

# Synthetic Turf Pitch User Survey

Summary & Key Findings by  
Sport England and sportscotland



# Introduction

## Research Approach

**The number of synthetic turf pitches (STPs) has grown rapidly over the last few years and the rate of increase shows no signs of abating. STPs are now a familiar feature in many schools and communities across the country. Demand has been primarily driven by the needs of hockey and football for an all-weather surface. For hockey, it provides a better playing surface than natural grass and for football a hard wearing all weather alternative. Technical developments have meant that use of STPs has widened considerably for both competitive play and training.**

Different artificial grass systems have been developed to suit the performance requirements of different sports. Sand filled carpets have been traditionally developed for hockey, giving a fast, flat surface. This type of surface is also suitable for a wide range of activities and uses – a multi-sport surface. Rubber crumb filled pile, known as third generation (3G) has been developed to more closely reflect the playing characteristics of natural grass in terms of ball roll, bounce and traction; this surface has been adopted as a preferred surface for football.

Sport England and **sport**scotland undertook a survey of the use of STP facilities in 2005 and this summary provides the main findings. The full report is available on the Sport England and **sport**scotland websites.

The main objective of the research was to help understand how STPs are used by local communities and teams. This information will be used by Sport England and **sport**scotland to help plan for current and future provision of STPs. However, the findings raise a number of issues which may also be of interest to a wider audience including local authorities, facility providers, governing bodies of sport and other sport-related organisations.

STPs have traditionally been seen as a flexible outdoor alternative to grass pitches which can be used by a wide range of sporting activities and groups. The study provides a greater understanding of how STPs are actually used and the profile of users.

The survey focused on a sample of 14 facilities within five geographical areas (Glasgow, Fife, Derbyshire, Hertfordshire and Lancashire). Areas were selected which had relatively “good supply” and the pitches chosen were of recent construction and in good condition. They covered a range of different carpet types currently available: sand-based, 3G and water-based pitches. Areas with relatively good provision were selected as in such areas demand is less likely to be constrained by lack of facilities.

More detail on the methodology is available in the full report. It should be noted that the study examined full-sized STP use. Where 5-a-side football was played by respondents it implies the pitch has been divided for small-sized formats.

#### The study included:

- A survey of STP users at each sample facility (1,487 questionnaires completed)
- Collection of detailed information from facility managers regarding levels of use, management and maintenance
- A survey of football, hockey and rugby clubs in the areas surrounding the study pitches, including those who do not currently use them for play or training (92 responses).

# Main Research Findings

## User Profile

The users surveyed included participants in a range of sports, with the majority playing football (69%), 22% playing hockey and 9% playing other sports including rugby and American football. The characteristics of users are described in more detail below but a “typical” STP user may be profiled as follows:

- **Male**
- **Under 25 years old**
- **Plays 5/7-a-side football**
- **Plays 5-8pm midweek**
- **Plays once a week – regular repeat user**
- **Play is likely to be casual or for training**
- **Travels by car from home**
- **Spends £9 per visit**
- **Employed in managerial/professional job**
- **Fairly well educated.**

It should be noted that the type of use is closely related to the type of surface played on with 91% of users surveyed at the water-based pitch playing hockey and 80% of 3G users playing football.

### Gender

Most of the STP users are male (75% male, 25% female). However among hockey players surveyed 63% were female while only 14% of football players were female. National participation figures tend to show a more even male/female split among hockey players and an even more male dominated split in football, suggesting that women are more likely to use synthetic turf than other pitches.

### Age

Sixty percent of users were under 25 years old with only 9% over 44 years old (although 13% of hockey players were over 44).

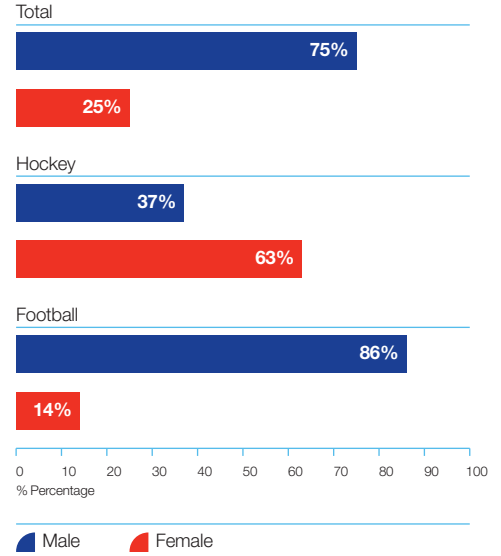
### Education

The STP users generally had a higher level of educational attainment than the population as a whole. Only 1% of respondents had no qualifications, compared with 29% of the UK population as a whole and 34% had a first or higher degree, compared with 20% of the general population. On average, hockey players had higher levels of educational qualification than football players.

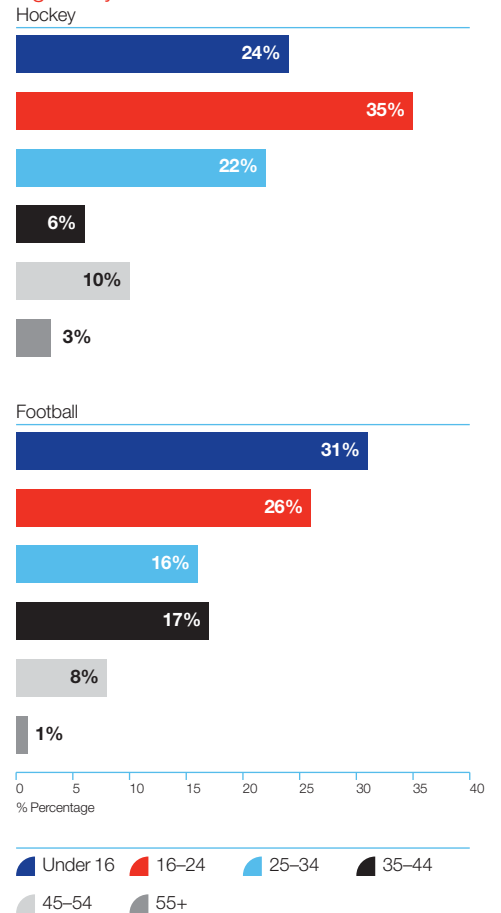
### Employment

Sixty-three percent of users were in managerial/professional occupations, compared with 44% in the UK population as a whole. Hockey players were more likely to be in managerial or professional occupations than football players (80% compared with 59%).

### Gender



### Age of Synthetic Turf Pitch Users



# Main Research Findings

## Travel Patterns

Seventy-six percent of users travelled by car, either as a driver or passenger and 14% walked to the STP. Only 4% travelled by public transport.

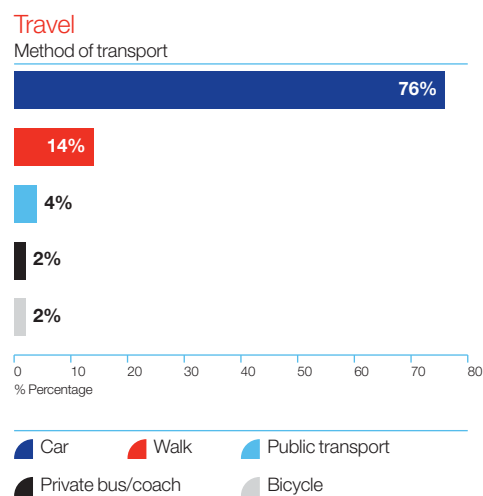
The average distance travelled was six miles with most users, 70%, travelling under 5 miles. However this overall figure masks substantial differences between football players, who travelled 5 miles on average, and hockey players, who travelled 11 miles on average. Among football players 19% travelled less than 1 mile and 39% travelled less than 2 miles.

The average journey time was 22 minutes for all users, (20 minutes for football, 33 minutes for hockey.) The higher journey time for hockey players may reflect more match use with visiting players coming from further away.

In terms of travel time, almost two thirds (63%) of users had a journey of 20 minutes or less with similar journey lengths for both car users and walkers/cyclists. Only 14% of all users had a journey time of over 30 minutes.

The respondents had fairly high car ownership/access with 81% having access to a car, compared with 73% of the UK population as a whole. Most of the users (77%) travelled to the pitch from home rather than from work (10%) or university, college or school (10%).

- **76% of users travelled by car**
- **14% of users walk to pitches**
- **Average journey distance for hockey is 11 miles and average travel time is 33 minutes**
- **Average journey distance for football is 5 miles and average travel time is 20 minutes.**



# Main Research Findings

## Type of Use

### Sport

Across all pitches in the survey, 69% of users were playing football, 22% were playing hockey, 2% rugby and 2% American football.

In football, a divided pitch was more often in use than a whole pitch: 54% of users played small-sized formats (eg five-a-side, soccer, sevens), 46% full-sized. A significant amount of football use is casual use as opposed to matches or training.

### Type of Pitch

Sport played varied greatly by type of pitch. For example on 3G pitches more 11-a-side football was played than small-sized format (48% of users played 11-a-side, 32% small-sized format). On multi-purpose sand-based pitches 66% of the use was for football (mostly small-sized format) and 27% was for hockey. Some sites were dominated by single use such as Glasgow Green where all users interviewed were playing football and Clarence Park where 98% of the use was for hockey.

Whilst 3G pitches are not considered appropriate for hockey use by the hockey governing bodies (see for example England Hockey\*), 8% of use of 3G pitches in the survey was for hockey.

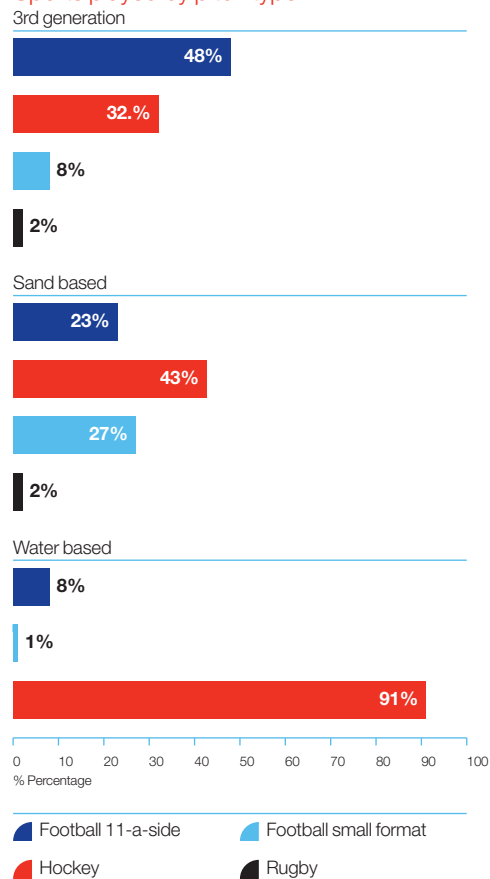
### Type of Activity

The type of activity undertaken was found to be 52% training/coaching, 24% casual games and 23% matches. A high proportion of hockey users were involved in competition (47% compared with 17% for football) and a relatively high proportion of football was described as "casual" (31% compared with 5% for hockey). At some sites use tended to be dominated by casual use, at others by training for representative squads.

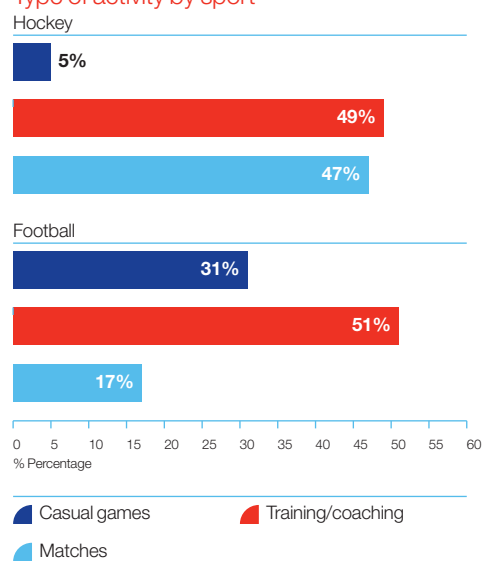
\*Synthetic Turf Pitches: Guidance on Third Generation Long Pile Pitches – England Hockey, Oct 2003

- **66% of users of sand-filled pitches played football, 27% played hockey**
- **80% of users of 3G pitches played football, 8% played hockey, 6% American football and 2% played rugby**
- **54% of footballers played on subdivided pitch and 46% on full size pitch**
- **52% of users were training, 24% playing casual games and 23% playing matches.**

### Sports played by pitch type



### Type of activity by sport



# Main Research Findings

## Preferences and Barriers

### Frequency of use

Eighty-four percent of users played at least once a week, of these, 58% played once a week (65% football, 33% hockey), 26% played more than once a week (22% football, 37% hockey).

### Time of Use

The peak period of demand was Monday to Thursday evenings (5pm–8pm) for both football and hockey; Saturday afternoons were also important for hockey, probably due to league games. The demand for hockey tended to be more spread throughout the day.

Friday and Sunday were the least popular days for users; over the whole week 54% pitch time was used, on average, but at peak times (ie Monday to Thursday evenings) 86% of pitch time was used.

When asked whether they were able to play at their preferred days and times, 49% of respondents were happy with the day they played (45% of football players, 58% of hockey players). 49% were also happy with the time they played but it is clear that the greatest demand is for early evening, 5–8pm; of those playing at other times 28% would prefer to play 5–8pm (32% football, 17% hockey).

### Use for Matches

Seventy-four percent of users who only used the STP for training said that they would also like to play competitive matches on it (this rose to 78% for 3G users).

### Barriers to Increased Use

Current users who would like to use the pitch more than they do at present were asked about barriers. Unavailability of bookings was the main reason given by current users (29%) followed by lack of time (18%), cost (15%) and transport issues (11%). Cost was more of an issue for 3G users (25%) and transport issues (including too far to travel) of more concern to water-based pitch users (31%).

- **58% of users played once a week, 26% played more than once**
- **Peak period demand is Monday to Thursday, early evening**
- **On average a pitch is used for 56% of its available hours**
- **Unavailability of bookings is biggest barrier to increased use**
- **74% of “training” users would also like to play matches on STP.**

# Main Research Findings

## Expenditure and Pitch Preferences

### Expenditure by Users

Sixty-four percent of users spent some money during their visit. This low figure probably reflects the fact that some clubs make block bookings and pay in advance for pitch time, ie some users did not pay on the day. Of those who spent something, 3% spent under £1, 63% spent between £1 and £5, 19% spent £5 to £10 and 16% spent over £10.

The average spend per visit was £9. Overall, travel accounted for 40% and pitch charges for 47% with smaller amounts spent on food and drink (14%) and other expenditure (5%). The average amount spent by hockey players (£13.72) was almost twice as much as that spent by footballers (£7.12) with most of the difference accounted for by spending on food and drink and other, unspecified, expenditure. It should be noted that not all sites had food and drink facilities on-site. Average spend on pitch fees was significantly higher for 3G pitches than for sand and water-based pitches.

- **Average spend per visit was £9**
- **Pitch charges accounted for 47% of expenditure**
- **Travel accounted for 40% of expenditure**
- **Pitch charges for 3G pitches were higher than for other types of STP.**

### Pitch Type Preferences

For football participants, the numbers who considered synthetic turf as ideal for the activity undertaken on the day of the survey and those who considered natural grass ideal were similar (45% and 44% respectively).

Football clubs were asked about their preferred surface for matches and training and most considered grass to be ideal for matches 88% but STPs better for training (67%).

Among hockey players and clubs, as would be expected, the clear preference was for STPs.

Both users, clubs and facility managers were asked to give their views on the advantages and disadvantages of STPs.

- **Football player respondents were fairly evenly split between those who considered STPs to provide an ideal playing surface and those who preferred natural grass**
- **Football clubs surveyed preferred natural grass for matches (88%) but STPs for training (67%).**

# Main Research Findings

## Advantages and Disadvantages

### Advantages of STPs

For users, the most frequently mentioned advantage of synthetic turf was availability in all weathers, particularly for football - mentioned by 42% of football players compared with 23% of hockey players. Quality of play was mentioned by 51% of hockey players but only 17% of footballers.

The main advantages related to the availability in all weathers, and the quality of playing surface.

### From the User Survey

- All weather availability
- Players stay clean
- Quality of play - particularly mentioned by hockey players
- Less injuries and improved game.

### From the club survey

- All weather availability

### From the facility managers

- 3G very good playing surface, more even bounce than other STPs, safer, less injuries, not slippy, good for children, similar to grass, wears well
- Sand-based: cheap, durable, long life, doesn't require much attention, good all-rounder
- Water-based: particularly suitable for hockey, softer surface, good for joints.

### Disadvantages of STPs

The biggest disadvantage of STPs cited by users was concern about injuries (40%). Managers noted a number of concerns about the potential risk of freezing.

### From the user survey

- Injuries (friction burns, knees get cut, too hard on joints, hurts when you fall) – particularly sand-based but also a significant number of 3G pitch users
- “Rubber crumb gets everywhere” – 3G pitch users
- Freezes in winter – water-based pitches
- Other concerns included cost and limited tackling.

### From the club survey

- Injuries and cost.

### From the facility managers

- 3G: unsuitable for hockey (particularly at higher levels), messy/dirty, expensive, can freeze
- Sand-based: greater risk of injury, hard surface, not truly all weather
- Water-based: potential for freezing is expensive.

### Quality Issues Mentioned by Facility Managers

- Commonly mentioned problems were wear on seams and vandalism. Sand-based pitches were prone to excessive sand on playing surface, hardness and compaction, and drainage problems.



# Main Research Findings

## Club Survey

The purpose of the club survey was to obtain some information from clubs (football, rugby, hockey and cricket) based in the catchment areas of the 14 study pitches, including those who do not use STPs. Some results have been given above where appropriate. Other main findings are as follows.

- **80% of clubs surveyed used STPs for training (77% of football clubs and 96% of hockey clubs). Fifty-nine percent used STPs more than once a week. Hockey clubs use STPs on average 2.6 times per week**
- **80% of clubs surveyed (100% hockey clubs and 25% of football clubs) used STPs for matches**
- **Football clubs in Scotland were more likely to wish to make more use of STPs to reduce the likelihood of cancelled games due to bad weather**
- **48% of all responding clubs commented that STPs were often not available for hire at times they would like (this rose to 69% for football clubs)**
- **The main reasons for not using STPs included a preference for grass (particularly among rugby clubs), cost, lack of access, lack of availability and a preference for indoor training.**



# Conclusions

## Changing Nature of Use

The survey found that pitches were being used for a significant amount of casual play, and that pitches were used as much for small-sized format games and training (5/7-a-side football), as for full-size games. The survey also found that the most popular time for users was early evening (5pm to 8pm), during the week. The findings are in tune with the belief that sports participation may be becoming more casual, less formal and with greater demand for flexibility in activities, timing and location to fit in with increasingly complicated lifestyles.

Future provision will need to take account of this less formal demand pattern from users as well as the demand for match play and coaching/training sessions. STP provision needs to be flexible in terms of both availability and design.

As noted above a significant proportion of use of STPs was “across the pitch” (54% of all football use was for small-sized format games and training); clearly there is strong demand for smaller-sized playing areas. It is however, unclear whether this is a demand in its own right (which may affect the availability of the pitch for full-size use), whether it is “second choice” due to difficulties in obtaining regular bookings for a full pitch or influenced by other factors such as the cost of hiring a full pitch (reported in the survey of clubs) or lack of sufficient team members.

Management and programming at individual sites will influence the extent to which a full pitch is made available for matches, team training sessions and coaching programmes. The tendency for demand to exceed available bookings during the peak period of weekday early evenings suggests that the planning of STP provision should consider the role of dedicated smaller pitches that would better meet more casual and training demands.

There is a difference in the way the different types of carpets are used with 3G carpets being more popular for full-sized games than small-sized format games (60% compared with 35%). The more multi-purpose sand-filled carpets tend to be used more for small-sized format games.

Apart from the water-based pitch which is designed for hockey, football was by far the dominant sport played on the STP's surveyed. Use by other sports apart from hockey is very limited.

- **Much of the use of STPs, particularly for football, is casual**
- **Full-size pitches are frequently divided for small-sized format play**
- **Overall most pitch use was for football (except on the water-based pitch which is mainly used for hockey) with relatively little multi-sport use in evidence**
- **Demand was highly peaked with highest demand in early evening on weekdays Monday – Thursday**
- **STPs which were not school-based or joint-use facilities had very low levels of day time use**
- **The characteristics of users of STPs suggest that some target groups commonly identified by organisations seeking to increase sports participation are not well represented among STP users**
- **Attitudes to STPs were positive, with substantial support for use of STPs for matches as well as training and with many respondents preferring synthetic to natural grass.**

# Conclusions

## Target Groups

The survey found that some of the groups highlighted as target groups for increasing participation in sport, such as those from disadvantaged areas tended to be under-represented among the users of STPs. For example the survey results indicated that:

- **81% of users of STPs owned or had regular access to a car compared with 73% of UK households**
- **Only 1% of users had no educational qualifications compared to 29% of the population as a whole**
- **63% of pitch users were in managerial or professional occupations compared with 44% of the UK population as a whole. Only 7% were in semi-routine and routine occupations compared with 14% of the UK population as a whole.**

However the survey also showed that more of the football users (14%) were women than expected from national participation statistics (where only 10% of footballer participants are women).

The surveys also found that young people were well represented amongst users: 57% of football use and 59% of hockey use was by under 25s, only 31% of the UK population is under 25. This finding is consistent with national participation surveys which generally show higher participation rates in younger age groups.

## Future

The attitude of users to STPs was generally positive. As expected, hockey players prefer synthetic to natural grass. But almost half of football players considered STPs to be as good as natural grass and most were willing to play competitive matches on them.

For clubs, the lack of availability at required times and high hire charges were two factors which inhibited greater use of STPs. All-weather availability remains the biggest perceived advantage. Other advantages are their flexibility: they can be used for a variety of sports, as a complete pitch or in subdivided sections, and for informal sport as well as competitive matches and training.

The survey showed that the use of STPs by some target groups is limited and this may present an opportunity to further develop programmed use of pitches and proactive sports management programmes geared towards target groups.

On the supply side, further development in synthetic carpet technology is expected to increase the range of available products and their suitability for specific sports. For example there has been progress towards a water-free surface for elite hockey use and a low cost multi-sport turf for shared sites.

Planning the future provision of STPs should be demand led. It will need to take account of the nature of demand and changing trends. The results of this study provide some insight into demand issues and help to inform the planning process.

## Relevant Sport England and sportscotland publications

**Sport England** The Framework for Sport in England – Making England an active and sporting nation: a vision for 2020 Sport England 2004.

**Sport England** Design Guides - Synthetic Turf Pitch - pitch layouts and run offs – available from the Sport England website.

**sportscotland** Sport 21 2003 – 2007: The National Strategy for Sport – Shaping Scotland's Future. sportscotland 2003.

**sportscotland** National Audit of Scotland's Sports Facilities sportscotland 2006.

**Scottish Sports Council** (now sportscotland) Synthetic Grass Pitches Use in Scotland, Research Report No 34. Scottish Sports Council, 1993.

**Scottish Sports Council** (now sportscotland) Synthetic Grass Pitches Use in Scotland: Summary, Research Digest No 33. Scottish Sports Council, 1993.

**Kit Campbell Associates** Soccer Sevens: Issues for the Future, Research Report no 74, sportscotland 2001.

**Kit Campbell Associates & System Three** 5-a-side Soccer, Research Report 76, sportscotland 2001.

**Sport England and sportscotland would like to thank the facility managers and staff who provided information and helped with the survey and the facility users and clubs who completed questionnaires.**

The full report is available on the Sport England and sportscotland websites: [www.sportengland.org](http://www.sportengland.org) & [www.sportscotland.org.uk](http://www.sportscotland.org.uk)

This document can be provided in alternative languages, or alternative formats such as large print, Braille, tape and on disk upon request. Call the Sport England switchboard on 08458 508 508 for more details.

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**More information**

To find out more about our research and to get the latest news and information about our various initiatives and programmes, please go to [www.sportengland.org](http://www.sportengland.org) or [www.sportscotland.org.uk](http://www.sportscotland.org.uk)

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