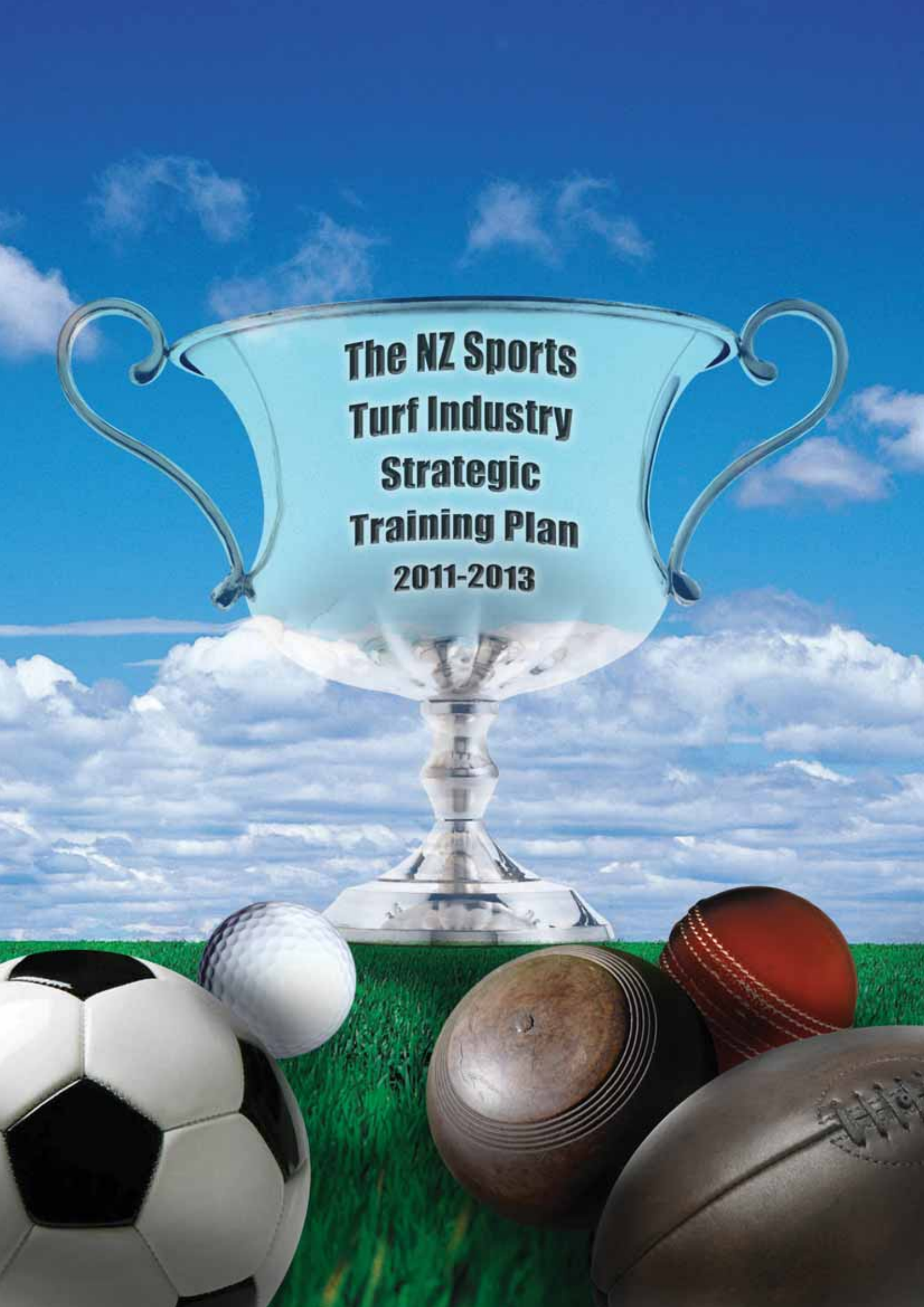
The NZ Sports
Turf Industry
Strategic
Training Plan
2011-2013

The Sports Turf Industry Strategy

Our Mission

Promote world class turf for sport and amenity uses through excellence in turf management training.

Goals

1

Openly exchange information for the purposes of training within a cohesive sports turf industry.

2

Continue to improve training to promote technical and business innovation, education and training opportunities within the sports turf industry.

3

Establish professional standards for industry employees.

4

Increase the sports turf industry profile to promote career paths and training opportunities.

See page 18 for more details

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New Zealand Sports Turf
Industry Training Organisation

Executive Summary

The '2011-2013 NZ Sports Turf Industry Strategic Training Plan' is the culmination of 5 years of research led by the NZ Sports Turf ITO (NZSTITO) and consultation with the New Zealand turf industry. It sets out a 'road map' for skills development, designed to ensure that the sports turf industry continues to have access to the skills it needs to develop and maintain high quality turf surfaces, and that those skills keep pace with future demands and technological developments.

Industry Issues

Seven key industry issues/needs were identified during the research process...

1. *More than half of the workforce remains unqualified and uptake of training is low in some industry sectors.*
2. *There is a need for enhanced management capability, and packages of training spanning a range of different levels.*
3. *There is a need for increased acceptance of the importance of ongoing training and to link this with professional standards and career pathways.*
4. *Low salaries and wages drive skill shortages and leakage of skilled people from the industry. There is a need to enhance industry image to attract high calibre recruits, and meet replacement demand driven by an aging workforce.*
5. *There are challenges in maintaining a critical mass of training provision across a small highly specialised and widely dispersed industry.*
6. *There is a need to ensure effective communication and cooperation between the ITO, industry, and international turf sector organisations.*
7. *There is a need to develop mechanisms to support trainees with low levels of literacy and numeracy and ensure that these people are able to successfully engage in training.*

Future Skill Needs

In terms of future outlook, for the industry, financial sustainability is a key challenge, and may lead to increased rationalisation, amalgamations, and fewer facilities. Pressure on budgets is likely to continue at least in the short to medium term. Facility and course managers will require enhanced leadership and management skills to more effectively utilise assets, optimise efficiency of resource inputs, respond to changing customer expectations, and underpin organisational sustainability.

Usage demand for sports facilities in some sectors will increase, along with the need to maintain or improve sports surface quality. This will drive the adoption of construction and management technologies capable of sustaining increased usage while maintaining quality, and require dissemination of information to support these technologies.

Environmental pressures will continue to increase, with onus being placed upon land users to be environmentally responsible and accountable for their actions. This, together with changing weather patterns which may be associated with climate change, the loss of some commonly used pesticides, water restrictions, and rising cost of fuel and fertilisers will impact on the cost efficiency of, and access to sports facilities, and turf management requirements. Turf managers will require training that will support environmental sustainability of turf facilities, including developing sustainability strategies, conducting environmental audits and development and implementation of environment management systems and plans (including water and nutrient management plans).

Sports Turf Industry Strategy

The 2011- 2013 Sports Turf Industry Strategic Training Plan has been developed to address these issues and future skill needs. It sets out a series of four key goals, together with supporting objectives and strategies that have been established through extensive consultation with industry.

Goal 1: Openly exchange information for the purposes of training within a cohesive sports turf industry.

Goal 2: Continue to improve training to promote technical and business innovation, education and training opportunities within the sports turf industry.

Goal 3: Establish professional standards for industry employees.

Goal 4: Increase the sports turf industry profile to promote career paths and training opportunities.

Qualification and Career Pathways

Consultation during the development of the Industry Training Strategy has repeatedly emphasised the need not only to have training spanning a range of different levels, but to link this together with career pathways that are recognised and supported by the industry. The Plan sets out 'Qualification and Career Pathways' designed to link industry career pathways, typical job roles and associated key skills, with a qualification and training delivery strategy. See page 17 for details.

A 'Whole of Industry' Approach

While skill needs and training pathways are a key theme, the Strategy describes goals and objectives that extend beyond training but are integral to its implementation and success. In this sense, the Strategy is very much an Industry Strategy rather than an ITO Strategy, requiring a whole of industry approach to implementation. The NZ Sports Turf ITO looks forward to working with industry to ***'Promote world class turf for sport and amenity uses through excellence in turf management training'.***

Special Thanks

This project has been funded by the NZSTITO and the Tertiary Education Commission (TEC), through Sector Leadership Funding. This contribution is acknowledged with thanks.

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Otago Polytechnic
Sports Field Forum
Turf Industry Profiling Group (TIPG)
Turf Industry Collective

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Sports and the sports turf industry – vital to the New Zealand way of life

Introduction

Sports are a vital feature of New Zealand life. In every community around the country, New Zealanders of all ages and levels participate in sports, and are healthier and happier as a result. Success in international sport furthers our sense of national pride and identity. Accessible, high quality playing surfaces are the essential foundation enabling New Zealanders to safely and confidently develop skills and maximise their enjoyment and performance of sport, and to attract top level international sports events and sport tourism.

To this end New Zealand has developed a wide range of sporting venues and associated amenities. These have increasingly sophisticated natural and synthetic surfaces designed to meet the individual requirements of the sports code or codes for which the surface is used.

The sports turf industry is made up of people and organisations that develop, administer, maintain and supply products and services to sports and amenity turf facilities, whether grass based or using artificial turf. These include golf courses, bowling greens, cricket grounds, sports fields (many of which are multiuse and may include rugby, soccer, hockey etc), race tracks and equestrian centres (serviced in collaboration with Equine ITO), school grounds, croquet lawns, tennis courts and other fine turf areas, parks and other passive use turf amenities (serviced collaboratively with Horticulture ITO), and commercial turf production. While the key focus of the NZSTITO is upon sports turf, the ITOs' scope of training and activity encompasses all turf areas, including passive use amenity turf and synthetic turf surfaces.

Highly specialised, technology driven skills underpin sport turf performance

Top class turf facilities require top class workforce skills. Ensuring that the New Zealand turf industry has a well educated, highly skilled, adaptable and respected work force capable of presenting quality turf, for turf facilities, is central to the role of NZ Sports Turf ITO (NZSTITO). This is achieved through;

- developing, maintaining and arranging delivery of qualifications and skill standards,
- providing industry leadership by identifying skill needs,
- developing strategic training plans, and
- promoting training that is matched to the unique requirements of the industry.

The leadership role is directly linked to the development and publication of this Industry Strategic Training Plan.

Sports Turf Industry Strategic Training Plan... the culmination of 5 years of research

The 2011-2013 NZ Sports Turf Industry Strategic Training Plan is the culmination of 5 years of research and consultation with the turf industry. The "NZ Sports Turf Industry Survey and Future Skills Analysis Project" [1,] (alternatively referred to as the '2006 Sports Turf Industry Survey'), a national sports turf industry survey carried out in 2006, set the stage for the Strategy. Supported by an NZIER analysis of 2006 Census data[2] pertinent to the sports turf industry, this provided a snapshot of industry demographics, economic impact, trends and training related issues at the time. Issues and trends crystallised through this study, spurred the implementation of a *Strategic Planning Process* (SPP) over 2008/2009 and the drafting of the initial 'Industry Strategy'. Additional research over 2009 and 2010 included a survey of participants at the 2009 New Zealand Turf Conference[3] and interviews with key industry sector groups and National Sports Organisations (NSOs), to verify and update previous work.

… a 'road map' to skills development

In 2010 the information was analysed to develop the 2011 to 2013 Sports Turf Industry Strategic Training Plan. This sets out a 'road map' for skills development, designed to ensure that the industry continues to have access to the skills it needs to keep pace with future demands and technological developments. Further details of the development process are described in Appendix 1, 'Research Supporting the Strategy'.

…a 'whole of industry' approach

While skill needs and training pathways are a key theme, the Strategy describes goals and objectives that extend beyond training but are integral to its implementation and success. These have been developed through a robust process of consultation with industry and Tertiary Education Organisations. In this sense, the Strategy is very much an *Industry* Strategy rather than an *ITO* Strategy, requiring a whole of industry approach to implementation. The ITO gratefully acknowledges the input and contribution from industry over the last few years to produce this plan.

Aligning with the Tertiary Education Strategy (TES) 2010-2015

The Tertiary Education Strategy 2010-2015 describes the New Zealand Government's vision for the next 5 years, to work towards relevant and efficient tertiary education provision that meets the needs of students, the labour market and the economy. The TES notes that the development of people, and in particular their skills, is pivotal to helping an organisation's ability to innovate and apply new ideas to adapt to competitive challenges and new markets. The Sports Turf Industry Strategic Training Plan informs the way in which NZ Sports Turf ITO intends to work with the turf industry and across the tertiary sector over the next 3 – 5 years to improve its performance, position and contribution to the building of relevant and efficient tertiary education.

The Demand for Skilled Labour

Labour and Skill Shortages – demand shift

The size of the turf industry workforce is estimated at around 8740 paid workers and 3000 volunteers (refer to Appendix 2 'Workforce size'). A quarter of respondents to the 2006 Sports Turf Industry Survey[1] did not consider the industry workforce to be adequate, indicating that they were experiencing hiring difficulties. Those experiencing greatest shortages were racetracks, councils and organisations serving this sector, and golf courses. When asked to assess what were the most critical shortages, the category of staff most frequently rated as 'greatly needed' was unqualified staff with no certification, followed closely by qualified technical staff with level 4 or higher certification. Next ranked were qualified managers with business and technical training and staff with level 3 certification.

The position was reviewed through a survey of 2009 NZ Turf Conference[3] participants and interviews with National Sports Organisations (NSOs) and industry bodies in June 2010. In contrast to the more general labour shortages noted in 2006, in 2010 shortages relate principally to skill sets (ie shortages of staff with experience and/or turf technical skills appropriate to the sports turf sector concerned, and management skills). Respondents noted difficulty in attracting and retaining 'enthusiastic and competent' young people with 'the right attitude' and a 'willingness to learn'.

Qualified managers with business and technical training were most frequently rated as greatly needed, followed by qualified staff with level 3 Certification, qualified technical staff with level 4 or higher certification, with the least need for unqualified staff with no certification. This was virtually a reverse of priorities from the 2006 position. The difference likely reflects an easing labour market as a result of the recession, and a higher value placed on management skills (addressed further in the 'future skills' section of this report).

No particular regional pattern to shortages was evident. In Department of Labour Job Vacancy Index figures comparing % change in job vacancies between May 2009 and May 2010, the only occupation related to the sports turf industry appearing in the figures was 'Gardeners' (source; Department of Labour Jobs On Line index). This showed an 11% increase in vacancies, however, the figure was not considered statistically significant.

Reasons for Labour and Skill Shortages

When asked to consider *why* labour shortages are being experienced, by far the most significant reason noted by respondents to the 2006 survey was 'low wages and salaries relative to other industries'. This was followed by 'lack of advertising and promotion by the industry' and 'a perception that the sports turf industry lacks career advancement'. A general tight labour supply was considered the least important of the reasons provided in 2006. These views were reiterated during listening sessions in 2008, and by respondents to the 2009 conference survey, along with poor succession planning, and overseas competition 'siphoning off' skilled labour by offering higher pay.

Volunteer Trends

The sports turf industry relies substantially on volunteers as a source of labour. According to the 2006 Sports Turf Industry Survey[1] 34% of workers over all sectors are full time, 18% part time, 30% volunteer and 18% contracted. The bowls and croquet sectors are dominated by volunteers, making up 81% and 68% of the workforce respectively. Catering for volunteers is an important part of the training strategy in these sectors. However, the number of volunteers working in the industry is declining (falling by an estimated 27% between 2000 and 2006 surveys). NSO managers interviewed in 2010 considered this to be due to a trend away from "true members" to casual players and "price taker customers" who are reluctant to commit to volunteer work, generational differences, and a changing social environment where members expect to "be served" rather than to serve. There is also a concern over OSH risks where volunteers perform functions, leading to reluctance of some organisations to utilise volunteer labour.

Growth Trends and Future Expectations

Growth Expectations

Overall, the sports turf industry is not characterised by rapid growth. Only 7% of respondents to the 2006 Sports Turf Industry Survey[1] expected strong growth, with nearly 80% expecting moderate or static business growth. Competition from other sporting and non sporting activities, the ageing population, the lack of time for sporting activities, the small population and the costs of playing sport were cited as obstacles to growth. Growth expectations were greatest in the council sector with nearly 50% of respondents expecting strong growth.

Interviews with NSO managers and industry groups in 2010 have confirmed this outlook. Golf, bowls, and equine sectors are all expecting some decline in the number of clubs due to rationalisation. Financial health and sustainability of some clubs is a key concern. This stems from an over-supply of clubs and a lack of resources to pay staff adequately and maintain facilities. The situation may be exacerbated with declining availability of volunteers leading to increased running costs, with work needing to be carried out by paid staff.

Lack of business skills and professional approaches to management are issues. There is a need for clubs to adapt to changing expectations of customers (for instance accommodating and welcoming higher demand for casual play), and to diversify services to generate revenue (e.g. hireage of facilities, catering etc). The challenge is for organisations to review their business models and practices to adapt to these changes.

The outlook for increased revenue from tourism is positive. While transactions with overseas clients is not a high proportion of the turf industry business directly, the economic and social benefits to the wider community and international exposure associated with hosting international sports, and sport tourism are significant. Deloitte[5] has estimated the total economic impact to a host nation for the Rugby World Cup alone at up to £2.1 billion (including indirect impact ripple effects).

Department of Labour Employment Estimates model (based on LEED data) estimates that the Greenkeeper occupation grew by 10.3 % between March 2005 and March 2010, or an average of 2.0% per annum. Between March 2009 and March 2010, numbers grew by 4.6% (to 3339 Greenkeepers in total in 2010). Workforce size and growth is discussed in further detail in Appendix 2, under 'Workforce growth trends'.

Quality Issues and Industry 'Outputs'

While some sectors are expecting a decline in the number of clubs, there is no reduction in expectations in terms of quality standards of playing surfaces. Playing surface quality and usage capacity (capacity of sports surfaces to withstand play under a range of environmental conditions) of sports surfaces could be regarded as the key outputs of the sports turf industry. Benchmarking of sports turf quality through objective performance measures has been an increasingly adopted feature in the industry in recent years, particularly in council and golf sectors. International events, media scrutiny, player safety and quality expectations drive the need for high quality sports turf surfaces.

When asked to consider why labour shortages are being experienced, by far the most significant reason noted by respondents to the 2006 survey was 'low wages and salaries relative to other industries'.

In terms of usage demand, nearly three quarters of Councils responding to the 2006 Sports Turf Industry Survey[1] expected usage demand to increase and 32% of schools. The theme of increased usage demand on limited recreational land within the sportsfields/council sector, particularly in Auckland, has been reiterated in 2010 interviews with NSOs.

The impact of quality criteria and high usage demand does not necessarily increase the *number* of workers required, but it elevates the *level* of skill required by turf managers and the need to competently utilise modern turf technology. Increasing usage demand, particularly where green space is limited, may lead to increasing pressure to provide all weather surfaces. Cooperation between sports sectors to meet community sport needs ('whole of sport' planning) may lead to increasing multiuse of facilities, and school and territorial authority cooperation. Cost benefit analysis of varying sports surface options will be required to support sound investment decisions.

Future Outlook

Given the conservative growth outlook by a majority of NSOs, it is probably reasonable to assume that turf industry workforce growth projections over the next few years are likely to be at a similar rate to that in recent years. If future growth is consistent with previous trends, higher levels of workforce growth may be expected in council and golf sectors, and relatively static or declining workforce numbers in the schools, bowls, racing and croquet sectors. No reliable data is available on the passive use amenity turf sector.

Training Supply and Demand in the Sports Turf Industry

Sports Turf Industry Qualifications

Currently, five qualifications designed specifically for the turf industry are registered on the National Qualifications Framework. These are briefly described as follows:

National Certificate in Sports Turf (Introduction to Turf Care), Level 3, 48 Credits

- Covers basic essentials of *sports* turf management theory.
- Includes sports turf sector specific electives and generic skills.
- Suitable for pre-employment training, initial training of new employees, volunteers, small business owners.
- Provides a pathway to the National Certificate in Sports Turf Management Level 4.

National Certificate in Amenity Maintenance, Level 3, 70 Credits

- Covers maintenance of *amenity* (passive use/ornamental) turf areas, and use of tools and equipment.
- Electives cover a diverse range of skills necessary for maintenance of amenity turf and garden areas.
- Provides a pathway to the National Certificate in Sports Turf Management Level 4.

National Certificate in Sports Turf Management, Level 4, 223 Credits

- Covers all disciplines in sports turf management.
- A primary trade national qualification for those people working or intending to work in sports turf management at a supervisory level.

National Certificate in Sports Turf, Level 5, 70 Credits

- A new qualification, first registered in May 2010, for those people working in management roles.
- Covers higher level sports turf, land-based environmental management and business management skills.
- Creates pathway opportunities to National Diploma in Sports Turf Level 6, National Certificate and National Diplomas in Business.

National Diploma in Sports Turf Management, Level 6, 120 Credits

- Recognises skills of an experienced professional sports turf manager.
- Electives cover high level turf technical and organisational management skills.
- Credit transfer is available for Massey University degree level papers. Option to complete Massey University Graduate Certificate in Science & Technology. (Subject to NZQA approval).

Relevance of qualifications to industry key skills and job roles is described further under the 'Turf Industry Qualification and Career Pathways'.

Training Provision

While the role of NZ Sports Turf ITO is to design and manage national qualifications for the sports turf industry, actual training and assessment is carried 'on-job' in the workplace, and 'off-job' by training providers. Training providers involved in the sports turf industry serve a small, highly specialised market. A majority of training content is specific to the sports turf industry. These largely act in a synergistic manner, serving different sectors of the market (e.g. pre-industry entry vs apprenticeship training) or cooperating around delivery of different course components to the same trainee group. Viability of ongoing provision depends on providers maintaining market share in a limited market, and gaining access to suitably skilled tutors and teaching equipment and resources. Training providers currently delivering sports turf industry qualifications include;

Otago Polytechnic

The Otago Polytechnic offers sports turf training towards national sports turf qualifications for students considering a career in the industry. It provides a link between pre-employment and employment. Students enrolled at the Otago Polytechnic can work towards achievement of the National Certificate in Sports Turf (Introduction to Turf Care) – Level 3 and the National Certificate in Sports Turf Management (Level 4). Otago Polytechnic works locally with the industry to provide work experience opportunities for students while they are studying.

The Open Polytechnic of New Zealand

The Open Polytechnic of New Zealand has provided distance learning to industry trainees enrolled with NZSTITO since the mid 1990's. A component of distance learning is included in the National Certificate in Sports Turf Management (Level 4). The National Certificate in Sports Turf (Introduction to Turf Care) – Level 3 is also offered as a distance learning package.

New Zealand Sports Turf Institute (NZSTI)

The NZSTI has also provided off-job delivery training to industry trainees enrolled with NZSTITO since the mid 1990's. Industry trainees enrolled in the National Certificate in Sports Turf Management (Level 4) attend a one week block course once a year with NZSTI over the 3 years of their apprenticeship. NZSTI also delivers regional training for industry trainees enrolled in the National Certificate in Sports Turf (Introduction to Turf Care) and the National Certificate in Amenity Turf – Level 3. The National Diploma in Sports Turf Management (Level 6) is offered by distance learning with NZSTI to industry trainees pursuing higher-level learning. Depending on subject selection by trainees, up to half of the new National Certificate in Sports Turf – Level 5 (pitched at people in management roles) may also be delivered by a mix of distance and face-to-face delivery by the NZSTI.

Unitec Institute of Technology

Unitec Institute of Technology is a distance provider for the new National Certificate in Sports Turf – Level 5. Unitec offers business management training to industry trainees enrolled in this qualification. The NZSTITO and Unitec work together to provide a needs assessment service prior to commencement of training to ensure that the content is relevant to developing their business acumen and management skills.

Massey University

Up until 2010, Massey University offered turf management papers. This has changed and a new credit transfer arrangement has been established. Students enrolled at Massey University may now credit a specific selection of Massey papers towards the (NZSTITO) National Diploma in Sports Turf Management, Level 6, at the same time achieving credit towards the (Massey University) Graduate Certificate in Science and Technology. (Subject to NZQA approval).

Waiariki Institute of Technology

Waiariki Institute of Technology was accredited as a provider for the first time in 2010. This provider offers a sports turf management course to students who can work towards achieving the National Certificate in Sports Turf (Introduction to Turf Care) – Level 3. Students participate in work experience opportunities as they prepare themselves for employment in the industry.

Industry Uptake of Training and Qualification Achievement

Less than 7% of the industry has qualifications in fields not related to sports turf (refer to Appendix 2, Educational Achievement). The vast majority of qualification achievement currently occurs through industry training. During 2009, over 95% of trainees enrolled in National sports turf qualifications were industry trainees with enrolled with NZSTITO. NZSTI and Open Polytechnic of New Zealand offer off-job training to industry trainees enrolled with NZSTITO and as such are included in NZSTITO statistics.

Trends in Qualification Achievement

Trends in qualification achievement for industry trainees with NZSTITO between 2006 and 2009 are described in Figure 1 below.

Figure 1 Number of Industry (NZSTITO) Qualifications Achieved with NZSTITO 2005, 2007, 2009

In total qualifications and LCPs achieved have decreased by 40% from 2005 to 2009. This is mainly due to reduction in level 3 qualifications and LCPs. Conversely, Level 4 qualification achievement has increased by 23%. New enrolments in NZSTITO programmes are showing an upward trend with figures for 2005, 2007 and 2009 at 189, 192 and 214 respectively (an increase of 13% over the period). This suggests that qualification completions will also trend upwards in future.

In addition to the above industry trainees, a further 3 graduated with the National Certificate in Sports Turf Management (Level 4) from Otago Polytechnic during 2005, 6 in 2007 and 2 in 2009.

Engagement in Training by Employment Status and Sector

During 2009, 579 trainees engaged in training with NZSTITO and fourteen were enrolled with Otago Polytechnic in year 1 or year 2 courses. Of the NZSTITO trainees, 80% were employees, 17 % volunteers and 3% self employed. 'Modern Apprentices' accounted for 20% of ITO trainees. A breakdown of the proportion of trainees engaging in training with NZSTITO by sector is set out in Figure 2 below.

Around 6% of the sports turf industry workforce (including volunteers) participated in training with NZSTITO in 2009 (the number of trainees enrolled with NZSTITO as a proportion of total sports turf industry workforce as per in Appendix 2, Table 1, including volunteers). Uptake of training varies substantially between industry sectors. Historically, the core market for turf specific training has been the *sports* turf management sector, principally golf, and sports fields (council sector), and more recently bowls. A higher proportional uptake and proportion of qualified staff (see Appendix 2, 'Educational achievement') in the golf and council sectors reflects this. Training for the Equine industry (Racing) is serviced collaboratively between NZSTITO and Equine ITO. Racing sector trainees included in the above figures are limited to those engaged in sports turf training (related to race track preparation).

Schools (specifically school grounds maintenance), while comprising the largest single industry sector in terms of workforce numbers (over 40% of workers estimated in the 2006 Survey), exhibit a low uptake of training. This may be because a high proportion of staff involved in turf management in schools have other principal roles (such as general caretaking) and/or are contractors. Staff in both these categories may be more reluctant to engage in turf management training than employees dedicated to turf maintenance. Respondents to NZSTITO surveys and listening sessions suggested that schools place a lower priority on physical education than other educational priorities (suggested by) and face affordability issues.

The lower priority of turf maintenance and/or training in the schools sector in comparison with councils may be impacting directly upon the quality of grounds. Regarding quality of sports fields, around a third of councils considered the quality of their grounds to be 'very good', compared with 16% of schools (2006 Sports Turf Industry Survey[1]).

Barriers to Participation in Training

The 2006 Sports Turf Industry Survey[1] indicated a low overall investment in training by employers. Figure 3 below shows the annual investment in off-job training by organisations in the sports turf industry established by the 2006 Survey.

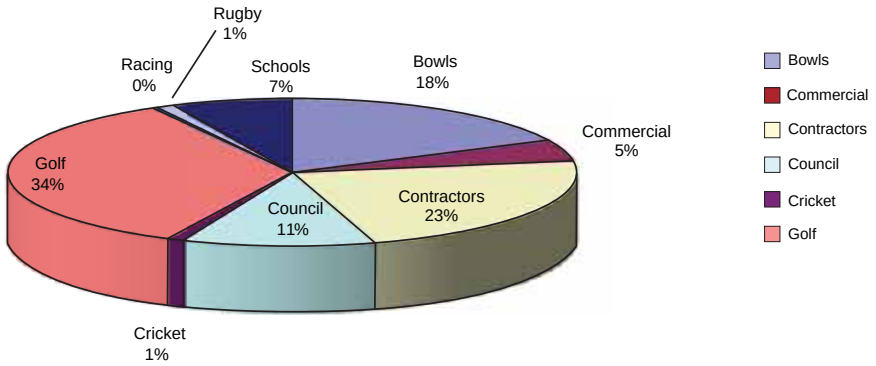

Figure 2 Proportion of 2009 NZSTITO Trainees by Industry Sector

NB: Cricket trainee participation is also included in the Council and Contractors sectors.

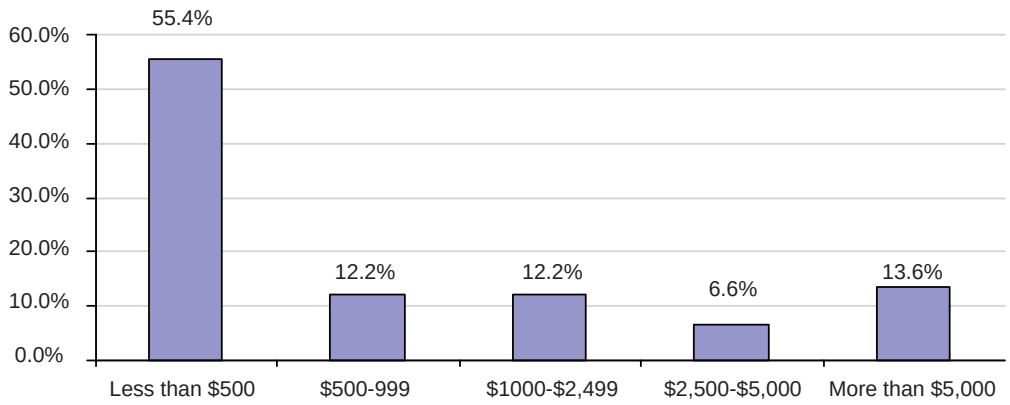

Figure 3 Employer Annual Investment in Off-job Training in the NZ Sports Turf Industry

More than half of the firms interviewed invested less than $500 annually in training, with two thirds investing less than $1000. Lack of investment in training is both a barrier to the initial uptake of training, and impacts on the progression of trainees to higher levels of learning.

Other barriers to engagement in training were identified in the 2006 Survey. The top five rated barriers were 'insufficient financial reward for the employee' rated as important or very important by 68% of respondents, followed by 'no clear link between training and career advancement' (65%), 'prohibitive expense' (61%) 'travel away from home associated with block courses' (60%), and 'lack of support from the company or Institution' (58%).

Future Training Supply and Demand

Training demand arises from industry *growth* (the number of new workers required to meet growth demand), industry *turnover* (the number of trained workers required to replace those exiting the industry, for instance through retirement, moving overseas or to other industries) and changes in the *uptake* of training amongst existing workers (eg through an increased proportion of workers in an industry sector getting qualified and by upskilling of current workers).

The 2006 Sports Turf Industry Survey[1] indicated that around 4% of qualified and 6.5% of unqualified staff leave the workplace within one year. More than half in either category remain longer than five years. The survey does not indicate whether these workers remained within the industry (simply transferring to another workplace) or exited the industry. It is the latter category that impacts most upon training and replacement labour demand. The sports turf industry has a comparatively old age profile (discussed further in Appendix 2, Workforce age). Replacing and training workers leaving the industry as a result of retirements will be a key need. Conversely, an old age profile may also signal that the workforce is relatively stable, as older workers are less inclined to move. This is supported by the 2006 Survey.

The conservative growth projections and relatively stable workforce suggest that growth demand for training driven by these factors is also likely to be relatively stable in the short to medium term. Of much greater significance will be changes in demand for training that may be generated through increased uptake of training within sectors not greatly engaged currently (industry 'penetration'), upskilling of qualified workers in new skills (such as environmental and management training), and replacement of workers exiting through retirement.

While the relatively stable workforce has some advantages in terms of reducing the need to train new workers, it can limit opportunities for career progression. The latter has been noted as a disincentive to engagement in training particularly at higher levels.

NZSTITO is currently working with the 'Primary Sector Group' (PSG)[a], a cluster of 7 primary industry ITOs cooperating around workforce strategy and training issues. The PSG has determined that its leadership priorities are to undertake a workforce analysis across the sectors represented by the ITOs, to undertake performance benchmarking and to lead work to harmonise qualifications across the primary sector. This will further investigate workforce flow and impact upon training demand across the sector.

[a] The PSG Group is made up of a collective group of 7 ITOs that is a fully functioning body with a range of projects underway. The Sports Turf, Equine, Seafood, Dairy and Meat Processing, Forestry and Wood Manufacturing, Horticulture and Agriculture ITOs form the PSG Group.

Summary of Key Industry Issues

The following section crystallises earlier research, and feedback received via the 2009 Turf Conference survey and 2010 interviews with industry bodies and NSOs, into seven key industry issues/needs. These issues in turn drive the development of the 'Industry Strategy' and the 'Turf Industry Qualification and Careers Pathways' highlighted later in this document.

1 More than half of the workforce remains unqualified and uptake of training is low in some industry sectors.

Lack of investment in training by employers in some industry sectors is a barrier to the initial uptake of training, and impacts on the progression of trainees to higher levels of learning.

Insufficient weighting placed on staff training as an attribute in (price driven) tender processes to select turf contractors acts as a disincentive to contractors engaging in staff training. This price driven approach, if continued is likely to exacerbate future skill shortages.

There are opportunities for growth in training, particularly in sectors which have not engaged to any great degree previously (such as the school and the passive turf maintenance sectors) and to increase uptake in sectors which do participate.

2 There is a need for enhanced management capability, and packages of training spanning a range of different levels.

There is a need for enhanced management capability amongst turf technical and facilities management staff. Club and facility managers need to be capable of recognizing and adapting to changing customer expectations (such as a trend away from traditional club membership towards casual play and 'pay for play' participation), running facilities with a clear focus on financial sustainability.

There is a demand for small and flexible packages of training (not necessarily related to qualification achievement) to upskill the current workforce in developing technologies and industry related issues and to maintain professional standards.

There is a need for mentoring support and development amongst turf technical and facilities management staff. Club and facility managers need to have the confidence to be able to develop their roles of manager, trainer and assessor.

3 There is a need for increased acceptance of the importance of ongoing training and to link this with professional standards and career pathways.

While sports turf qualifications have been available for some years at levels 3 to 6 of the National Qualifications Framework, historical uptake of training beyond level 4 has been minimal.

Lack of connection between qualification achievement (particularly at higher qualification levels) and career advancement and remuneration is seen to be a disincentive to engaging in training.

There is a need to raise professional standards of employees at organisation level if the sports turf industry image and performance is to be improved. Top class playing facilities require top class staff. This requires establishment of *professional standards* and *qualification pathways* that are clearly linked with career pathways and supported by employers and National Sports Organisations.

In terms of developing a skilled workforce, increasing the *supply* of training in isolation of other shifts in industry, is not likely to rectify the problem. In order to realise opportunities for growth in training, these industry issues need to be addressed, associated with clear demonstration of value add for participation in training (for both trainees and employers).

4 Low salaries and wages drive skill shortages and leakage of skilled people from the industry. There is a need to enhance industry image to attract high calibre recruits, and meet replacement demand driven by an aging workforce.

There is difficulty in attracting and retaining high calibre recruits – a higher proportion of staff enter the industry with no formal school qualifications than the workforce as whole. There is a need to raise the profile and image of the sports turf industry and improve the calibre of recruits entering the industry.

The sports turf industry median personal income is below that for the New Zealand workforce. Qualified workers are leaving the workforce to overseas for better pay. Low salaries and wages have been identified as a barrier to attracting high calibre recruits and to participation in training.

Many turf based sports facilities lack resources or management capability, arising from too many facilities serving too few members. A catch 22 situation exists where sporting venues cannot raise salaries because of low revenues due to inadequate memberships. In turn they are reluctant to raise membership fees because members are likely to go elsewhere. Unless the turf based sports facilities change their business model to meet the changing needs of their customers and adapt their practices, there is a risk of ongoing challenges with insufficient resources and management capability.

The turf industry workforce is aging with a much higher proportion of staff over 60 years of age than the workforce as a whole. Generally, succession planning is a weakness in the industry.

The workforce is currently drawn from a narrow demographic (predominantly European and male). In view of changing population patterns, unless the industry draws from a wider cross section of the workforce, there is a risk of ongoing skills and labour shortages.

5 There are challenges in maintaining a critical mass of training provision across a small highly specialised and widely dispersed industry.

Many turf technology and skill requirements are unique to the sector, and not readily transferable to or from other industries. For instance, while productivity (e.g. pasture and crop production) is typically a key

output in primary industries, playing surface quality and capacity are key outputs for the sports turf industry. Management practices reflect these outputs. This impacts on the ability of the ITO and providers to attract and retain staff with appropriate specialised skills.

The small market size and specialised nature of the industry creates challenges concerning the financial viability and sustainability of the training organisations and provision. This is particularly of concern for higher levels of training.

While there is scope for additional training, care needs to be taken that introducing additional training providers does not negatively impact on the viability of existing training organisations, or reduce the quality of provision through lack of access to appropriately skilled staff.

The most effective means of providing high quality, sustainable training is likely to be through a small number of specialised providers, with a national focus, rather than numerous regional training organisations.

In order to achieve this, training organisations need to act collaboratively, and adopt mechanisms of delivery that transcend geographical barriers (including electronic delivery), and make training accessible to all sectors of the market. Collaboration is equally important at ITO level, where NZSTITO is seeking to build and strengthen links with other ITOs, including the Primary Sector Group of ITOs.

6 There is a need to ensure effective communication and cooperation between the ITO, industry, and international turf sector organisations.

The ITO understands this need and is already working together with turf industry groups to enhance linkages between groups, exchange information and develop a cohesive, whole of industry approach to addressing industry issues.

The ITO needs to establish and maintain links with other education and research organisations in New Zealand and overseas to encourage research and innovation, and take maximum advantage of new technologies.

Industry needs to work together to exchange information that will promote and support technical and business innovation.

7 There is a need to develop mechanisms to support trainees with low levels of literacy and numeracy and ensure that these people are able to successfully engage in training.

40% of the New Zealand workforce has literacy levels below the minimum level required for optimal everyday life and work demands (Adult Literacy and Life Skills (ALL) Survey: Education, Work and Literacy, Ministry of Education, August 2008). If New Zealand is to build a high-skill, high-wage economy, it needs a population with high literacy and numeric skills. The ITO needs to work with employers and providers to ensure that training is pitched at an appropriate literacy level and to improve and increase the literacy of the turf industry workforce.

The ITO needs to support professional development for providers so that they have the tools to better identify trainees with literacy needs and to embed literacy into the delivery in a relevant way.

Summary of Future Skill Needs

The section below further considers key issues occurring in the turf industry and their likely impact on *future* skill needs. Note that while these issues have been distinguished for the sake of clarity, in practice a number are inter-related. They are;

1 Financial sustainability is a key challenge. This may result in increased rationalisation, amalgamations, and fewer facilities.

Skills impact;

- Facility amalgamations may lead to more multi sport venues, and more turf managers serving multiple facilities. There is a recent trend to a merging of roles between golf Club Managers and Turf Managers (Golf Course Superintendents). Turf managers will require the skills to manage a range of sports turf surfaces and functions.
- Enhanced leadership, management and communication skills will be required for both facility and course managers, along with more effective communication between staff at facility and course management levels. Qualified staff with business and technical training will be a key need.

2 Usage demand for sports facilities will increase, along with the need to maintain or improve sports surface quality.

Skills impact;

- Sports turf facilities will need to increasingly adopt construction and management technologies capable of sustaining increased usage while maintaining quality. This will require dissemination of information on new technologies, and management strategies to maintain these technologies.
- Usage demand may drive increased utilisation of synthetic turf surfaces, and adoption of new synthetic technologies. This in turn will drive a demand for training in the management of synthetics. There is a need to develop training specific to synthetic turf surfaces.
- Usage demand for green open spaces that are currently under-utilised will increase. With SPARC driving more school, sport and territorial authority co-operation to offer sports opportunities, there will be a push to use more school grounds for sports where community green space is limited. There is a need for collaboration and co-operation amongst organisations involved in sports.

3 Pressure on budgets is likely to increase, at least in the short to medium term.

Turf managers are facing increased pressure on budgets as a result of the recession, increasing resource costs and reducing facility membership income. Council sectors face demand from rate payers for high levels of service, while minimizing expenditure.

Skills impact;

- Sports turf facility and asset managers will face increased pressure to demonstrate efficient and economic management appropriate for their club or facility. This may include an increased demand to record usage levels and monitor turf performance against objectively defined turf performance standards. This in turn will need to inform asset management strategies and resource allocation to maximize efficiency.
- This will drive a need for higher level training in asset management strategies, financial management and analysis, methods of measuring and monitoring turf performance, predictive modelling, and contract establishment and management.
- Turf managers will require training to optimize efficiency in use of inputs such as fertiliser, energy, topdressing materials, water and agrichemicals.
- Turf managers will require well developed communication skills to communicate at multiple levels (for instance with councils, and at club level), articulate the need for resources, and influence decisions.

4 Environmental pressures will increase.

Through environment related legislation such as the Resource Management Act 1991 and Hazardous Substances and New Organisms Act 1996, increasing responsibility is being placed upon land-users to be environmentally responsible and accountable for their actions. This, together with changing weather patterns which may be associated with climate change, the loss to the industry of some commonly used pesticides due to adverse environmental effects, and rising cost of fuel and fertilisers will impact on the cost efficiency of, and access to sports facilities, and turf management requirements.

Skills impact;

- Staff at sports turf facilities need to be aware of environmental legislation, regional council resource management plans and city/district council plans, and their impact on sports turf facility management. This is required at both facility and course (turf) management levels.
- The industry will need to be kept informed of changes in availability of agrichemicals and/or any changes in how retained products can be used. Loss of products may require development of alternative pest and disease management strategies, with obvious flow on effects for training.
- Turf managers will require knowledge of the emissions trading scheme and its impacts on the sports turf industry.
- Turf managers, particularly in golf course and council, will need to be able to develop and implement strategies to maintain and increase biodiversity and protect and enhance the environment.
- Turf managers will need to be aware of the potential impacts of climate change including;
    - Development of risk management strategies to deal with increased frequency of extreme weather events (flooding, drought).
    - Incidence of new pests and diseases occurring in response to climate change along with appropriate pest management strategies.
    - Greater need for skills in the management of warm season grasses.
- Turf managers will require training in techniques for managing turf areas under low water input regimes and enhanced skills in water budgeting and monitoring of water use.
- Turf managers will require training that will support improved environmental sustainability of turf facilities, including developing sustainability strategies, conducting environmental audits and development and implementation of environment management systems and plans (including water and nutrient management plans). This is required alongside training in communicating with users concerning the impact of strategies on playing surface standards.

Turf Industry 'Qualification and Career Pathways'

Consultation during the development of the Industry Training Strategy repeatedly emphasised the need not only to have training spanning a range of different levels, but to link this together with career pathways that are recognised and supported by the industry. The 'Turf Industry Qualification and Career Pathways' links industry career pathways, typical job roles and associated key skills, with a qualification and training delivery strategy.

The delivery strategy identifies available provision via accredited training providers at the time of writing. It includes both training that is currently available, and initiatives that are proposed and/or under development to meet future skills needs. It is not intended to preclude the development of additional provision by new and/or currently accredited providers, but sets out a skills framework within which further training development may be considered.

'Turf Industry Qualification and Career Pathways' links industry career pathways, typical job roles and associated key skills, with a qualification and training delivery strategy.

TURF INDUSTRY QUALIFICATION & CAREER PATHWAYS

Career Pathways	Key Skills	Delivery	Qualifications
• Land based industry worker	• Generic land based workplace OSH • Equipment operation and maintenance • 'Soft' skills	• Schools-based education	[3]Gateway; [4]Primary sector L1 Qualification
• Grounds person • Volunteer • Bowls greenkeeper • Lawn care and passive (amenity) turf worker	• Generic and sector specific turf technical (including synthetics) • Related amenity horticulture • Fertiliser, fuel and agrichemical transport, storage, use and disposal	• Workplace based assessment • [2]Electronic/block course delivery via NZSTI • Correspondence via The Open Polytechnic of New Zealand; Included in a • Full time (2 year) programme via Otago Polytechnic • Full time (1 year) programme via Waiariki Institute of Technology	NC In Sports Turf (Introduction to turf care) L3 and NC in Amenity Turf Maintenance L3
• Turf manager • Head greenkeeper • Course superintendent • Race course manager	• Introductory HR, financial and plant management • IT skills • High level generic and sector specific technical • Turf facility construction,	• 3 year conventional and Modern Apprenticeships via NZSTITO • Full time (2 year) programme via Otago Polytechnic	NC in Sports Turf Management L4
• Certified[1] Turf Manager • Club/organisation manager • Asset /contract manager • Turf consultant • Turf tutor/education • Researcher	• Advanced turf technical • High level turf facility and equipment design • Planning, management and leadership • Financial management • Asset management • Project management • Contract management • Performance testing • Event preparation and management • Environmental legislation, conservation and auditing • Sciences	• Electronic and/or correspondence with block course option via NZSTI and Unitec Institute of Technology	[5]NC in Sports Turf L5
		• Correspondence via NZSTI and Massey University	National Diploma in Sports Turf Management L6
			Degree & Postgraduate programmes

EMBEDDED LITERACY

Footnotes to Turf Industry Qualification and Career Pathways

1 *Certified Turf Manager; a possible future certification recognizing proficiency and ongoing development by practitioners. The concept would require extensive consultation and development before establishment.
2 Electronic delivery is currently under development and will be progressively rolled out.
3 'Gateway' training for school students in sports turf industry skills is currently offered through the NZSTITO and the Open Polytechnic. The Open Polytechnic also offers 'STAR' training for school students interested in finding out what the sports turf industry is about.
4 A primary industry cross sector Level 2 qualification is under development within the Primary Sector Group (PSG) of ITOs.
5 The National Certificate in Sports Turf Level 5 is a new innovative qualification designed to lift the quality and standard of business acumen and capability for managers working in the industry. This includes environmental training options.

Sports Turf Industry Strategy

The 'Industry Strategy' has been developed through a Strategic Planning Process implemented over 2008 and 2009. The Turf Industry Qualification and Career Pathway overlaps and is linked with the Industry Strategy, recognising that the training pathway needs to be supported by broader industry initiatives to gain traction. Together these initiatives are designed to address the industry issues and future skill needs described previously and set out a way forward that will lead to a more professional, cohesive and highly skilled turf industry.

Mission Statement

Promote world class turf for sport and amenity uses through excellence in turf management training.

Goals	Objectives	Strategies	Indicators
Goal 1: Openly exchange information for the purposes of training within a cohesive sports turf industry	**Objective 1:** Strengthen financial viability and political capability of the NZSTITO to enhance training for the sports turf industry	**Strategy 1:** Acquire support from industry	**KPI 1:** Ensure ITO has support and representation from all major sports turf sectors. **KPI 2:** ITO conduct study identifying political & financial opportunities **KPI 3:** Identify dollar requirements and diverse funding sources **KPI 4:** Acquire resources and develop industry supported plan **KPI 5**[(i)]: Work with other allied ITOs to strengthen capability of NZSTITO
	Objective 2: ITO works together with turf industry groups[(ii)] to contribute to enhancing linkages and improving communication	**Strategy 1:** Attend and/or contribute to turf industry groups through face to face meetings, publications, broadcasts, and focus group meetings	**KPI 1**: Industry sector groups liaise with the ITO on training matters and utilize ITO resources for training activities **KPI 2:** Secure a speaking slot for ITO at future NZ Turf Conferences **KPI 3:** ITO becomes a member on the Turf Conference Governance Group **KPI 4:** ITO has representation on the Turf Conference Organising Committee
Goal 2: Continue to improve training to promote technical and business innovation, education and training opportunities within the sports turf industry	**Objective 1:** Undertake review of existing training provision and identify immediate, medium and long-term technical, business and innovation training needs.	**Strategy 1:** Conduct training review with turf industry groups	**KPI 1**: Analyse training levels of recent graduates **KPI 2:** Execute and analyse exit interviews with those people moving within or leaving the industry **KPI 3**: Confirm current and future training needs including levels of provision **KPI 4**: Review assessment and moderation process **KPI 5**: Review education demand and supply of training provision **KPI 6**: Write formal report with recommendations
	Objective 2: Implement report findings	**Strategy 1:** ITO works with turf industry groups to respond to training needs.	**KPI 1:** ITO reviews qualifications and units in response to new and innovative training needs **KPI 2:** ITO develops training solutions consistent with new concepts or innovations **KP1 3:** Promotion of objectives at conferences, seminars and field days

Goal 3: **Establish professional standards for industry employees**	**Objective 1:** Review & develop professional standards and identify career paths	**Strategy 1**: Review current professional standards and career paths	**KPI 1**: Written report submitted to industry
		Strategy 2: Turf Industry Groups and ITO review recommendations	**KPI 1** Turf Industry Groups and ITO assess and evaluate recommendations **KPI 2** ITO develops and implements plan based on advice & resources
Goal 4: **Increase the sports turf industry profile to promote career paths and training opportunities**	**Objective 1:** Identify benefits of working in the sports turf industry	**Strategy 1**: Conduct a study to document benefits **Strategy 2:** ITO to work with Turf Industry Groups including the TIPG[iv] to develop promotional program	**KPI 1**: Benefits documented and report written **KPI 1:** Financial resources acquired for promotional program **KPI 2:** Promotional program developed and implemented
	Objective 2: Identify the benefits of the sports turf industry to the community and the environment	**Strategy 1**: Conduct a study to document benefits **Strategy 2:** ITO to work with Turf Industry Groups including the TIPG[iv] to develop promotional media activities	**KPI 1**: Benefits documented and report written **KPI 1:** Financial resources acquired for promotional program **KPI 2:** Promotional program developed and implemented
	Objective 3: Develop training-linked strategies to enhance employment-related opportunities and staff retention	**Strategy 1:** Conduct a study to document benefits. **Strategy 2:** Inform and build understanding in employer groups and associations about the benefits of an educated and skilled workforce	**KPI 1**: Benefits documented and report written **KPI 1:** Work alongside Turf Industry Groups including the TIPG[iv] to develop an approach to inform and encourage employer groups and associations to use qualified staff **KPI 2**: Promotional information created in a variety of media. **KPI 3**: Engage in discussion with relevant parties to establish how industry qualified employees can be best represented

Footnotes to Industry Strategy

i. Goal 1; KPI 5: Refers to work with other ITOs such as the Primary Sector Group (PSG) of ITOs to strengthen capability and service options to industry.

ii. Goal 1; Objective 2: Turf Industry Groups refers to industry body groups and collective groups such as; NZ Golf Course Superintendents Association (NZGCSA), Golf Managers Association (GMA), New Zealand Recreation Association (NZRA), NSOs Sports Field Forum NZ Inc, Turf Industry Profiling Group (TIPG), Racecourse Managers Association, the Turf Industry Collective of New Zealand.

iii. Goal 3; Refers to work underway through the Turf Industry Collective of New Zealand. This collective is made up of cross-section of sports turf industry organizations that have agreed to work together to lift the quality and standard of the industry.

iv. Goal 4: TIPG – refers to an industry group of organizations with the aim of advancing the development of people who want to work within the industry. The key focus of this group in the early 2000's, when labour shortages were being experienced, was to attract people into the industry.

References

1. Haydu, John; Way, Brian; Hodges, Alan, 2006, "NZ Sports Turf Industry Survey and Future Skills Analysis Project".
2. Pells, Sharon, NZIER, 2007. "Profile and Trends in the NZSTITO-related Workforce, Analysis of Census Data". Report to NZSTITO.
3. NZSTITO, 2009. "2009 NZ Turf Conference Survey". Unpublished.
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5. Deloitte and Touche LLP, 2008. "Potential Economic Impact of the Rugby World Cup on a Host Nation".
6. Way, Brian, 2001. "New Zealand Turf 2000". New Zealand Turf Management Journal". Volume 16, No 3. August, 14-18.
7. Way, Brian. 2007. "Skills for the Future In The Turf Industry". Proceedings of the 2007 NZ Turf Conference.
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Appendix 1

Research Supporting the Strategy

The 2011 to 2013 NZ Sports Turf Industry Strategic Training Plan has been developed based on a series of interrelated research and consultation processes conducted from 2006 to 2010. These are summarised below.

NZ Sports Turf Industry Survey and Future Skills Analysis Project 2006

During 2006 NZ Sports Turf ITO commissioned the 'NZ Sports Turf Industry Survey and Future Skills Analysis Project'[1]. This was conducted by Dr John Haydu and Alan Hodges, University of Florida, USA and Brian Way of the NZ Sports Turf ITO. The survey focused on golf courses, bowling clubs, organisations providing turf management services to councils, race tracks, public and private schools, and croquet clubs, and built upon similar surveys conducted in 1992 and 2000. Some major turf based sports, such as cricket, winter sports played on sports fields (eg rugby, football etc) were not specifically identified in the 2006 Survey. This is because these sports are substantially conducted on grounds owned and/or managed by councils, schools and turf management organisations supplying services to these sectors. In this respect needs relevant to these sports have been indirectly addressed under council and school categories.

The Industry Strategic Training Plan draws substantially from and builds on information arising from this survey. In some instances (noted in the text) original source data has been taken from the 2006 survey and analysis has been revised for publication in the Industry Strategic Training Plan. This has resulted in some variation between information published in the Industry Strategic Training Plan and the original 2006 survey report.

NZIER Analysis of Census Data (2007)

During 2007 NZIER were engaged by NZSTITO to examine the profile and trends of employment in industries and occupations relevant to NZSTITO, providing a "check" and comparison to data gathered by NZSTITO's 2006 survey. This study comprised an analysis of customized demographic, education and labour market data from Statistics New Zealand's 2001 and 2006 Censuses. This provided a 'snapshot' at the time describing the stock of people working in NZSTITO-related industries and occupations and enabled comparisons to be made between the NZSTITO-related workforce and the workforce in general. Results are set out in an NZIER report to NZSTITO[2].

Strategic Training Process 2008/2009

During April 2008, Dr John Haydu again worked with NZSTITO to develop a 'Draft Strategic Training Plan' for the NZ Sports Turf Industry. This served as a follow up to the 2006 survey, with the express intention that the plan not be limited to a focus on training providers, but consider the entire sports turf industry. This involved the implementation of a *Strategic Planning Process* (SPP) to; decide what must be done differently in the skills and training area to improve the industry's long-run economic performance; collaborate with major industry stakeholders; debate and reach a consensus on the most important issues facing the industry and how to manage the risks arising from them; and develop options or strategies for tackling them.

The SPP resulted in the formulation of a Mission statement and a series of Goals, Strategies and Indicators for the New Zealand Sports Turf Industry. These included objectives and strategies that may be directly resourced and implemented by NZSTITO and those that require funding and/or cooperation from other sources. The Strategy was developed through a robust process of industry consultation and is the basis of the 'Industry Strategy' set out in this document.

NZ Turf Conference Survey 2009

The Industry Strategy thus developed was presented at the 2009 NZ Turf Conference. Participants were also asked to complete a survey responding to a series of questions regarding current and future skills needs, industry issues and trends. A total of 91 responses were received. While the survey responses have not been specifically itemised, these have informed the content of the Sports Turf Industry Strategic Training Plan. Survey responses substantially confirmed issues identified in earlier research work and endorsed the direction of the Industry Strategy.

Compilation and Publication of the Sports Turf Industry Strategic Training Plan

During 2010, MWB Consultancy Ltd was engaged to analyse and synthesise information previously obtained, identify additional research requirements and complete the 2011-2013 Strategic Training Plan. A survey instrument was designed and interviews were conducted with representatives of National Sports Organisations and industry bodies (including NZ Golf, Bowls NZ, Equine ITO, NZ Recreation Association, SPARC, NZ Golf Course Superintendents Association, Golf Managers Association, and NZ Cricket) to verify and update information arising from previous work and assess industry issues and trends. Other development work included further analysis of 2006 survey source data, review of current labour market and educational data, and formulation of and consultation on a sports turf industry Qualifications and Careers Pathway.

Appendix 2

Characteristics of the New Zealand Sports Turf Industry

The Scope and Nature of the Sports Turf Industry

The 2006 NZ Sports Turf Industry Survey[1] estimated that an area of 122328 ha of land is dedicated to sports turf activities (including land for buildings and gardens). Of the six major industry sectors examined, schools accounted for nearly half (48%) of the total land area, councils 30% and golf 20%. Bowls, racing and croquet utilized the remaining 2%. Of this industry area, 58139 ha (48%) was made up of managed turf grass area for sports and amenity use. The sports turf industry was estimated to have nearly $33 billion in assets (including land buildings, improvements and equipment), with $356.62 million spent on annual operating expenses. Salaries and wages are the largest single budget category, accounting for 41% of total expenses.

The majority of business in the industry is domestically generated. Respondents to the 2006 survey indicated that 96% of business transactions were with domestic clients and 4% international. Golf and councils sectors indicated the highest proportion of international business, at 8% and 25% respectively. Both of these sectors benefit directly from tourists visiting New Zealand.

The Sports Turf Industry Workforce

Workforce Size

Estimates of sports turf industry size have been established through the NZ Sports Turf Industry Survey and Future Skills Analysis Project[1] and an analysis of 2006 Census data conducted by NZIER[2]. A (revised) estimate of workforce size based on 2006 Sports Turf Industry source data indicates the sports turf sector workforce to be 9841, including 6875 paid workers (full time, part time and contracted) and 2966 volunteers. An estimation based on Census data (including workers in occupations and industries characteristic of the turf industry) places the number of *paid* workers at 8742. Combining the upper of the two figures for paid workers, the turf industry may be estimated at around 8740 paid workers and 3000 volunteers. Both sources of information have limitations in accuracy. The limitations and derivation of these workforce size estimates is discussed further below.

2006 Census

While the Census data is useful for demonstrating some characteristics and trends relevant to the sport turf industry, the 'fit' between the Census data and the sport turf industry workforce is not precise. That is, the industry and occupation classifications used in the Census data (ie the Australia and New Zealand Industry Classification and Occupation Classifications – 'ANZSIC' and 'ANZSCO') do not correspond well with the sports turf industry and the occupations (roles of workers) within that industry. This is generally an issue with any analysis based on these classifications and limits the usefulness of much national statistical data currently available.

The single *occupation* classification that most closely fits the sports turf industry is 'Greenkeeper'. In 2006, 2634 people were employed in this occupation. Turf management (including both sports and passive use turf areas) activities may be involved in a range of other occupation classifications, including Landscape gardener, Gardener, and Garden labourer. Altogether 14421 persons are employed in these occupations (inclusive of Greenkeeper). In terms of estimating turf industry workforce size, the Greenkeeper occupation is too narrow (it does not capture the entire workforce involved in turf management). Conversely, when expanded to include all four occupations above, the size is probably too broad (for instance it includes workers employed in general gardening activities, for which turf management may only be a small component of the role).

Another way to group workers is to consider the *industry* in which they are employed. The NZIER analysis selected four *industry* classifications as being most inclusive of the turf industry workforce. These were Landscape Construction Services; Sports and Physical Recreation Venues, Grounds and Facilities Operation; Sports and Physical Recreation Clubs and Sports Professionals; and Gardening services. These industries are again much broader than the turf industry. However by cross tabulating the industry classifications with the four occupation classifications a better picture may be gained of the workers within these industries who are likely to be engaged in turf management. This is the intersections of the shaded sections in Table 1, in Appendix 3, a total of 7125 workers. When expanded to include all workers employed as 'Greenkeepers' the total rises to 8742.

The Census data includes workers engaged in passive use turf maintenance (e.g. domestic lawn mowing contractors) that may not be included in the NZSTITO sports turf industry surveys. Conversely, the Census does not include volunteers which are an important part of the industry workforce.

NZ Sports Turf Industry Survey and Future Skills Analysis Project

Accuracy of the NZ Sports Turf Industry Survey and Future Skills Analysis Project[1] is limited by the number of responses received (sample size) and its representation of the industry as a whole. Responses were received from around 7% of sports turf industry clubs and organisations included within the surveys scope (ranging from a low of 2% of schools, to a high of 40% for the council sector). The 2006 Survey suggests that

Table 1: Sports Turf Industry Workforce Size

SUMMARY OF REVISED 2006 SURVEY ANALYSIS					
	Full Time	**Part Time**	**Volunteer**	**Contractor**	**Total**
Golf (400 clubs)					
Workers per venue	3.3	0.5	2.2	0.2	6.2
Workers in sector	1327	207	893	67	2494
Bowls (670 clubs)					
Workers per venue	0.2	0.2	2.4	0.2	3.0
Workers in sector	122	152	1604	102	1980
Council (72 councils)					
Workers per venue	7.2	0.6	0	1.5	9.3
Workers in sector	515	42	0	111	668
Racing (44 venues)					
Workers per venue	1.9	1.1	0	0.3	3.3
Workers in sector	84	48	0	11	143
Primary & Combined School (2246 schools)					
Workers per venue	0.4	0.4	< 0.1	0.6	1.4
Workers in sector	780	877	96	1366	3119
Secondary School (354 schools)					
Workers per venue	1.5	1.1	< 0.1	< 0.1	2.6
Workers in sector	513	372	18	9	912
Croquet (139 clubs)					
Workers per venue	0	0.4	2.6	0.8	3.8
Workers in sector	0	62	355	108	525
Grand Total Workers	**3341**	**1760**	**2966**	**1774**	**9841**

NB: Worker per venue numbers have been rounded.

Source: 2006 Sports Turf Industry Survey[1], Unpublished data,

there are 18417 paid workers (full time, part time and contracted) and 5520 volunteers over all sports turf industry sectors. This is much greater than the 5792 paid workers and 4087 volunteers estimated in a similar survey carried out in 2000, and published in the New Zealand Turf Management Journal. Limitations of the 2006 survey data have been reviewed by Way[7], 2007 in which it is suggested that the 2006 survey *overestimates* workforce size.

A revision of sports turf industry workforce size based on 2006 Survey source data (unpublished) established utilising alternative methodology is set out in Table 1 above. This estimates sports turf industry workforce size to be 6875 paid workers (full time, part time and contracted) and 2966 volunteers. The table also sets out the average number of turf employees per venue in each sector.

The NZSTITO surveys capture turf management staff only in the sports turf industry. These figures do not include staff involved in functions beyond turf management (eg sports club management and administrative staff) or the numerous mowing contractors serving the passive use turf market.

Sector breakdown

The largest single group of workers in the 2006 survey is within the schools sector. Ministry of Education data (April 2010) based on the payroll system for state integrated schools identifies 511 workers paid by schools as grounds persons and a further 2843 as caretakers. Caretakers may also have turf maintenance responsibilities. The Ministry of Education data does not capture contracting organisations (such as garden and lawn care franchises) and volunteers that may be engaged by schools to maintain grounds. Only 500 workers (183 from primary schools) appear in occupations considered inclusive of the turf industry in the NZIER analysis[2] of the 2006 Census in comparison with 4031 estimated by the 2006 Sports Turf Industry Survey (revised). This may be due to school turf workers (including contractors) in the Census being listed under other occupation and/or industry classifications.

A breakdown of worker numbers between sectors included in the 2006 Sports Turf Industry Survey[1] is set out in Figure 1 on page 23. Second to schools, the highest number of workers (including volunteers) exists in the golf sector followed by bowls and councils. The 2006 Sports Turf Industry Survey had limited information on the Cricket Sector

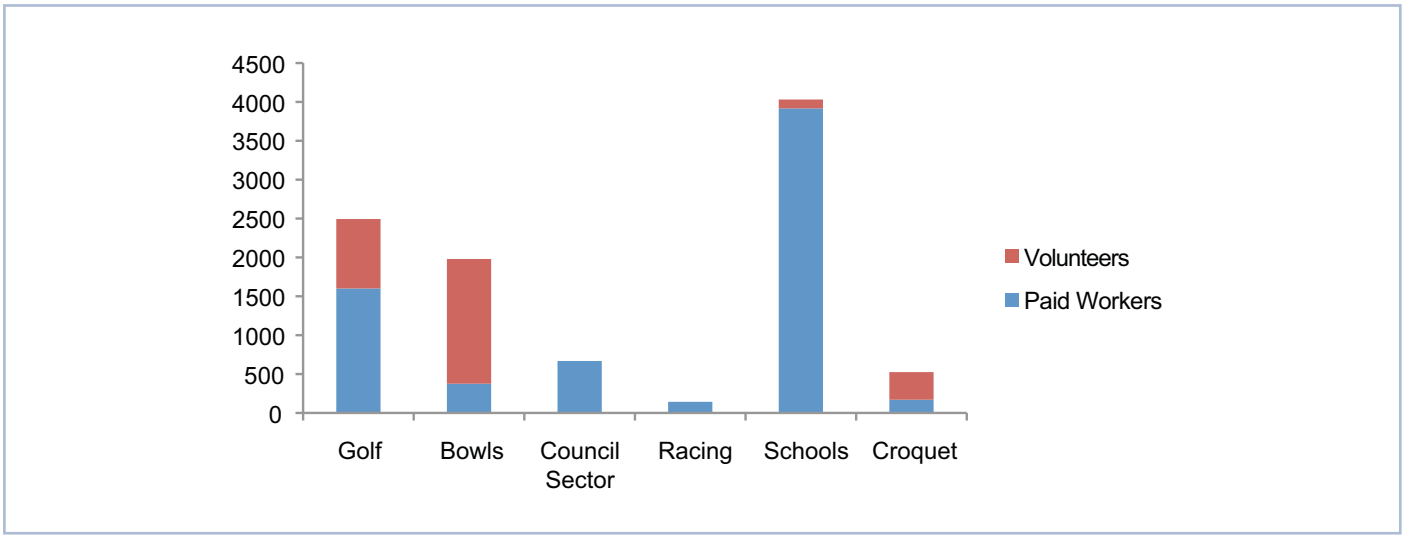


Figure 1 Distribution of workers between sports turf industry sectors

Source 2006 Sports Turf Industry Survey[1] source data (unpublished)

volunteers. Currently, it is estimated that 300 people are involved in the preparation of cricket pitches on a weekly basis and this can increase up to 1000 during game day across all levels of cricket in New Zealand.

Workforce Growth Trends

In the five years from February 2004 to February 2009, the number of workers in the Industry 'Sport and Physical Recreation Clubs and Sports Professionals' grew by only 0.6% from 4740 to 4770 (Source; ITF Industry Profiles, Business Demography Data[8]). This is much less than the growth of 7.1% in the total number of workers for all industries over the same period. However, while the Sport and Physical Recreation Clubs and Sports Professionals' contains more of the Greenkeeper occupation than any other single industry classification, Greenkeepers still only account for around 16% of the total number or workers in this industry.

A more accurate picture of workforce growth in the turf industry may be obtained by considering the occupation classification Grounds or Greenkeeper. Growth in this classification over 2001 to 2006 (NZIER analysis of Census data[2]) was 8.5%, *less* than the 15% national growth across all occupations. Considering more recent data, the Department of Labour Employment Estimates model (based on LEED data) estimates that the Greenkeeper occupation grew by 10.3 % between March 2005 and March 2010, or an average of 2.0% per annum. Between March 2009 and March 2010, numbers grew by 4.6% (to 3339 Greenkeepers in total in 2010).

Contracting in the turf industry

The role of contractors supplying turf maintenance services to the sports turf industry is important. Contracting practices might range from engaging contractors to carry out certain aspects of turf management, such as renovation or mowing, to contracting out *all* turf maintenance for a turf facility. The size and nature of contracting organisations also vary greatly. A 'contractor' might be an sole individual engaged by a bowling club or several bowling clubs to care for greens, or a contracting firm of 50 or more staff contracted to carry out all turf maintenance (and other operations) for a Council.

Figure 1 above does not distinguish between workers who may be employed directly by a *turf organisation* (eg golf or bowling club) and those who may be employees of contracting *firms* responding to the 2006 survey. For instance, in the sector supplying services to councils, 59% of the organisations responding to the survey were actually contracting firms. These contracting firms in turn employed over 80% of full time turf management workers recorded in the Council sector (2006 survey unpublished data). Conversely, in the golf sector the vast majority of workers were employed by golf clubs directly.

A better indication of the prevalence of contracting may be gained by considering expenditure on turf maintenance. The 2006 Sports Turf Industry Survey[1] estimated that 18% of industry expenditure went on turf contractor fees (which may include material and equipment supply). This ranged from a high of 58% amongst croquet clubs, followed by 53% amongst councils, 14% for racing, 12% for bowls, and 9% for schools, to a low of 3% in the golf sector. The NZ Recreation Associations 'Yardstick' report[9] for 2007 estimates that 62% of sports surface maintenance in the council sector is undertaken by contractors with 36% undertaken by in-house staff or council business units, 9% by sports clubs and the remainder from other sources.

Gender and Ethnicity

Gender and ethnicity statistics based on the 2006 Sports Turf Industry Survey[1] are as follows.

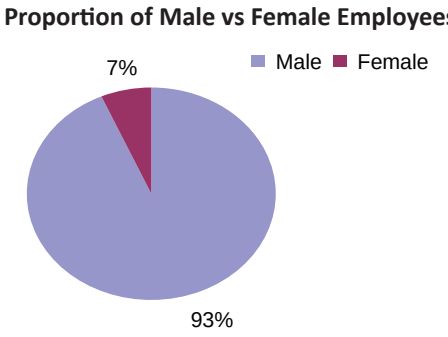


Figure 2. Share of male and female employees in the New Zealand sports turf industry.

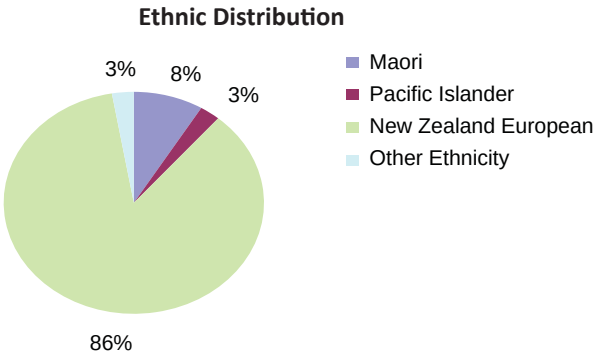


Figure 3. Ethnic distribution of employees in the NZ sports turf industry in 2006.

2006 Census results for the occupation 'Greenkeeper' show a similar pattern, with 6.8% female, and ethnicity made up of 74.6% European, 12.7% Maori, 2.6% Pacific peoples, 1.1% Asian and the remainder in other categories. This may be compared with the total New Zealand workforce of 47.1% female, 68.8% European, 11.3% Maori, 4.8% Pacific peoples and 8% Asian.

The figures demonstrate the sports turf industry draws workers from a narrow slice of the population, in terms of gender and ethnicity (predominantly European and male). The gender and ethnicity profile of 2009 trainees enrolled in sports turf training with NZSTITO reflects a similar pattern (97% male, 3% female; 85% European, 9% Maori, 2% Pacifica, 2% Indian, 2% unknown). In contrast the most rapidly growing groups in the New Zealand workforce are Maori, Pacifica and (especially) Asian ethnic groups. If the sports turf industry continues to recruit from the current narrow population base, it may have greater difficulty in finding skilled people in the future.

Workforce Age

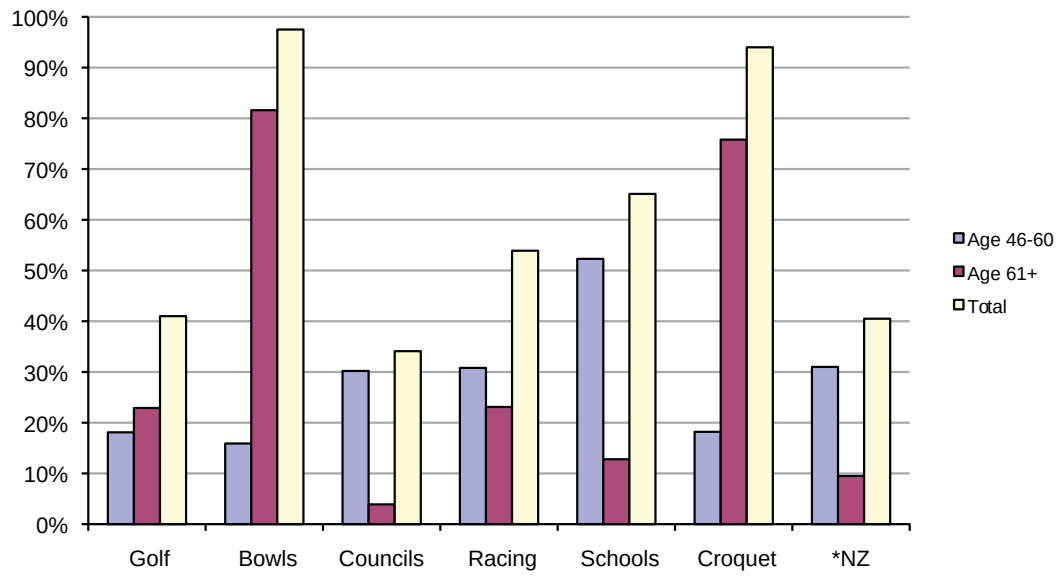
The sports turf industry has an aging workforce. According to the 2006 Sports Turf Industry Survey[1] 2% of the workforce are aged 15 and under, 11% aged 22 to 30, 23% aged 31 to 45, 36% aged 46 to 60 and 28% aged 61 and over. Nearly 64% of the workforce are aged 46 and above. This compares with 41% of the New Zealand workforce aged 45 and above at the 2006 Census. Data from the 2006 Census for the occupation 'Greenkeeper', supports the picture of an aging workforce. Here the proportion of the workforce aged 60 and over (19.5%) is more than double that for the New Zealand working population (9.5%). Figure 5 below considers the age profile of the sports turf industry workforce at sector level.

While an aging workforce is evident over most of the industry, the trend is particularly noticeable in the bowls sector, with over 80% aged 61 and over. This sector is characterised by a high proportion of volunteers, many of whom have retired from other occupations. The aging workforce was raised as a key concern in 2008 sports turf industry working groups and the 2009 NZ Turf Conference survey[3]. If this issue is not addressed through effective strategies to attract and retain younger people, and effective succession planning, it will exacerbate future skills shortages.

Educational Achievement

Educational achievement of sports turf industry workers recorded in the 2006 Sports Turf Industry Survey[1] survey is set out in Table 1 below.

Figure 4. Age profile in the sports turf industry workforce



Source; 2006 Sports Turf Industry Survey[1]. Unpublished data (*NZ workforce, ages 45-59, and 60 plus, 2006 Census).

Table 2. Educational qualifications of employees in NZ sports turf industry, 2006.

Educational Qualification	Percent Share
1.Trade Certificate in Golf Course or Sportsfields	7.2%
2.Certificate in Sports Turf Management (Level 4)	10.2%
3.National Certificate in Sports Turf (Level 3)	7.7%
4. National Certificate in Amenity Turf Maintenance (Level 3)	2.4%
5. Trade Certificate or National Certification in Amenity Horticulture	3.0%
6. Diploma in Turf Culture (equivalent to level 4)	4.0%
7. University Degree/Diploma (Turf/Horticulture/Agriculture)	2.0%
8. Overseas Turf Qualification	1.7%
9. Other Turf Qualification	2.4%
10. Qualified in unrelated field	6.8%
11. Unqualified	52.6%
Total	**100%**

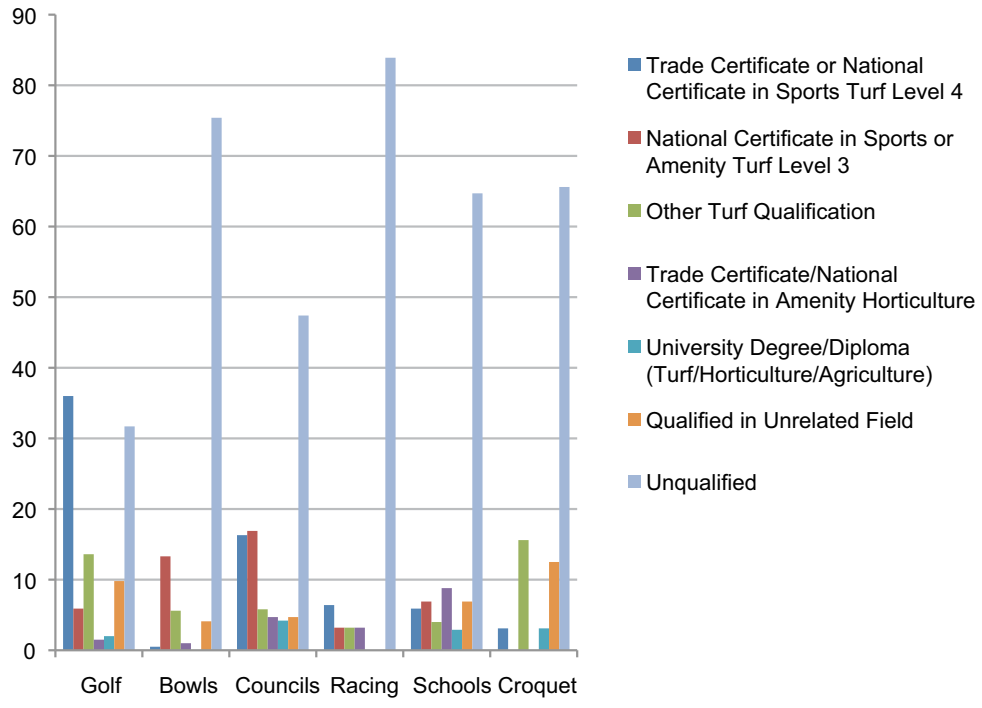
The 2006 Survey showed that 24% of workers held a Level 4 or equivalent qualification in sports turf or a related field. Only 2% indicated that they held a degree or level 6 Diploma and a concerning 53% indicated they were unqualified in turf or any other field. Results by industry sector are set out in detail in below.

The proportion qualified varied substantially between sectors, from a high of 59% holding a turf related qualifications within the golf sector (68% if non turf qualifications are included), followed by 48% holding a turf related qualifications in councils, to a low of 16% in racing. Of schools, 28% had some turf related qualification. The 2006 survey did not distinguish qualification achievement by employment status. If it is assumed that turf related qualifications are principally held by paid workers (as opposed to volunteers), the proportion of *paid* workers holding turf qualifications may be higher than those stated above.

An analysis of qualifications held by workers in occupations and industries related to the sports turf industry based on 2006 Census data shows that a higher proportion of workers with the occupation 'Greenkeeper' (32%) had no qualification either at school or post secondary school, than for the total New Zealand workforce (17.9%). When school qualifications alone are considered, 2006 census data for the Greenkeeper occupation indicates that 44% had no formal secondary school qualification in comparison with around 24% of the total workforce. Typically, people with few or no school qualifications have greater literacy and numeracy needs, and may lack essential skills that provide a basis for further learning.

Conversely, the proportion of Greenkeepers having level 4 qualifications (21%) is higher than the workforce as whole (11%). It is likely that this reflects the lengthy history of turf apprenticeship training, particularly in the golf and council sectors. The proportion of workers having qualifications higher than level 4 (eg Diploma and University Level) is lower than the NZ workforce.

Figure 5. % qualified by industry sector



Source; 2006 Sports Turf Industry Survey[1], Unpublished data

Remuneration

While there is considerable variation within the industry, overall the industry is low paid. Figure 7 below shows compensation for salaried workers for the 2006 Sports Turf Industry Survey[1].

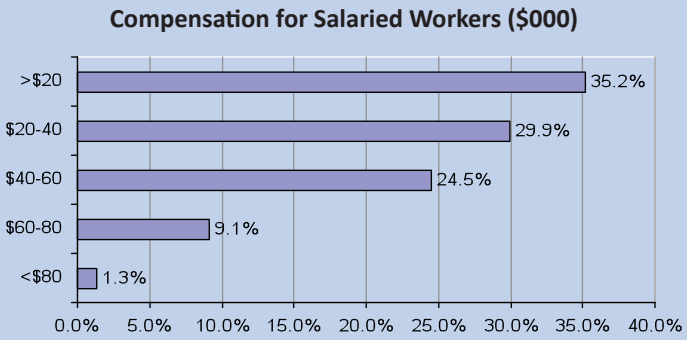


Figure 6. Compensation levels for salaried workers in the NZ sports turf industry, 2006.

According to Census data, the median personal income per annum for the occupation Grounds or Greenkeeper grew from $19042 in 2000 to $25023 in 2006, an increase of 31%. This compares with a median personal income of $27698 and $33656, or an increase of 21.5% for the New Zealand workforce over the same period. Thus, while income grew by more than average over the period, the median income remained below that of the workforce.

Regional Distribution

While there are concentrations of workers in metropolitan areas where a high number of sports facilities exist, the sports turf industry is widely geographically distributed throughout the country. A regional profile of employment in industries and occupations associated with the sports turf industry based on 2006 Census data is set out in Appendix 3, Table 2.

Appendix 3 – Analyses of 2006 Census Data

Table 1: 2006 Census Industry/Occupation Matrix for the Sports Turf Industry, Number employed in 2006.

	E329100 Landscape Construction Services	H440000 Accommodation	N731300 Gardening Services	P802100 Primary Education	P802200 Secondary Education	Q860100 Aged Care Residential Services	R911200 Sport and Phys Rec Clubs and Sports Profs	R911300 Sports and Phys Rec Venues, Grounds and Facilities Op'n	Sub-total	Residual	Total NZ
111111 Chief Executive or Managing Director	114	300	129	15	18	87	39	75	777	37,350	**38,127**
133112 Project Builder	117	54	117	15	18	12	6	9	348	25,731	**26,079**
139915 Sports Administrator	0	12	0	33	261	3	126	66	501	615	**1,116**
149113 Sports Centre Manager	0	6	0	0	3	0	114	111	234	126	**360**
232112 Landscape Architect	231	6	48	0	0	0	0	0	285	549	**834**
362211 Gardener (General)	159	162	1,524	45	48	201	15	9	2,163	2,874	**5,037**
362212 Arborist	75	0	333	0	0	0	0	0	408	468	**876**
362213 Landscape Gardener	1,527	24	516	3	3	12	0	0	2,085	987	**3,072**
362311 Greenkeeper	60	156	135	123	264	45	672	150	1,605	1,029	**2,634**
431111 Bar Attendant	0	627	0	6	0	6	213	21	873	4,827	**5,700**
431411 Hotel Service Manager	3	1,152	3	15	84	21	192	33	1,503	3,363	**4,866**
452111 Fitness Instructor	0	18	0	3	24	18	51	201	315	2,145	**2,460**
452315 Swimming Coach or Instructor	0	9	0	33	12	0	93	369	516	633	**1,149**
452317 Other Sports Coach or Instructor	0	12	3	21	51	27	213	75	402	1,455	**1,857**
452414 Lifeguard	0	18	3	3	6	0	75	750	855	324	**1,179**
531111 General Clerk	87	294	123	651	558	210	147	111	2,181	53,367	**55,548**
542111 Receptionist (General)	18	1,338	33	225	273	198	48	276	2,409	21,930	**24,339**
621999 Sales Assistants and Salespersons nec	3	6	0	9	3	3	6	126	156	318	**474**
811211 Commercial Cleaner	9	4,413	207	1,146	753	732	198	72	7,530	22,596	**30,126**
821111 Builder's Labourer	45	186	222	21	39	123	9	15	660	7,092	**7,752**
821311 Fencer	417	0	3	0	0	0	0	0	420	1,887	**2,307**
841411 Garden Labourer	54	36	2,283	12	3	6	15	6	2,415	1,263	**3,678**
899311 Handyperson	18	96	162	9	12	72	3	3	375	1,872	**2,247**
899999 Labourers nec	201	69	219	9	15	12	24	24	573	31,812	**32,385**
Sub-total	1,977	348	6,063	2,397	2,448	1,788	2,259	2,502	29,589	224,613	**254,202**
Residual	2,331	30,396	1,731	40,530	27,579	19,974	2,061	1,875	126,477	1,614,906	**1,731,576**
Total NZ	**4,308**	**30,744**	**7,794**	**42,927**	**30,027**	**21,762**	**4,320**	**4,377**	**146,259**	**1,839,519**	**1,985,778**

Notes: (1) The table is drawn from a much larger one, containing 500+ industry classifications and 1,000+ occupation classifications.
(2) Industry classifications from ANZSIC 2006, occupation classifications from ANZSCO 2006.

Source: NZIER[2] Analysis of Statistics New Zealand's Census 2006.

Table 2: Regional profile (number of workers)

Industry	Northland Region	Auckland Region	Waikato Region	Bay of Plenty Region	Gisborne Region	Hawke's Bay Region	Taranaki Region	Manawatu-Wanganui Region	Wellington Region	West Coast Region	Canterbury Region	Otago Region	Southland Region	Tasman Region	Nelson Region	Marlborough Region	Total
E329100 Landscape Construction Services	165	1,527	495	309	15	111	78	207	378	21	549	252	45	69	30	54	4,308
N731300 Gardening Services	351	2,361	879	615	69	249	225	471	864	42	918	384	111	117	57	87	7,797
R911200 Sport and Physical Recreation Clu	183	1,485	594	294	51	120	84	204	450	12	516	186	57	24	36	30	4,323
R911300 Sports and Physical Recreation Ve	36	1,377	375	258	39	138	141	219	513	9	654	390	90	39	51	45	4,377
Total NZSTITO (ie sub-total)	735	6,750	2,343	1,476	174	618	528	1,101	2,205	84	2,637	1,212	303	249	174	216	20,805
Total NZ	64,395	627,834	185,688	118,470	19,296	73,173	51,288	109,221	233,616	16,236	269,694	100,203	48,213	23,313	22,023	22,740	1,985,778

Occupation	Northland Region	Auckland Region	Waikato Region	Bay of Plenty Region	Gisborne Region	Hawke's Bay Region	Taranaki Region	Manawatu-Wanganui Region	Wellington Region	West Coast Region	Canterbury Region	Otago Region	Southland Region	Tasman Region	Nelson Region	Marlborough Region	Total
362211 Gardener (General)	189	1,200	471	270	45	279	126	285	570	45	837	327	111	120	78	96	5,037
362213 Landscape Gardener	138	1,101	333	210	12	81	63	87	258	18	417	207	30	60	36	30	3,075
362311 Greenkeeper	156	657	354	192	27	117	63	192	222	18	339	171	39	33	21	27	2,631
841411 Garden Labourer	192	1,125	531	360	51	144	120	237	288	30	348	117	45	36	12	39	3,678
Total NZSTITO (ie sub-total)	675	4,083	1,689	1,032	135	621	372	801	1,338	111	1,941	822	225	249	147	192	14,421
Total NZ	64,395	627,834	185,688	118,470	19,296	73,173	51,288	109,221	233,616	16,236	269,694	100,203	48,213	23,313	22,023	22,740	1,985,778

Notes: (1) Industry classifications from ANZSIC 2006, occupation classifications from ANZSCO 2006.

Source: NZIER[2] Analysis of Statistics New Zealand's Census 2006.

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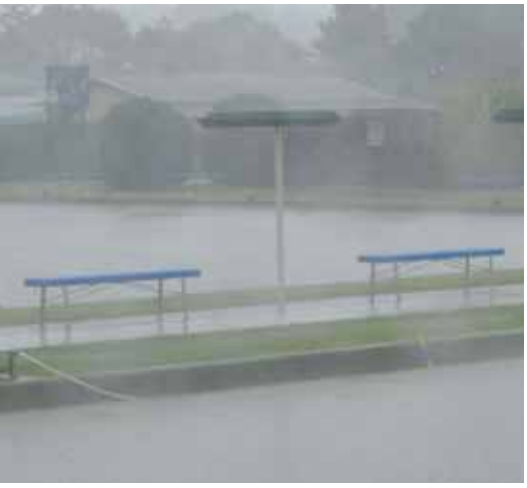

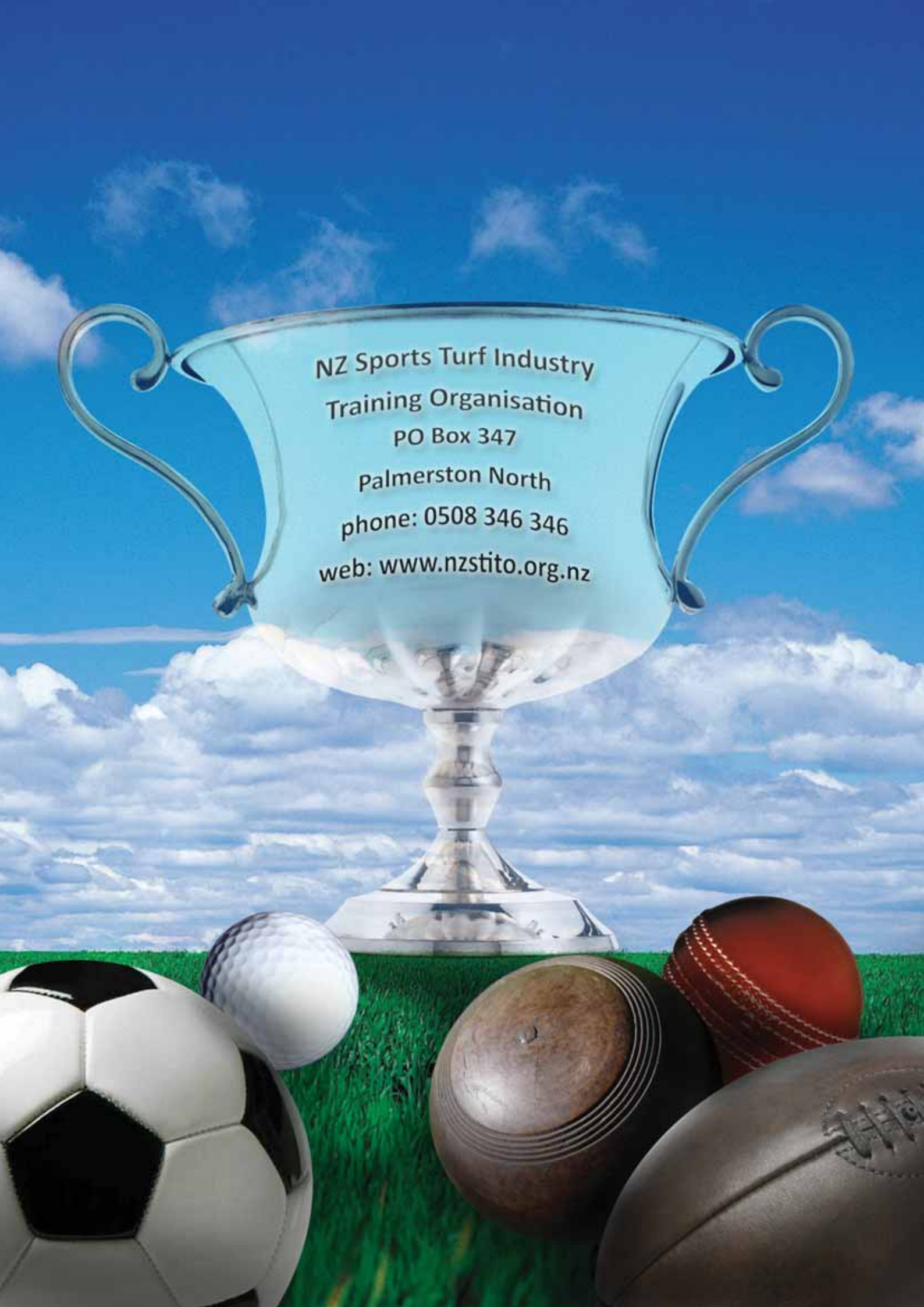
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