SECTION ELEVEN

Education and Training

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11.1 INTRODUCTION

Improving the environmental management of golf courses requires an effective education and training program for all staff. The adoption of best environmental management practices can only come about with education and training so that staff are aware of:

- the aims and objectives of the operation of the golf course facility;
- the benefits to the course, golfers and the community of best environmental practices;
- the legislative requirements governing golf course management;
- good environmental stewardship (including being able to recognise environmental problems and implement solutions); and
- safe operating procedures.

Staff training can be undertaken by various means depending on the needs of management and the individual. Specific areas of training may include:

- pesticide spraying and chemicals management;
- irrigation;
- stormwater management;
- soil management (including erosion and sediment control);
- mowing;
- fertilising;
- vegetation management and
- equipment maintenance.

Written procedures to be followed when carrying out designated duties are necessary, as are appropriate induction sessions to ensure that staff have an adequate understanding of what is expected. On-going education and training, both on the job and off the job, will ensure that staff maintain and extend their skills and motivation and are able to comply with legislative requirements and environmental best practice.

The Rural Training Council of Australia (RTCA) is the peak industry body overseeing the turf industry's training agenda. In 1998, the RTCA released the National Horticultural Training Package, which gave details of six vocational levels of competency, from Groundsman through to Greens Manager.

The previous two training packages were reviewed during the past two years with extensive industry and training provider input and three new packages have been developed. These are the Conservation and Land Management Training Package and the Rural Production and Amenity Horticulture Training Packages. See the RTCA website for further details at www.rtca.com.au.

The first step in ensuring that any business is operating efficiently is to ensure that worker skills are adequate to meet work challenges. When reviewing the efficiency of operation of a business, therefore, it is necessary to undertake a skills audit of all staff. This benchmarks the skills base and clearly identifies the future training programs required. The benefit of the new National Horticultural Training Package, is that it allows golf clubs to benchmark their skills base against unbiased national turf industry competency standards. With this knowledge, they can develop training programs, either in-house or through an external provider, to upgrade the skill levels to maximise productivity and efficiency. Indeed, the increased flexibility of the package enables clubs to negotiate with educational providers to develop flexible training courses, some of which can be delivered in the workplace. This has the potential to reduce the time-cost burden of losing apprentices and trainees to attend training at TAFE or equivalent institutions for skills that can best be learnt on the job. This is not to say that all turf skills can or should be learnt on the job only, but that there now exists a greater flexibility to undertake training at the same time as maximising all staff members' productivity in the workplace.

The Amenity Horticultural Training Package is also an excellent tool for developing position descriptions for each layer of staff. It clearly spells out the specific competencies (skills) required for each position. This is particularly useful in creating an induction booklet for each position. Very few golf courses have an induction booklet for new employees and it is strongly recommended that all golf courses develop such a booklet. The induction booklet should include:

- overall mission statement and philosophy for the facility;
- description of the facility;
- occupational health and safety procedures;
- operational procedures (e.g. before task is undertaken the equipment is checked and cleaned on completion);
- identification of environmentally-sensitive areas and special precautions;
- legislative framework under which the golf course operates (key laws and regulations e.g. *POEO Act 1997*, *Pesticides Act 1999*, the *Pesticides Amendment (Records) Regulation 2001* and the *Pesticides Amendment (User Training) Regulation 2003.*

Good staff training ensures that resources will be used efficiently. Water and fertiliser use, pest control and land management are dependent on well-trained staff who understand the principles behind what they are doing and the environmental and economic benefits of good practices.

Recent NSW developments affecting golf course staff

The NSW DECC has introducing a new law requiring compulsory training for all commercial pesticides users. This is the Pesticides Amendment (User Training) Regulation 2003). It requires commercial users to have a qualification that shows they are able to apply and manage pesticides correctly. People who have not been trained will have a period of possibly two years to get trained or to have their current skills recognised. People who are qualified have to be reassessed every five years. There are a range of training options -in most cases a two day course (eg SMARTtrain or ChemCert) based on the national Horticulture Training Package, will be appropriate. Alternatively, staff may apply for

recognition of prior learning (RPL) and be assessed against the relevant competencies by appropriate Registered Training Organisations. Superintendents should ensure that all staff using pesticides are trained (or assessed as competent) as required by the new Regulation. (See the *Pesticides Act 1999* information in Chapter 4.2 for more detail.)

Training checklist

- Contact the Rural Training Council of Australia to get a copy of the newly endorsed Amenity Horticultural Training Package.
- Determine numbers of persons required at each vocational level.
- Undertake a formal assessment of existing skills base against the National Turf Industry Competency Standards (a registered training organisation can assist with this).
- Compare existing skills with those required.
- Develop training programs to fill gaps between the skills required and those already available in house.
- Contact private and public providers to develop flexible delivery of training or even consider providing some training in-house.

11.2 THE ROLE OF GOLF COURSES IN EDUCATING AND INVOLVING GOLFERS AND THE COMMUNITY TO ACHIEVE BEST ENVIRONMENTAL PRACTICE

As noted in previous chapters, golf courses can be a ‘green oasis’ providing vital habitats for indigenous flora and fauna, especially in heavily urbanised areas. Corridors for wildlife can be incorporated into construction and reconstruction works and the construction of wetlands can serve to strip nutrients from contaminated stormwater as well as providing home to native birds and animals.

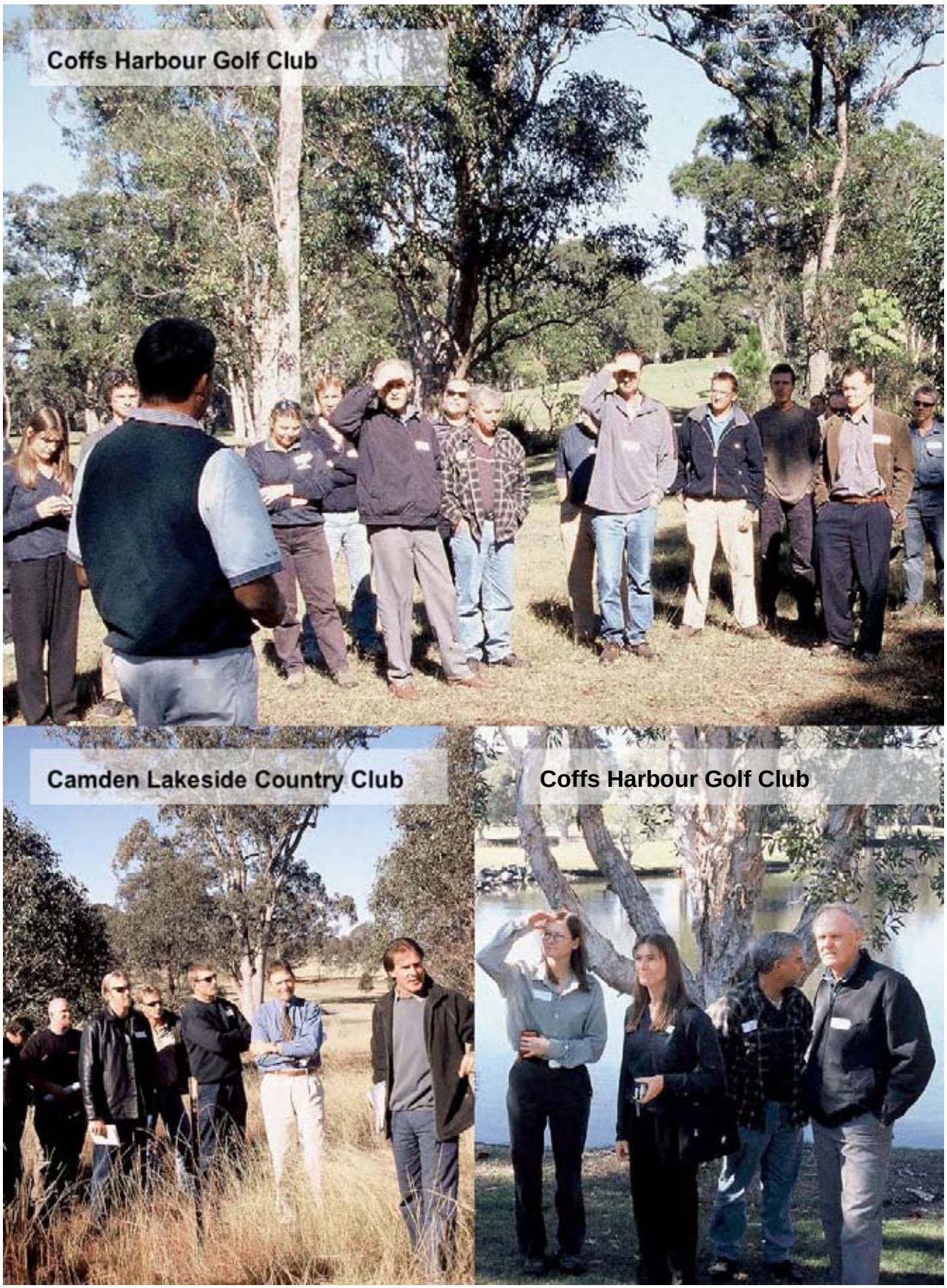
In order to improve the environmental management of the golf club, it is vital to engage and educate golfers and the wider community. This will not only ensure good relationships but also education on a range of environmental issues such as encouraging an increase in local flora and fauna and their role in maintaining/ increasing bio-diversity. Many golf courses have utilised the services of outside agencies, both government and non government, to assist them in improving environmental practices and engaging the local community. Communication tools such as regular newsletters, a session on the local radio and hosting school excursions can all be valuable in involving the local community.

It is useful to remember that in order to effect change you often need assistance and allies. As the *Audubon Cooperative Sanctuary Program for Golf Courses* illustrates in its section on Outreach and Education, it is vital to engage your local community. They can provide a conduit to reach golfers and committees and management and can become involved in bush regeneration, monitoring native animals and birds, and in engaging the local media.

Andrew Baker, Claude Crockford Environmental Award winner, 2001, confirmed this in his statement:

> 'Recognising the need for support from the membership base, staff and community, the ‘outreach program’ initiatives set down by Audubon became critical in facilitating the programs and once convinced of the obvious benefits of the long-term strategies that we hoped to put in place, even groups that were initially reluctant to embrace the changes, played a key role in the lengthy certification process.'

Workshop participants attending from various sectors of the turf industry, including Golf Courses, Council Officers and the AGCSA.



As demonstrated in the Long Reef case study (Chapter 8 Native Vegetation and Wetlands) working with golfers, the local community and other organisations can be one of the most effective ways of initiating environmental improvements. This becomes a mutual learning program, with small steps taken to achieve specific outcomes, which in turn can inform, educate and lead to further environmental change.

Some government agencies that may be able to assist you include:

- The Australian Museum
- Taronga Park Zoo
- National Parks and Wildlife Service
- NSW Department of Planning
- Your local council environment staff
- NSW Department of Environment and Climate Change
- Local catchment management boards
- NSW Fisheries
- Sydney Water

A range of non government organisations (e.g. conservation groups, local environment groups) are invaluable in providing expertise and enthusiastic support including:

- Australian Conservation Foundation
- Society for Growing Australian Plants – NSW
- Total Environment Centre
- National Parks Association of NSW
- Local environment centre
- WIRES
- Nature Conservation Council of NSW
- Birds Australia
- Greening Australia
- Flora for Fauna
- Streamwatch

11.3 EDUCATIONAL CONTACTS

The following organisations provide advice and information on the implementation of the National Horticultural Training Package and where to find assessment services:

Rural Training Council of Australia
PO Box E10 KINGSTON ACT 2604
Tel. (02) 6273 2514
Fax (02) 6273 4811
Web: www.rtca.com.au

Australian Golf Course Superintendents' Association
Suite 1, Monash Corporate Centre
752 Blackburn Rd, Clayton North Vic 3168
Ph: (03) 9548 8600
Email: info@agcsa.com.au
Web: www.agcsa.com

USEFUL WEBSITES

www.bom.gov.au
www.environment.nsw.gov.au
www.drummuster.com.au
www.usga.org
www.gcsaa.org
www.lib.msu.edu/tgif

GLOSSARY

acid sulphate soils (ASS) – soils that are rich in iron sulfides, particularly pyrite (FeS_2). ASS are associated with low lying areas and swamp soils and when exposed to air produce sulphuric acid with pH's commonly less than 1.

active ingredient – the chemical in a pesticide formulation primarily responsible for its phyto-toxicity to the target pest, and which is identified as the active ingredient on the product label; abbreviated ai.

Biodiversity – is the variety of all life forms: the plant, animals and micro organisms, their genes and the ecosystems of which they are a part.

biological control – the control or suppression of noxious organisms or pests by the action of one or more natural or introduced organisms or biological agents through natural means, or by manipulation of the organism or environment.

cation exchange capacity – the sum of exchangeable bases plus total soil acidity at a specific pH value, usually 7.0 or 8.0; abbreviated CEC.

compaction, soil – an increase in the soil bulk density, and concomitantly a decrease in the soil porosity due to the application of mechanical forces to the soil.

controlled-release fertiliser – a fertiliser with a rate of dissolution less than that obtained for completely water-soluble fertilisers; it may involve (a) compounds that dissolve slowly, (b) materials that must be decomposed by microbial activity, or (c) soluble compounds coated with substances highly impermeable to water.

cool-season turfgrass – a cold-tolerant turfgrass species best adapted to growth during cool, moist periods of the year, and commonly having a temperature optimum between 16-24ºC; includes the *Agrostis, Festuca*, *Lolium* and *Poa* species.

denitrification – conversion of nitrate-N into gaseous N forms, N_2 and N_2O which are lost to the atmosphere.

electrical conductivity – the conductivity of electricity through water or an extract of soil; it is used to estimate the soluble salt content in solution; abbreviated EC.

evapotranspiration rate – the amount of water evaporated from a turf area per unit of time; expressed as mm/day; abbreviated ET.

fertigation – the application of nutrients dissolved in water to a growing medium around plant roots. Usually applied through the irrigation system.

herbicide – a chemical substance or cultured biological organism used to kill or suppress the growth of plants.

irrigation, automatic – a water application system in which values are automatically activated, either hydraulically or electrically, at times preset on a controller; the system may or may not be integrated with an automatic sensing unit.

leaching – movement of nutrients, salts and pesticides through the soil due to the action of water.

mineralisation – conversion of organic-N through microbial action to mineral forms, predominantly ammonium (NH_4) and Nitrate (NO_3).

parts per million – the number of parts by weight of a given compound in one million parts of the final mixture; abbreviated as ppm.

pathogen – a disease-inducing agent such as a fungus or virus.

pest threshold damage level – the level of pest injury that requires implementation of a management tactic.

pesticide – any chemical or mixture used to control unwanted plant or animal life to protect desirable organisms.

phytotoxicity – the poisonous effect of a chemical that causes death or injury to plants.

pH, soil – the pH of a solution in equilibrium with soil.

plant growth regulator – a substance used for controlling or modifying plant growth processes without severe phytotoxicity; abbreviated PGR.

postemergence herbicide – a chemical applied to the foliage of a weed after emergence from the soil.

preemergence herbicide – a chemical applied prior to the emergence of a weed from the soil.

rhizome – an elongated, jointed, underground stem that can produce roots and shoots at each node.

salinity soil – the amount of soluble salts in a soil; the conventional measure of soil salinity is the electrical conductivity of a soil water extract.

selective herbicide – a chemical that is more toxic to some plant species than to others.

sodium adsorption ratio – a relation between soluble sodium and soluble divalent cations that can be used to predict the exchangeable sodium fraction of soil equilibrated with a given solution; abbreviated SAR.

surfactant – (1) a substance that lowers the surface tension of a liquid. (2) surface-active material that improves the emulsifying, dispersing, spreading, wetting or other properties of a liquid by modifying its surface characteristics.

tank mixing – the mixing of two or more pesticides in the spray tank at the time of application.

thatch – an intermingled organic layer of dead and living shoots, stems, and roots of grasses that develops between the turf canopy of green vegetation and the soil surface.

topdressing – a prepared root zone mix added to a turfgrass surface and worked-in by brushing, matting, raking, and/or irrigating to (a) smooth a closely mowed putting green surface, (b) firm a turf, (c) enhance decomposition, or (d) cover stolons or sprigs during vegetative planting.

volatilization – evaporation of a liquid or solid. Usually associated with pesticides and fertilisers.

warm-season turfgrass – a heat-tolerant turfgrass species best adapted to growth during the warmer periods of the year, and usually dormant during cold weather or injured by it; commonly having a temperature optimum between 27-35ºC; e.g. *Axonopus, Cynodon, Paspalum, Stenotaphrum*, and *Zoysia* genera.

wetting agent – a surface-active substance that reduces interfacial tensions and causes spray solutions or suspensions to make better contact with treated surfaces in terms of both spreading and penetration; a few types of wetting agents are effective in correcting hydrophobic soil-turf problems.