





**ENVIRONMENTAL
STRATEGY
FOR AUSTRALIAN
GOLF COURSES**

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Australian Golf Union



HRDC

Horticultural Research Development Corporation



Australian Turfgrass Research Institute Ltd

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Introduction

This project has come about through initiatives by the Australian Golf Union, in particular by the Executive Director Colin Phillips. Colin saw in 1995 that Australian golf courses would come under closer environmental scrutiny in future years and engaged the Australian Turfgrass Research Institute Ltd to identify and describe those environmental issues relevant to the everyday management of Australian golf courses.

The issues vary from historic or sacred sites through wildlife and refuges to water quality and fertiliser use. Particularly in golf courses we see turf species being grown outside their natural environment and maintained in regimes that constantly stress the grass requiring considerable skill in presentation. With introduced turf species we also have introduced exotic pests which have no natural predators in this country, necessitating both cultural and chemical control programs. Maintaining turf in the driest continent in the world may be hampered by a lack of water, (constantly tested by our extremes of climate) placing emphasis on the availability and quality of irrigation water.

This study has been carried out in all states of Australia in conjunction with all aspects of the golfing industry. The information contained in this booklet will assist course managers to minimise adverse environmental impacts, to enhance the environmental benefits of golf courses, to increase community awareness and will promote co-operation between Australian golf courses, industry, governments, environmental organisations and the community.

I wish you well with the implementation of environmental programs on your course.

Ian McIver

Chief Executive Officer

Australian Turfgrass Research Institute Ltd



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Her interest in the environment has led to an increasing role in consulting golf and bowling clubs in the preparation of Environmental Risk Assessments and Environmental Management Plans.

Foreword

Arguably no man-made project blends with the environment as completely as a golf course. In fact, more often than not, natural surroundings are enhanced rather than damaged by imaginative and sympathetic architecture.

But with the steady rise in the popularity of golf and the increased pressures for more outlets for the sport comes a major responsibility, one which the Australian Golf Union attempts to address in this book.

Golf is Australia's largest participation sport with more than 500,000 registered golfers belonging to around 1559 clubs. There are also an estimated 1.2 million regular social golfers.

The sport has a high profile and is becoming increasingly popular with younger people, especially since the dramatic rise of American star Tiger Woods. For example, the Go Go Golf Program, launched by Greg Norman in 1993 now operates in more than 1500 schools nationally involving more than 200,000 children.

From 1975 to 1997 the number of clubs in Australia grew by more than 400 and total membership rocketed by more than 190,000.

The game in Australia can be traced back to 1839, when the country's oldest course was established in Bothwell, in the Tasmanian midlands. Golf was first played there on the Ratho Links by Alexander Reid who came out from Scotland in the late 1820's. The same turf is still used for the course today and the greens are fenced to protect them from the sheep that graze on the fairways.

While Bothwell undoubtedly boasts the oldest *course* in the country – club officials claim it is the oldest in the Southern Hemisphere – a century-old debate has raged between The Australian Golf Club in Sydney and Royal Melbourne Golf Club as to which is the oldest *club*.

The Australian was formed in 1882 but six years later lost its course until 1895. Royal Melbourne was founded in 1891 and technically may be the second oldest club in the land but certainly is the oldest continuous club.

Eight years after the first divots were taken at Bothwell, golf was being played in the heart of downtown Melbourne, at Flagstaff Gardens. According to Muir McLaren, author of 'The Australian Golfer's Handbook, 1957', this park should be "hallowed ground" to Australian golfers, for it was here that golf was first played on the continent of Australia. Presumably McLaren was referring to the mainland of Australia.

Clubs were rapidly established Australia-wide, including The Australian 1882, Royal Melbourne 1891, Geelong Golf Club 1892, Adelaide Golf Club 1892, Royal Sydney 1893, North Queensland (later Townsville) 1893 and Newlands (later Hobart) 1896. New courses across the country were continually added as the popularity of the game spread beyond the elite to encompass all levels of society, to the point where issues sprang up which would tie together golf authorities, government agencies and community and conservation groups.

Environmental concerns raised by the construction and maintenance of golf courses demand a co-operative strategy be set in place so that a concerted effort can be made to satisfy the needs of community and wildlife groups while catering for the responsible expansion of the game.

To this end the Australian Golf Union took the initiative with a project jointly funded by the Horticultural Research and Development Corporation. What was needed was to pinpoint the issues, gather information and develop a national approach to the proper environmental management of golf courses.

Among the concerns raised were the conservation of the habitat of native wildlife, excessive water usage and the employment of pesticides.

Interestingly around half the environmental groups surveyed favoured golf courses in urban regions, as promoting a useful habitat for native flora and fauna and providing a green oasis in an area ringed by suburban development.

But while Australian courses are a mix of heathland, resorts and, to a lesser degree, links layouts it is important to realise that a course which is manicured through to include the rough will obviously not provide an ideal habitat for native birds and animals.

There are already strict controls at each level of government – Federal, State and local which dictate the guidelines for building golf courses. For example, coastal courses are severely limited because of the possibility of undermining sand dunes. Foreign grass seeds – ie those outside the traditional sources of the US and UK – are quarantined because of the probability of importing exotic pests.

There is also the issue of water usage. Most courses in Australia draw the great majority of water for irrigation from dams, bores and even

effluent. In fact the Snowy Mountains Authority believes building a golf course to use its excess effluent water will be less costly than alternative methods of disposal

It is vital that instead of engaging in a combative exercise between golfers, governments and environmental groups a climate of co-operative planning, shared information, community education and monitoring be established.

In this way golf, through its widespread popularity and the use of courses as environmental standards, has an opportunity to take the lead in management of the environment, a lead which can be followed by other sports and leisure activities in Australia.



David Cherry
President, Australian Golf Union

Project summary

The preparation of an Environmental Strategy for Australian Golf Courses was an initiative of the Australian Golf Union, joint funding of the project was provided by the Horticultural Research and Development Corporation. In late 1995, the Australian Turfgrass Research Institute (ATRI) team, headed by Jyri Kaapro, began the task. The central aims of the project were to identify issues, collect information, promote awareness of golf clubs as environmental assets and develop national guidelines for the environmental management of golf courses.

Identifying the environmental issues facing golf clubs in unique and varied Australian conditions.

The first step was to bring together golf club managers, superintendents, professionals and turf chemical company representatives in each state to discuss the environmental issues which affected them. The diverse climates, soil types and the environmental protection legislation in each state produced a wide range of issues, from pesticide leaching to the use of sump oil on sand greens.

The issues compiled from the state strategic planning meetings were sent to all Australian golf clubs and over fifty environmental groups for comment. Over thirty submissions were received, and these were incorporated into this strategy.

Compilation of a library of technical environmental information as a reference for the Australian golf industry.

At the same time as the meetings, and throughout the project, an extensive environmental information gathering process was undertaken from each state's government and environmental groups. A compilation of over 150 technical reports, 600 information leaflets and articles, 50 Acts of Parliament and legislation and 450 newspaper clippings were made available as a reference at ATRI.

Library of Environmental Information - grouped under the following categories:

- ◆ air pollution
- ◆ education/research
- ◆ environmental politics
- ◆ household waste/recycling
- ◆ legislation
- ◆ pesticides/health
- ◆ pests/biological control.
- ◆ soil, farming and land clearing
- ◆ turf/golf/bowls
- ◆ urban development
- ◆ water conservation and pollution
- ◆ wildlife

Promote awareness of the environmental attributes of golf courses within the industry, and to the public.

Promotion of the environmental attributes of golf courses within the industry, and outside has been achieved through presentations of the project at national turf conferences and through articles in the press. Papers were presented at the Environmental Symposium for Turf, Penrith, 1996 and at the 14th Australian Turfgrass Conference, Melbourne, 1996. The project has been discussed at nationwide workshops and meetings. Twelve articles have been published within the industry in magazines such as Turfcraft and Pro News (PGA) and six outside in papers such as the Sunday Herald Sun (Melbourne) and the Environment Business newsletter.

Development of national guidelines which clubs can use to combine the production of excellent playing surfaces with environmentally sound management practices.

An issue raised in the planning meetings was that the superintendents needed practical environmental management guidelines, which they could then implement at their own clubs. In order to achieve this, a case study was undertaken to develop an Environmental Management Plan for Toukley Golf Club, on the Central Coast of NSW. Through the use of aerial photographs, local knowledge from the superintendent, management and members and expert knowledge from environment and government resource management groups, a model was developed.

Consultation with environmental groups and government departments.

In order to gauge the attitudes of environmental groups towards golf courses in Australia, a survey was sent to over 100 environmental organisations such as the Australian Conservation Foundation. Through questions such as 'What are your concerns about golf courses in Australia?', the issues highlighted included water pollution by nutrients and pesticide residues, destruction of native vegetation and excessive water use. However, over fifty percent of responses identified golf courses as having a benefit in providing a habitat for native flora and fauna and as an important open/green space in urban environments.

The groups also believed that environmental groups and golf courses could work together to improve the environmental benefits of golf courses, through consultation and community education.

Results from the survey are detailed in Chapter 7.

A survey was also conducted of the golf clubs in the Hawkesbury-Nepean Catchment on their fertiliser and pesticide application practices. An Australian survey to quantify management practices of golf courses will be beneficial, and must be further considered.

Developments Initiated from the Project.

Through the publicity and enthusiasm generated from the project, several new initiatives were developed, including the Environmental Symposium and National Conferences for Turf, the Birds On Golf Courses project, the Preliminary Survey of Water Quality on NSW Golf Courses and the PLANTS program.

Environmental Symposium and National Environmental Conferences.

The Symposium was an Australian first. Held in Penrith, 1996, it provided the turf industry with an international program of presentations, focusing on a wide range of environmental topics - from frogs to sewer mining. This conference was so well received, with over 200 in attendance, that ATRI was requested to make it available nationally. In March, 1997, a one-day program was presented in Brisbane, Sydney, Melbourne and Perth.

Preliminary Survey of Water Quality on NSW Golf Courses

The NSWGCSA, HRDC and ATRI have commenced a project to quantify nutrients in waterbodies and streams on 44 NSW golf courses. Sites have been chosen in collaboration with the EPA, to include entry and exit points of water to the courses. Early results have shown higher nutrient loads in waters entering courses from urban runoff, than exiting courses.

Birds On Golf Courses

Birds Australia, the Australian Golf Union and ATRI have commenced a three-year project to study birds which live on golf courses. This will provide clubs with valuable information on the existing rich bird habitats which exist on their golf courses, and advice on the enhancement of these areas.

Plant Lots of Native Trees and Shrubs (PLANTS)

The Society for Growing Australian Plants program provides golf courses with indigenous local seed, planting and management advice. The aim of this program is to increase the native plantings which exist on golf courses, and encourage native fauna.

Summary guidelines

AIR

- Minimise the use of ozone depleting substances

EDUCATION

- Develop links with community and environmental groups to raise the awareness of golf courses.
- Provide environmental training to golf course maintenance staff.

ENERGY

- Carry out energy conservation in buildings, equipment, machinery, vehicles and irrigation systems.

HERITAGE

- Identify and protect heritage items and places.

MANAGEMENT

- Prepare a course specific Environmental Management Plan.
- Assess the environmental state of the golf course by introducing and developing monitoring programs

PESTICIDES

- Develop a management plan for the safe use and storage of pesticides

SOIL

- Assess the environmental state of the golf course through soil monitoring programs.
- Carry out conservation and amelioration of degraded soils.
- Control pollution during construction activities.
- Test and dispose of contaminated soils accordingly.

VEGETATION

- Protect and rehabilitate remnant native vegetation.
- Use local native plant species.

WASTE

- Reduce, reuse and recycle waste.

WATER

- Use water saving devices and techniques.
- Consider the pollution potential when choosing fertilisers, pesticides, soil ameliorants and irrigation water sources.

WILDLIFE

- Follow wildlife-compatible habitat design in roughs and non-play areas to encourage the wildlife corridors concept.
- Create new wildlife habitat areas.