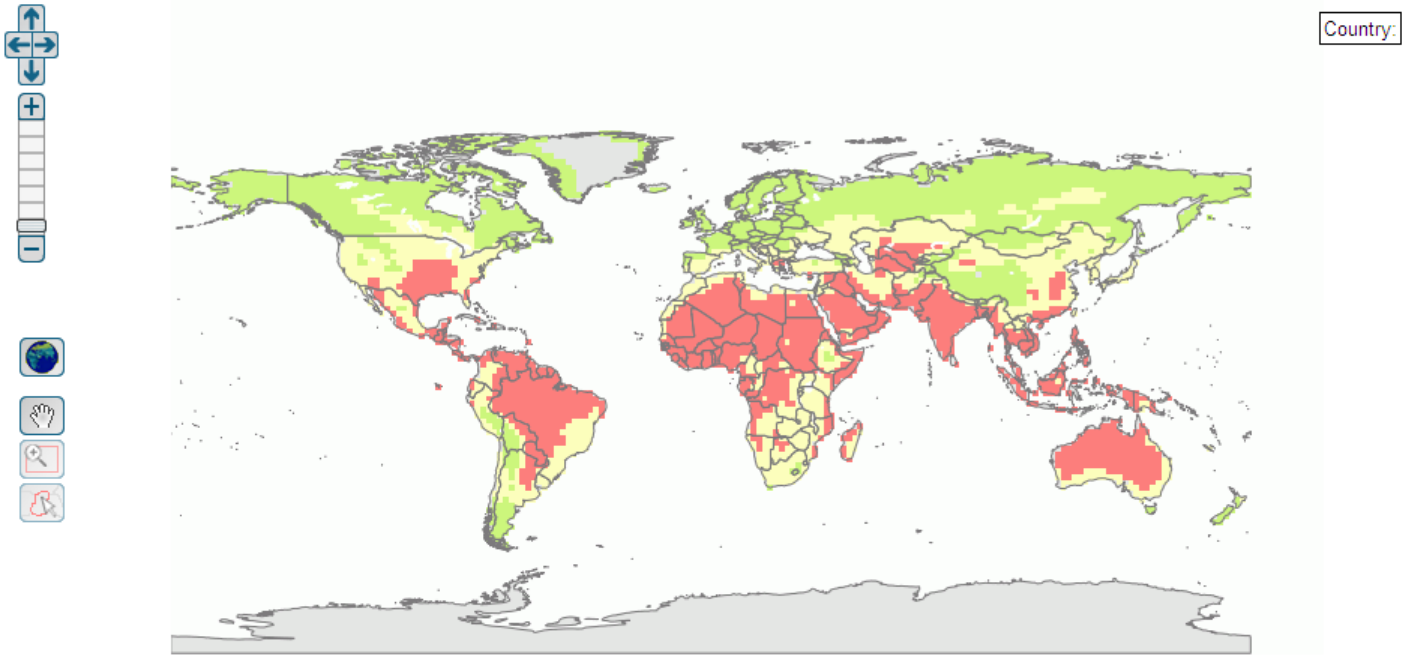
Course management - Turfgrass distribution map - Windows Internet Explorer

http://staging-randa2.maplecroft.com/

Course management - Turfgr... | Course management - Tu...

Course management **best practice guidelines**

Climate change effect on future turfgrass distribution: Scenario 3, 2046 - 2065



Maps | Find places | Country info

Current map

- ○ Current turfgrass distribution
- ◉ Climate change effect on future turfgrass distribution
- ○ Water stress
- ○ Golf course density

Climate scenarios

Scenario 3: 2046 - 2065

Scenario 3 - Steady increase: Carbon Dioxide (CO_2) concentrations increase at a rate of 1% per year, until they double and then remain constant thereafter.

About this map

The climate change scenario maps were created using the same computer model as the map of turfgrass distribution. Instead of using climate observation data, the model was applied to future temperature trends on the basis of pre-defined scenarios identified by the IPCC. More...

Turfgrass zone

- Warm season
- Transition zones

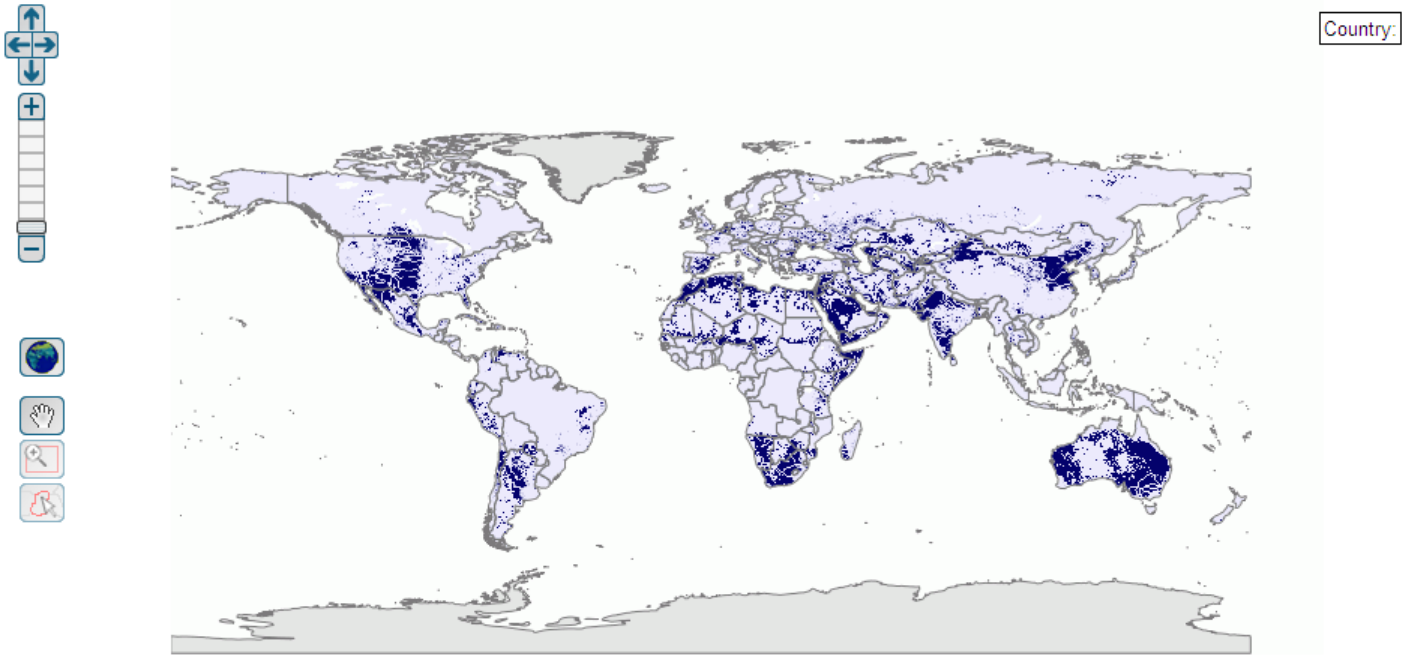
Course management - Turfgrass distribution map - Windows Internet Explorer

http://randamaps.maplecroft.com/?language=en&lat=51.517&lon=-0.105

Course management - Turfgrass distribution map

Course management **best practice guidelines**

Global map of water stress (pressure on water resources)



season. More...

Levels of stress

- 0 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%

More information

- Water
- Water resource management
- Water availability and use
- Water management
- Irrigation auditing and scheduling
- Construction guidelines: irrigation
- Optimising water use
- Benchmarking: the golf course
- Ponds and wetlands
- Ditches
- Irrigation

List of all case studies

Icons

"Find places" marker

Case studies


JOHNNIE WALKER
CLASSIC
PERTH
Lake Karrinyup Country Club


NEW PINE TREES
OPEN WATER
GRASS COVER
SHALLOW VEGETATED WATER
SANDTRAP
GRASS COVER
CONNECTING PIPE
FLOW
CELL 2
ALLOCASUARINA
TREES TO BE RETAINED
SALT MARSH AREA - RETAIN
AND PROTECT
OPEN WATER
SANDTRAP
FAIRWAY
FLOW
FLOW
PINE TREES TO BE RETAINED
SHALLOW VEGETATED WATER
GRASS COVER
CELL 3
ASR
CONNECTION TO
ASR SYSTEM
WQ
FLOW
CELL 1
NATIVE GRASS AREA
OUTLET PIT
OVERFLOW INTO
EXISTING CULVERT
WETLAND VEGETATION
UNDERSTOREY / GROUND COVER VEGETATION


Scotts
KRISTA-SOP
YEAR
ROUND


TURFCO

- Approximately 50% of course management budgets are spent on wages and salaries

- Do you have enough of the right people to achieve the Club's vision?

- Where is the time spent?

- What are the most costly aspects of your course management?

Total Man Hours Available

Total hours		AL	Sick leave	Actual hrs	Deficit	per wk
24,107		-1854	-400	21,853	8,123	156

				Mid week Required					% of Available	
	Job	Area		Time	Number	Man hrs	Frequency per year	Total man hours		
Turf Management	Course Setup			4	1	4	175	700	3.20	3.20
	Cut	Greens	Triplex	4	1	4	25	100	0.46	
			Walk mow	2	4	8	200	1600	7.32	
			Dew removal	2	2	4	15	60	0.27	
			Roll	4	1	4	75	300	1.37	
			Dust	3	1	3	20	60	0.27	
			Brush	5	1	5	12	60	0.27	
			Dethatch	5	2	10	6	60	0.27	
			Spray	4	1	4	52	208	0.95	
			Granular	3	2	6	6	36	0.16	
			Watering in	4	1	4	30	120	0.55	11.92
		Collars	Triplex	2	1	2	25	50	0.23	
			Walk mow	3	2	6	75	450	2.06	
			Spray	4	1	4	4	16	0.07	
			Granular	2	1	2	3	6	0.03	
			Blocking	4	4	16	10	160	0.73	
			Watering in						0.00	3.12
		Tees	Triplex	3	2	6	110	660	3.02	
			Walk mow			0		0	0.00	
			Dust	3	1	3	5	15	0.07	
			Dethatch	5	2	10	4	40	0.18	
			Spray	3	1	3	26	78	0.36	
			Granular	3	2	6	6	36	0.16	3.79

Cost v Quality

Budgets should be set to course management needs, based on the Club's Vision

If the forecast budget is too high:

1. Revise

2. Review business and strategic plans

3. Adjust vision

We need to understand the costs of managing each area of the golf course

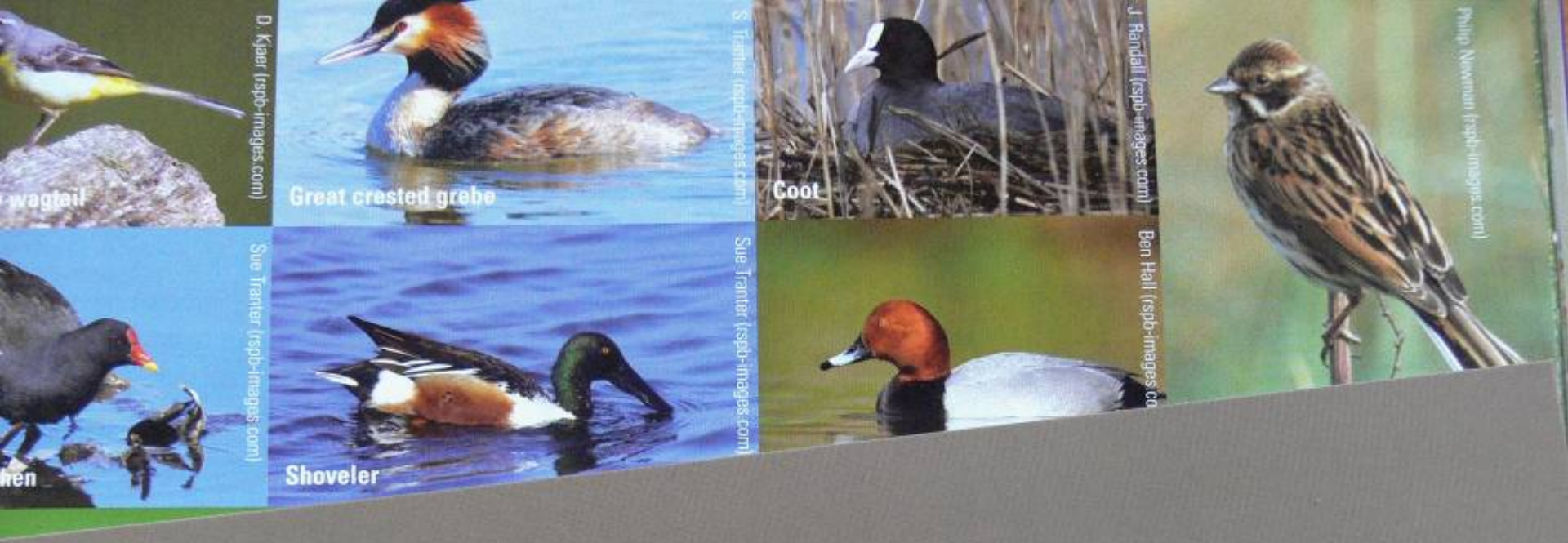
- Implications of savings (reduction in quality or re-allocation?)
- Opportunities for increases
- Cost of compliance

Annual budgets should turn into financial plans

Resources

English course:	
Rough management	6.4%
Bunker management	12.11%

Australian course:	
Rough management	5.5%
Bunker management	26.8%



Birds and golf courses:

a guide to habitat management

Keith Duff and Nigel Symes

R&A WORKING FOR GOLF

RSPB


GUR

Making course management more objective

- Measure
- Record
- Report
- Benchmark

R&A Course management Benchmarking

ENGLISH GOLF UNION
...at the heart of golf

Add data »

1 Start with the first year for which you have any information.

Complete the 'About your golf facility' form and save this information. If you have more than one course at your facility, add details of these here.

The above information is the only mandatory data required by the system.

2 Complete the 'About your greens' form and save this information. This defines which specific greens you will monitor each month: we recommend at least three greens per course, but you can choose to monitor more.

3 Having completed these two forms, the system then automatically 'knows' how many courses you have and which greens you will be monitoring on each course. It should only be necessary to complete these forms once a year at most.

Please note that the information on the area of greens and fairways (and other parts of the course if you want to complete these) is essential and you will not be able to use the system if these are not filled in. This data is used to calculate inputs per unit area in the monthly forms. The main turfgrass type is also an essential input as this information is used as a context for reporting purposes.

All other data input is optional but the more information you put in, the more you will get out of this service. At the very least, we recommend completing the monthly forms for irrigation water, fertiliser and pesticide use for greens and fairways.

Help in using the system is always available from The R&A by mailing wendycole@randa.org

R&A Course management Benchmarking

Add data

Base survey: Default survey

The forms to this survey enable you to input information about your facility in relation to key issues for your country, often relating to regulatory requirements, as identified by English Golf Union.

Additional survey

The forms to this survey provide the opportunity to enhance the information to the Default survey but none of this is obligatory. You choose how much, or how little, you want to record and for which subjects and areas of the golf course.

England Remove

You can also participate in

Playing quality Add

Playing quality includes: Greens: playing quality

Useful information

If you want to input historical data about your course, you must enter this earlier data first into the Annual forms. The system allows you to do this as far back as 2005. The Monthly forms are not date-bound in this way.

The system has built-in error trapping. If a number is entered incorrectly (e.g. 'six' instead of '6') then a warning pop-up box will appear and you should re-enter the data in the correct way.

Similarly, a warning will appear if a number is entered that is out of the expected range (e.g. a greens mowing height entered as 50 mm rather than 5 mm).

Do not use a comma to separate units of 1000, insert numbers only, i.e. 5000. For decimals use a full stop, i.e. 35.9. Some inputs allow for one decimal place, others two or more. If you input data with more than the allowed number of

Annual data

Default survey

- About your facility
- About your greens
- About your fairways
- About other areas of the course
- Input costs
- Water, energy and waste

Additional

England

- About other areas of the course

Monthly data

Playing quality

- Greens: playing quality

Additional

England

- Weather observations
- Green surrounds: input and activity
- Tees: input and activity

- Costs
- Water use
- Fertiliser use
- Pesticide use
- Energy consumption

Course management - Windows Internet Explorer

https://www.bestcourseforgolf.org/benchmarking/draw_chart.html?club_id=the_r_a&chart=rounds_played

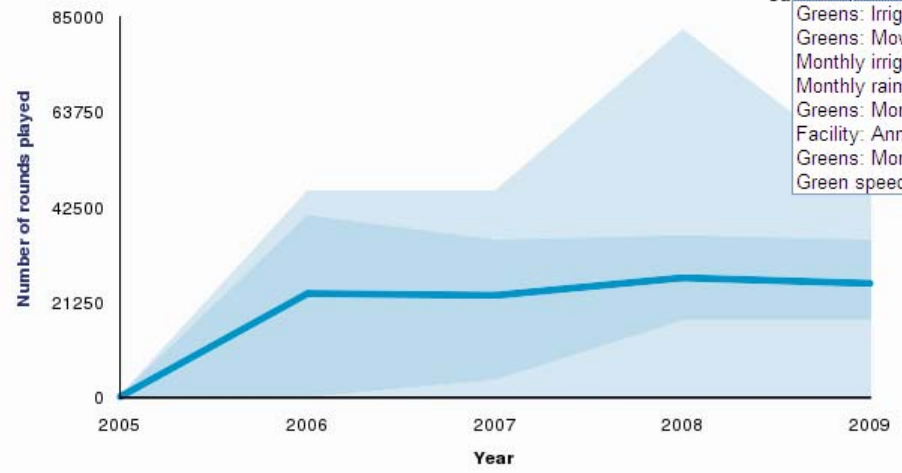
Course management

Course management Benchmarking

Facility: Rounds played

Facility: Rounds played — Go

- Facility: Rounds played
- Greens: Irrigation against main grass type
- Greens: Mowing height against main grass ty
- Monthly irrigation water used on course
- Monthly rainfall
- Greens: Monthly mowing frequency
- Facility: Annual fertiliser costs
- Greens: Monthly nitrogen
- Green speed



Key

- Upper/lower quartile
- Interquartile range
- Average (mean)
- Your data

Download data as an Excel spreadsheet | All clubs | Earliest | to: Latest | Update

Future development:

- KPIs
- Bespoke graphical output
- Reports

The service

- Available free to registered courses at **www.bestcourseforgolf.org**
- Anonymous
- Compare – true benchmarking

Benefits

Improve understanding of maintenance on:

- Economics (revenue and expenditure)
- Environment (footprint and compliance)
- Golfers (playing quality and disruption)

Benefits

Benchmarking will provide the evidence that golf's national and international governing bodies need to enhance the reputation of the game amongst the environmental movement and regulators.

Courtesy of Sharon Reekie

Based in St Andrews, The R&A is golf's governing body and the organiser of The Open Championship. The R&A is committed to working for golf and operates with the consent of 136 organisations, from the amateur and professional game, and on behalf of over 30 million golfers in 123 countries.

R&A

The R&A, St Andrews, Fife, Scotland KY16 9JD
telephone: +44 (0)1334 460 000 fax: +44 (0)1334 460 001
www.randa.org www.opengolf.com