Experience mapping and multifunctional golf course development enhanced possibilities of increased and more varied use of golf courses

Caspersen, Ole H.; Jensen, Frank Søndergaard; Jensen, Anne Mette Dahl

Publication date:
2015

Document version
Early version, also known as pre-print

DEPARTMENT OF GEOSCIENCES AND
NATURAL RESOURCE MANAGEMENT
UNIVERSITY OF COPENHAGEN

Experience mapping and multifunctional golf cource development

- enchanced possibilities of increased and more varied use of golf cources

Ole Hjorth Caspersen
Frank Søndergaard Jensen
Anne Mette Dahl Jensen

IGN Report
January 2015

Title
Experience mapping and multifunctional golf cource development
- enchanced possibilities of increased and more varied use of golf cources

Authors
Ole Hjorth Caspersen, Frank Søndergaard Jensen, Anne Mette Dahl Jensen

Maps
Patrik Nyed Karlsson

English language editing
Steven Sampson

Citation information
Caspersen, O.H., Jensen, F.S. og Jensen, A.M.D. (2015): Experience mapping and multifunctional golf cource development - enchanced possibilities of increased and more varied use of golf cources. IGN Report, January 2015, Department of Geosciences and Natural Resource Management, University of Copenhagen, Frederiksberg

Publisher
Department of Geosciences and Natural Resource Management
University of Copenhagen
Rolighedsvej 23
DK-1958 Frederiksberg C
ign@ign.ku.dk
www.ign.ku.dk

Series editor
Gertrud Jørgensen

ISBN
978-87-7903-706-9

Layout
Inger Grønkjær Ulrich

Published by
Published at www.ign.ku.dk

Cover Photo
Dansk Golf Union

Scandinavian Turfgrass and Research Foundation (STERF)
This study of multifunctional golf courses, carried out over a three-year period, was funded by STERF, a research foundation formed in 2006 by the golf federations in Sweden, Denmark, Norway, Finland, Iceland and the Nordic Greenkeepers' Associations. STERF supports research and development efforts for improving the Nordic golf sector and delivers 'ready-to-use research results'.

Dansk Golf Union and Dansk Orienterings-Forbund have contributed.

With support from Tips- og Lottomidlerne.

Executive Summary

This report describes the development of a method for mapping and describing recreational experiences on golf courses. The objective is to provide a planning tool that can facilitate development of a broader multifunctional use of the golf course landscape.

The project has produced several results. The main output is this report, which provides a detailed description of the mapping procedure. This process is illustrated using examples from five test golf courses.
In addition to this mapping report, a catalogue has been developed providing hands-on guidance for adapting the method in a golf club without the use of a specialist.

During the project period, the research team has participated in a number of workshops that included representatives from golf courses, STERF, the Norwegian Golf Federation and the Danish Golf Union. At these workshops, the method was presented and discussed. This has been a very fruitful process that has given valuable feedback to the project team. In addition, we have organized a conference and excursions to two golf courses, where the method has been illustrated and discussed on site. Finally, the method has been presented at the 2014 conference of the European Turfgrass Society.

The report has two parts. The first part describes the method for mapping of recreational experiences. The second part consists of five appendices, one for each of the five test golf courses that were analyzed. Each appendix comprises a description of the analysis and the questionnaire responses.

Dansk sammenfatning

Denne rapport beskriver udviklingen af en metode til kortlægning oplevelsesværdier på golfbaner og på de nærmeste omgivelser. Baggrunden har været at udvikle en metode som kan bruges i planlægningen i forbindelse med udviklingen af multifunktionelle golfbaner.

Projektet har en række forskellige resultater, dels redegør rapporten detaljeret for udviklingen af en kortlægningsmetode af de rekreative oplevelser, som findes på banen. Dels beskriver den hvordan metoden kan anvendes på en golf bane. Dette sker ved at teste metoden på fem udvalgte skandinaviske golfbaner. Oplevelsesmulighederne på de forskellige baner bliver kortlagt og beskrevet, og på baggrund af analysen udvikles der en række forslag til yderlig multifunktionel udvikling af den pågældende bane.

Foruden hovedrapporten er der udviklet et katalog, som er en anvisning på hvordan den enkelte bane i praksis kan anvende metoden. Det er i denne forbindelse vigtig at nævne at metoden er udviklet til en bred anvendelse og altså ikke er afhængig af specialist viden. Samtidig er metoden udviklet som den kan anvende både digitale kort eller mere traditionelle papirkort eller flybilleder.
I forbindelse med projektet er der blevet afholdt en række workshops med deltagelse af repræsentanter fra STERF, Norges Golf Forbund and the Danmarks Golf Union. Den udviklede metode er blevet præsenteret og diskuteret på disse workshops. Dette har været en meget frugtbar proces som har tilført projektet vigtig viden om behov og muligheder indenfor området. Foruden dette samarbejde har der været afholdt en konference med en tilknyttet ekskursion til to golfbaner hvor metoden blev diskuteret. Metoden er desuden blevet præsenteret ved The European Turfgrass Society conference i Tyskland 2014.
Rapporten består af to dele. I den første del beskrives baggrund og metodeudvikling og i de tilknyttede annekser beskrives den gennemførte analyse for hver af de fem baner, som blevet gennemgået i forbindelse med projektet.
Udover selv rapporten er der udarbejdet et katalog som er en kortfattet vejledning i hvordan metoden anvendes på en given golfbane.

Indhold

Multifunctional golf courses

Since 2005, the Scandinavian Turfgrass and Environment Research Foundation (STERF) has been engaged in the research and development of multifunctional golf courses. In 2010, the project was carried out with the title "Nordisk samarbejde mellem myndigheder og interesseorganisationer for at skabe multifunktionelle golfbaner i fungerende økosystemer" (Nordic cooperation between authorities and interest organisations for creating multifunctional golf courses in functioning ecosystems). The objective was to establish a network and to create a platform for dialogue and exchange of knowledge between different interest groups and stakeholders. The project also aimed to convey research results to public bodies and organizations outside the golf sector. One result of this cooperation was a catalogue, published in 2011, comprising ideas and examples (Multifunktionelle Golfbaner 2011). The catalogue states that multifunctional golf courses could be considered as an unutilised resource. The examples given are based on an inventory of seven Nordic golf courses. The examples underscore the above-mentioned statement, showing that the golf courses possess land areas and facilities that could serve to develop a multifunctional use of the golf course that would provide benefits to society, to individual visitors and to the golf club.

Why become multifunctional?

There are several reasons to why golf courses should engage themselves in a process that leads towards greater multifunctional use of the course. These are given in the above-mentioned publications; hence, only a few will be mentioned here. Two main reasons that have been central for this report are the sustainability issue in an environmental perspective and the recreational potential that these courses possess, a potential also valid for other users than golfers. Both advantages have a major potential for further development, and in this report we deal with both of them. Our focus here, however, will be on the golf courses' recreational potential.

Golf courses are relatively large units in the landscape, often located in agricultural areas. Many of the golf courses in this study had been used as traditional farmland before they were redesigned as golf courses. In some cases, the area had been a site of retrieving raw materials such as gravel and clay. In such cases, a new golf course can contribute to enhancing the local and regional ecological conditions if the golf course is managed in an environmentally-friendly way. In other words, the golf course could be developed as an ecological stepping stone, thereby helping to improve the ecological connectivity in the region. This kind of development can have a positive influence on the wildlife and biodiversity in the area and thereby enhance visitors' recreational experiences.

In cases where the golf course is located in a peri-urban area, a development towards a broader recreational use could be beneficial to the citizens in the nearby urban environment. In this situation, the golf course can provide a new green recreational area and attract more visitors due to its park-like atmosphere and its technical facilities. In addition, a multifunctional set-up might

also cause new visitors to become interested in golf as a sport, and in the long run, attract more members to the club.

Different kinds of multifunctionality

'Multifunctionality' is a relatively new term within the golf sector, despite the fact that the term has been used for decades within land use in different contexts. In European agricultural policy, multifunctionality is a major issue (OECD, 2001), referring to farms able to provide more than the traditional animal, grain or vegetable produce. Other 'products' of multifunctionality can be biodiversity preservation, recreational facilities, landscape maintenance, farm shops, etc.

Three types of multifunctionality have been described (Brandt and Vejre, 2004):

a) Different functions on different land units;

b) Different functions on the same land unit but at different times;

c) Different functions on the same land unit at the same time.

The last type is considered the most developed form of multifunctionality. From the societal point of view, a golf course is often considered as an isolated green space where the landscape is used solely by the golf players. In order to maintain this area as a sports facility, water, soil, nutrient, pesticides and machines etc. are used, often quite intensively (Salgot and Tapias, 2006). When a golf course is classified as being multifunctional, it is no more considered as an isolated facility but as an integrated part of the surrounding society that interacts with people and the landscape outside the course. In order to be multifunctional, a golf course should ideally include the three different kinds of multifunctionality, or at least one of them.

Planning and strategy

The introduction of multifunctionality into a monofunctional golf course requires both planning and the development of a strategy. Different options and possibilities must be discussed both by the club's executive board and between the board and the members. The survey of golf players' attitude towards multifunctional golf courses conducted as part of this project illustrates that it is important not just to inform the members but to involve them in the change towards greater multifunctionality.

A conversion towards greater multifunctionality should also include discussion of potential problems. For example, changes towards a more sustainable environmental management may have what players' consider a negative influence on the condition of the greens. Similarly, reduced use of pesticides due to a more sustainable management regime can affect grass quality and thereby harm the players' perceived quality of play. These quality reductions can be caused by fungi, insects and weeds. These potential consequences need to be addressed before the multifunctional changes are implemented.

A change towards a broader recreational use will typically have the goal of attracting new users of the course. Often these users have no experience with golf and do not know how to walk about a golf course without bringing them-

selves into hazardous situations or annoying players as they concentrate on their game. This may create conflicts between established members and the new users. Hence, a strategy for how to inform new visitors must be developed. In addition, a dialogue with members that leads to necessary acceptance must be carried out.

A change towards greater multifunctionality can in some cases have a major impact on the existing conditions of the golf club/course and will most probably involve several stakeholders. Hence, a successful transformation of the present use depends on a well-considered planning scheme and the development of a strategy that involves the executive board, the employees on the course, the club members and officials from the municipality in which the course is located.

Figure 1. Pensioners on a road alongside the golf course Sydsjællands Golf Club (Denmark). Each week, the group traverses the golf course and roams in the surroundings. They are potential users of course facilities such as toilets, shelters and restaurant, as well as potential new members. Photo: Ole Hjorth Caspersen

Objective

This report presents a method for creating an overview and mapping of the recreational experiences and potential on a golf course. The method is developed and described at five selected golf courses in four Nordic countries (Norway, Sweden, Iceland and two in Denmark).

The objective of this study was also to transform a relative complex method for mapping of experiences originally developed for research and planning into a more user-friendly method that could be applied without the use of assessment specialists. The revised method should be able to be adapted relatively easily and by simple means for assessing multifunctionality and included in this the recreational potential of a golf course. The method proposed here can

be used as a monitoring and planning tool for the golf course management. It creates an overview of the existing experiences on the course, and it is intended for use at this scale. However, the method is also operational at the regional level, as the mapping procedure can be used for planning on a regional scale. When carried out on a regional scale, the method can help golf courses make decisions regarding improving the connectivity of green areas. In addition, this kind of mapping makes the regional recreational aspects more visible.

As a consequence of the analysis made for each of the five test golf courses, a number of thematic maps are generated. These maps illustrate existing experiences at the golf courses, but they also provide information that can be used to evaluate the future multifunctional potential. These maps thus serve as important information inventories and as a useful input in the development of a strategy for multifunctional development.

Trials and tests at the five golf courses in different countries in Sweden, Norway, Iceland and Denmark were conducted in order to ensure that the transformed method could be adapted in different landscapes and at different types of golf courses. In addition the 5 examples have a different focus. Some focus on a local change, while others include a more regional perspective. These differences are due to the specific conditions on the particular course but they also reflect our goal of illustrating the range of uses that are possible with this method.

Biodiversity and wildlife protection on golf courses

Due to their large size and location, golf courses can have a significant influence on both local and regional ecology. For a number of years, however, the ecological value of golf courses has been ignored (Pearce 1992). The conventional wisdom has been that golf courses possess a negative effect on the ecosystem due to their often intensive use of pesticides and fertilizer. However, there is a rising awareness that a golf course can also contribute to wildlife conservation and can support local biodiversity, as they typically also include areas that are managed less intensively. This positive effect that a golf course can have on the local ecosystem can be utilised positively especially when they are located in intensively used agricultural areas or peri-urban areas. Both are land use types where the ecology is typically under some pressure, due either to urbanisation, construction of new infrastructure or intensive land use.

The positive effect of golf courses depends on the layout and management of the course. Research from Italy indicates that golf courses located in urban and agricultural areas can positively affect wildlife if the forested areas are also a part of the golf course (Sorace & Visentin, 2007). The total number of bird species (those of conservation concern, forest species and species sensitive to forest fragmentation) were higher on golf courses compared to either surrounding urban areas or intensively managed agricultural lands. Increasing the amount of forest on a golf course can therefore increase the bird community (ibid.). Based on a study of parks in Cincinnati (USA), Andrew (1987) documented that golf courses might function as a bird sanctuary because some birds benefit from golf courses.

Figure 2. Geese crossing the tee on the third hole at Hornbæk Golf Course (Denmark) Photo: Jens Peter Nielsen

Figure 3. Extensively managed rough at Hornbæk Golf Course (Denmark). Photo: Jens Peter Nielsen.

An Australian study of animal diversity on golf courses showed that bird diversity/abundance was influenced by the foliage height and the type of grass cover. The presence of mammals was influenced by tree density, number of hollows and the grass cover (Hodgkison et al., 2007). These findings indicate that it is possible to design and manage golf courses with special focus on sustaining certain animal species/groups.

A study conducted in Kent, UK -- an area known for its many golf courses – showed that some of these golf courses are also wildlife habitats for a number of rare species (plant and animals). In this region of England, the wildlife and landscape are under pressure due to a dominance of agricultural land. Green and Marshall (1987) conducted a survey that included 20 golf courses in the Kent area, showing that golf courses have a potential to contribute to wildlife and landscape protection/conservation. Specific parts of the golf course carry a potential for ecological and wildlife development. This is especially true for the rough areas, which tend to be less intensively managed on most courses. However, the study points out threats to the wildlife that relate to golf course management techniques: the use of pesticides and fertilizer. For example, the use of herbicides has reduced the number of plant species and thereby simplified the plant community. When the biodiversity is reduced, the habitat quality for insects and birds declines. In addition, an intensive use of fertilizer also has a negative influence on the degree of biodiversity. High diversity of plant species demands a relatively low level of nutrients in the soil.

The survey found that some clubs were aware of the value of the course in relation to wildlife and landscape conservation. However, a relatively large number of the clubs were not aware of this relationship between wildlife abundance and use of fertilizer. The study cites the need for information exchange between greenskeepers and conservation bodies. Green and Marshall pointed out that another reason for some of the courses acting as refuges for a number of rare species might be the fact that they are privately owned, so that access for the public is restricted.

Figure 4. The figure illustrates the land use types at a single hole. The extensively managed rough and forest parcels (coloured brown) constitute relatively large areas, thus helping them to sustain the degree of biodiversity on the course (Source: STERF 2011).

Rough and forest parcels have been shown to have importance for biodiversity and wildlife conditions on golf course, and a nature-oriented management can generate excellent habitats for insects, birds and larger animals. Lakes and ponds are other landscape elements at golf courses. A study from Sweden has documented how the abundance of wetlands on golf courses help in conserving wetland fauna such as macro-invertebrates and amphibians (Colding et al., 2009).

Around Stockholm, a large number of freshwater ponds on golf courses support wetland fauna. A study of amphibian populations demonstrated a clear difference in density between the golf course ponds and the off-course ponds. On the course, a number of EU red listed species were identified, but these were not found in the off-course ponds. This finding has been documented by other studies. Hence, in Japan, an investigation of golf courses near Tokyo provided the same conclusion (Yasuda and Koike, 2006).

As described, several studies have found that a golf course can support local biodiversity. However, there are conflicts between managing to sustain wildlife and management/maintenance for golf. A study from Queensland, Australia failed to document the conservation value for urban-threatened reptiles and amphibians. These observations might be explained by the use of pesticides and fertilizer or the disturbance of habitats (Hodgkison et al., 2006).

The use of pesticides varies considerably, and there are large regional differences. In Europe and especially in the Nordic countries, there is much focus on reducing pesticide use, while in other parts of the world, there is less emphasis. Variations in pesticide use may thus explain some of the differences seen in studies on the ability of golf courses to support local biodiversity.

The acknowledgement of the potential of golf courses for supporting wildlife and biodiversity is increasing. A study conducted by Hammond and Hudson (2007) showed that many greenskeepers are interested in management/maintenance practices that are beneficial to species conservation and biodiversity protection. This necessitates the construction of an action plan for the golf course, a plan that must be adopted by club members and by the executive board. Additionally, the greenskeepers need education and information in order to carry out the plan. This education has been carried out at some golf courses already. At St. Andrews, one of the most famous courses in the world,

the management plan has been published. It includes a description of the management of the gorse shrub (special for the links character of the course), wildlife and heather (R&A 2010).

The recreational value of multifunctional golf courses

During the past decade, accessibility to green areas has become a topic of increasing research interest. A large number of articles investigate the influence of green areas on our behaviour and well-being, both physically and mentally. The importance of access to green areas is illustrated by Matsuko and Kaplan's (2008), review of 90 articles on human interaction with outdoor urban environments, which found strong support for the important role played by nearby green environments in ensuring human well-being. Kaplan and Kaplan (1989) claimed that access to natural landscapes would provide better means for restoration, and these findings have been supplemented by research that stresses this interrelation.

Velarde et al. (2007), reviewing over 100 articles, found 31 which provided evidence of health benefits of landscape views. The main health benefits identified were 'reduced stress, improved attention capacity, facilitation recovery from illness, amelioration of physical well-being in elderly people, and behavioural changes that improve mood and general well-being' (ibid. pp. 210). Hartig et al. (2003) focused on the physical effects related to visits to and exercise in natural environments. They showed that when compared with walking in urban settings, walking in a nature reserve resulted in changes in blood pressure that indicated greater stress reduction. Other positive health effects are related to the health benefits of exercise and social contacts (Van der Berg et al., 2007). In a questionnaire of 421 persons in Eastern Helsinki, Tyrväinen et al. (2007) found that the most frequently identified positive values with respect to green areas were 'opportunities for activity', and 'beautiful landscape'. Also rated highly were 'freedom and space', 'a feeling of forest' and 'peace and quiet'. The research also highlights the importance of access to nearby green areas. Many older golf courses tend to be located in landscapes that comprise high nature and landscape values. They have been designed in a way that offers the visitor/golf players the possibility to enjoy the nature. The recreational value of the golf courses is intended mainly for the golf club members. However, due to various planning laws and public access rights specific to the Nordiccontext, some of these golf courses offer these natural assets to people who do not play golf and to visitors. Golf courses located near urban areas are frequently visited by non-golfers.

For the citizens who use the course for recreational purposes, it offers a well-managed green area often quite close to their homes. Thereby, the golf courses contribute to increasing the general health conditions not only amongst the users but also for society in general.

Multifunctional planning methods

Due to the different type of users and activities, some golf courses in the Nordic countries have been developed in multifunctional direction in order to appeal to a broader public.

Nevertheless, this development has happened more or less by chance at several golf courses, often taking the form of supplementary activities and not based on any kind of elaborated planning scheme or strategy. A specific action or activity can push the golf course towards a broader multifunctional use. However, such a one-off measure often has a limited impact and will not be able to change the general function from being mono-functional to being multi-functional. Hence, this project argues that it would be better for golf players, visitors and the golf course management if the change towards multifunctional development were organised in a more systematic way.

A more organised development would ensure that different facilities on the specific golf course could be utilised properly and developed in a planning context that includes the surroundings and also takes into account how the different changes may interact and influence each other. For each specific golf course, engagement in a more strategic planning procedure would enhance multifunctionality.

In order to facilitate a more strategic development of multifunctionality new methods for planning and development designed specifically for golf courses are needed. A strategy for a future multifunctional development should introduce new functions and facilities, but it is important that it also take into account the present facilities at golf course and already existing ecological and recreational experiences. Hence, a method that can visualise the present recreational and ecological experiences and values at the golf course could be considered as a first step towards further multifunctional development. In the following, the background for such a method is described.

Approaches for mapping of recreational experiences

During the 1970s, a method for mapping recreational experiences that reflected the demand for more comprehensive and qualitative background data for recreational planning measures was developed in the United States. The Recreational Opportunity Spectrum (ROS) classification system classifies possible recreational experiences into a spectrum of experiences consisting of different classes, starting with 'wilderness' and proceeding towards more anthropocentric-dominated classes. The ROS system thus creates a spectrum of possible recreational experiences (Driver et al., 1987), thus providing a relative simple overview of the different experiences available at a specific location. This overview can be used for planning purposes, making existing possibilities visible and thus manageable for further development into a genuine multifunctional/recreational development strategy.

Each experience class has been defined in terms of characteristic activities and settings and probable experience outcomes. The dimensions of people's recreation experiences are known as a Recreational Experience Preference (REP) scales. The REP scales are considered to be relatively stable, reflecting basic human characteristics (Manfredo et al., 1996). The classification system has been made operational by various public agencies, e.g. USDA Forest Service (USDA, 1982).

The recreational experiences are viewed within the context of motivation theory, meaning that the experience class is defined as the package or bundle of

psychological outcomes (e.g. stress relief) desired from a recreation engagement (e.g. walking in a forest) (Manfredo et al., 1996). There is an emphasis on settings in each class, each class expressed with the help of indicators. The mapping is intended to facilitate the management of the mapped recreational experiences. In addition, the mapping of the different experiences serves as an input to future development.

The realization of desired and expected experiences is linked to personal preferences and perceptions. All human senses are in use, although some human senses are naturally more developed than others. For example, visual perception is very important for most humans (Bell, 1999; Kaplan and Kaplan, 1989). In our perception of our surroundings, we also project our feelings and preconceptions onto it; this is why landscapes or wilderness are as much a state of mind as they are physical entities (Bell, 1999). The ROS system is a rationalistic planning approach based on rationalistic behaviour by the recreationist, geared as it is for planning by a simplistic focusing on manageable settings. An approach inspired by the ROS system was developed by Grahn and Sorte (1985), working at the Swedish Agricultural University (SLU). Grahn and Sorte divided the possible recreational experiences into eight classes based on the idea of thematic experiences, using a scale from 'untouched' and 'nature-oriented' experiences to classes dominated by an anthropocentric use, such as sites for social gatherings and festivities and culture (Grahn, 1991). This method has been used successfully in different cities in southern Sweden, creating a more diverse understanding of the possible recreational experiences relating to different green urban areas (Grahn, 1991; Grahn and Berggren–Bäring, 1995; Grahn et al., 2004).

The approach developed in this project for use on golf courses and the surrounding areas was inspired by the SLU method. The eight classes were reduced to seven and slightly altered, while quantitative indicators were formulated so as to enable the method to be applied more easily at both local and regional levels. As with the former method by Grahn and Sorte (1985), the recreational experiences are treated as social values considered from a human perception of the green structure and as such, are expected to provide a more comprehensive background for future recreational green structure management. The seven classes represent a spectrum of multiple motives for outdoor recreation and a spectrum of desired recreation experiences. The seven experience classes are as follows:

1. Wilderness
2. Feeling of forest
3. Panoramic views, water and scenery
4. Biodiversity and landform
5. Cultural history
6. Activity and challenge
7. Service and gathering

Several Danish studies have surveyed motivations for nature visits based on the REP scales developed in the United States. The seven classes in table 1 are in line with the main motivation domains as described by Jensen (1998) and Kaae and Madsen (2003).

The above-mentioned studies support 'wilderness' and 'feeling of forest' as mapping objects (see table 1). Serene, peaceful, and silent nature experiences are among the highest rated recreational preferences, (Jensen, 1999; Jensen and Koch, 2004). Forest (particularly elder broad-leafed forest without understory), is the most preferred recreation environment (ibid.). These special features of forest are especially popular with the urban population in larger cities, where forests serve as a refuge for 'recharging our batteries', purification, and renewal (Hansen-Møller and Oustrup, 2004).

The third experience class is named 'panoramic views, water and scenery'. Preferences for visiting viewing points, lakes and coastline are well supported in Danish recreation research (e.g. Jensen, 1998; Kaae and Madsen, 2003) as well as in international research on preference and perception of water in landscapes (e.g. Appleton, 1996; Kaplan and Kaplan, 1989).

Experience of 'biodiversity' is more complex, and expert knowledge and additional information might be needed in order to fully comprehend and experience settings rich in biodiversity. However, studies have shown a general association between biodiversity in landscape and preference for landscape (e.g. Junker and Buchecker, 2008; Nassauer, 2004). Land form is another experience that can contribute positively to the visitor's experience. Hence, it is not unusual that the design of the golf course can emphasize an existing land form and thereby reinforce an experience of a diverse landscape.

'Cultural history' is here considered an important recreational experience. Jensen (1998) comments that visits to (pre-) historical monuments (e.g. burial mounds, cairns) are seldom the main purpose of a nature experience. They are often combined with visits to other nature types. Nonetheless, cultural history might play an important part in the high rating of 'enjoyment of landscape' as the main motive for recreation in nature settings.

The two final classes, physical activity and social gatherings, concern relatively well-known recreation experiences: using nature for exercise and using nature for social gathering. 'Activity and challenge' covers a broad field of activity-oriented experience in nature; from walking the dog to hiking, mountain biking or horseback-riding, as summarized by Jensen and Koch (2004), while 'service and gathering' is based upon motives for outdoor recreation such as socializing with others (Jensen, 1998; Kaae and Madsen, 2003).

Experience mapping for golf courses

The method for mapping of experience values in order to provide qualitative background data for recreational planning for golf courses has necessitated a number of changes to the already developed method. The method is based on the registration of a number of indicators for each of the seven experience classes. The mapping of these indicators serves to define and designate each experience class. The mapping procedure creates an overview of existing experiences on the specific golf course, and the output of the procedure is intended to produce background data for planning future recreational development on the particular golf course. The fact that the experience class also includes experience of biodiversity enables the golf course to focus specifically on a development that enhances the present ecological conditions on the course.
The changes that have been made to the method ensure that specific experiences typical of golf courses are included in the data registration protocol. In addition, indicators have been selected that comply with this requirement. This has resulted in the definition of subclasses, such as different forest types, or different types of open areas. In the following, the seven classes and their respective indicators are illustrated.

In the following, each of the seven experience classes and the related indicators that are used as positive indication of the experiences are described. Information is provided on factors that will negatively influence the present experience in order to secure a more precise designation of the different experience classes.

In addition, information is provided that eases the mapping procedure. The mapping is intended to be carried out by designating the indicators on a paper map or aerial photo. Information is given on how to map the different classes and subclasses. Subsequently, the mapping can be digitalised on a common map. However, it will often be more convenient for the later planning process to map the classes on separate maps.

For each experience class, suggestions for how to depict the experience class are given, such as by point, line or polygon. In addition, graphic information with respect to colour is also suggested. These suggestions are only recommendations. Alternative typologies and other colours can be used, but it is important that different symbols and colours are used if all seven experiences are to be clearly depicted on a single map.

Pristine environments

In old growth forest, nature forest, and forest swamps, trees are often gnarled, twisted, and old. There are high possibilities of encountering dead wood and dying trees. Such locations provide ample opportunities to experience a serene,

undisturbed and untouched environment, together with silence (the absence of urban/industrial derived noises). If the visitor is to experience a pristine environment, technical installations such as power lines or wind turbines must be absent. A subclass has therefore been established for pristine costal environments because of the importance that these kinds of environments represent. Pristine environments are not a normal or common experience on a golf course due to the relatively intensive land use. However, depending on the specific characteristics of the golf course, this experience can sometimes be found as smaller plots on or next to the course, typically in a forest or on the coastline. The areas that provide this experience can be used as a place to find peace and quiet and often linkages to special experiences of nature.

Pristine forest

Indicator: Old trees > 100 years, nature forest, forest bogs and ponds

Absence of: Noise and technical installations (power lines, wind turbines), clearly managed areas

Visulization:

Spatial form: Polygon

Colour: orange

Figure 5. Forest Bog, North Zealand (Denmark)
Forest bogs and nature forest are examples of pristine experiences that the visitor may also find at golf courses. Photo: Ole Hjorth Caspersen

Figure 6. Nature forest Sydsjællands Golf Course Zealand (Denmark). Photo: Ole Hjorth Caspersen

Pristine coast

Indicator: pristine coast without view of housing and industry

Absence of: noise and technical installation (power lines, wind turbines)

Visulization:

Spatial form: linear

Colour: orange

Line type: broad along the coast

Figure 7. Natural coast at the Monterey Peninsula, California (USA). View from Monterey Peninsula Dune Golf Course. Photo: Anne Mette Dahl Jensen

Figure 8. Natural coast Ness Golf Course (Iceland). Photo: Ole Hjorth Caspersen

Feeling of forest

In compact forest areas, it is possible to experience the feeling of being away (stepping into another world), a world where one can experience the sounds, lights and smells of the forest together with peacefulness and silence. In older forests, branches and leaves form a canopy which enhances the feeling of the forest as a special class of experiences.

Forest experience at golf courses is subdivided into three subclasses due to the complexity and large variation that often characterizes forest areas in golf courses. The three subclasses differ according to their degrees of compactness of trees and degree of management of the forest floor.

Forest

Being in a forest surrounded by large trees will provide the visitor with the forest experience. In order to provide this experience, the area must be larger than just a group of trees and the visitor should have an experience of low degree of management pressure of the forest floor fore example as indicated at figure 9 and 10.

Indicator: trees, conifers or deciduous, unmanaged forest floor, scrubs, minimum width 25m.

Absence of: technical installations, busy roads (traffic noise)

Figure 9. Forest at Barsebäck Golf Course (Sweden). Photo: Ole Hjorth Caspersen

Figure 10. Forest at Degeberg Golf Course (Sweden). The undisturbed forest floor is an indicator of this class. Photo: Anne Mette Dahl Jensen

Park experience

Open forest that differs from forest mainly due to the management practice. In order to be classified as park experience, the management of the area must be relatively intensive (animal grazing or other kinds of management). The forest floor is managed, and the visitor gets an experience of transparency.

Indicator: trees, conifers or deciduous, managed forest floor, scrubs, minimum width, area 25m

Absence of: technical installation, busy roads (traffic noise)

Figure 11. Park Experience with scattered trees at Barsebäck Golf Course (Sweden). Photo: Ole Hjorth Caspersen

Figure 12. Open groups of trees give the visitor a par- like experience at Helsingør Golf Course (Denmark).(Photo: Jens Peter Nielsen

Common

Open area covered by grass and/or herbs, often with scattered trees in groups or single trees.

Indicator: extensively managed areas covered by grass and/or herbs, scattered trees in groups or single trees. Management is sometime carried out by animal grazing, no wetland.

Absence of: larger coherent groups of trees, hedgerows, busy roads

Figure 13. Dry common with swaying red fescue at Gyldensten Golf Course (Denmark). Photo: Anne Mette Dahl Jensen)

Figure 14. Natural common managed by grazing sheep at Hornbæk Golf Course (Denmark). Photo: Anne Mette Dahl Jensen

Meadow
Open grass area extensively managed.

Indicator: open grass area typically with very few scattered groups of trees, single trees or scrubs. Sometimes managed by grazing. Often close to wetland, or periodical wetland.

Absence of: forest, coherent scrub, hedgerows, busy roads

Visualization:

Colour: the four classes in different kind of green

Spatial form: polygon

Figure 15. Meadow at Hornbæk Golf Course (Denmark). Photo: Jens Peter Nielsen

Figure 16. Meadow at Hornbæk Golf Course (Denmark). Photo: Anne Mette Dahl Jensen

Panoramic views

Locations with good viewing opportunities facilitate experiences of wide space and freedom. These landscapes attract many visitors, which is why they are designated as a separate class. Hilltops, open landscapes, lake and sea shores are examples of such locations.

Indicator: present viewing point, coast and seashore
Absence of: dominating technical installations
Visualization:
Spatial form: polygon, line and point
Colour: red

Figure 17. The view from Fåborg Golf Course (Denmark) overlooking the archipelago on south Funen. Photo: Anne Mette Dahl Jensen

Figure 18. Panoramic view from the club house at Sydsjællands Golf Course (Denmark). Photo: Ole Hjorth Caspersen

Figure 19. View to Pibe Mølle from Helsinge Golf Course (Denmark), Photo: Ole Hjorth Caspersen

Figure 20. Fredrikstad Golf Course (Norway), panoramic view to Fredrikstad. Photo: Pål Høyum

Biodiversity and landform

Areas with high biodiversity enhance the chances of encountering flora and fauna and stimulate feelings of mutual connection, exploration and curiosity. Landscapes with an easily recognizable geomorphologic formation (such as hummocky moraine or tunnel valleys), enhance the opportunities for deeper understanding of the coherence of nature and the link between biodiversity and land form.

Indicator: areas with biological diversity, areas managed ecologically, meaning that pesticides and fertilizers are not being used at these areas.

Absence of: use of fertilizers and pesticides

Visualisation:

Spatial form: polygon

Colour: green- blue

Figure 21. Small ponds on the golf course often offers good ecological conditions Fredrikstad Golf Course (Norway). Photo: Pål Høgum

Figure 22. Birds offer a periodic, special experience and contribute to biodiversity; this is the Atlantic Tern colony at Ness Golf Course (Iceland). Photo: Ole Hjorth Caspersen

Figure 23. The rocks at Fjellbäcka Golf Course (Norway) enable the visitor to have a special experience of the landform. Photo: Anne Mette Dahl Jensen

Figure 24. Stone dikes offer special ecological conditions that contribute to the biodiversity. Skjoldnæsholm Golf Course (Denmark). Photo: Anne Mette Dahl Jensen

Cultural history

In most landscapes, remains of the former use can be identified as a part of our cultural historical heritage. An area with tangible heritage (physical historical evidence) in the form of human made structures and areas with intangible heritage (e.g. settings of historical events) promote feelings of time depth and belonging.

Indicator: historical elements and areas, houses, churches, burial mounds and barrows, earth- and stone dikes, historical roads

Absence of: modern technical installations

Visualization:

Spatial form: polygon, lines, points

Colour: brown

Figure 25. At Viksjö Golf Course (Sweden), an old rune stone from the Viking ages is located in the centre of the golf course.Photo: Ole Hjorth Caspersen

Figure 26. Fredrikstad Golf Course (Norway) is located just in front of the old fortified city, giving the visitor a very special experience of time depth. Photo: Ole Hjorth Caspersen

Figure 27. Old historic road at Viksjö Golf Course (Sweden). Photo: Ole Hjorth Caspersen

Figure 28. The royal castle Eremitagen at Copenhagen Golf Course Dyrehaven (Denmark). Photo: Jens Peter Nielsen

Activity and challenge

Specific areas and facilities support possibilities for physical activity in the landscape. Different tracks and routes can provide opportunities for experiencing a physically challenging nature, alone or in groups.

Indicator: trail, horse trail, mountain bike trail, fireplace, bird watch tower, nature school, playground, miniature golf, etc.

Absence of: activities not coherent with the indicators

Visualization:

Spatial form: polygon, line, point

Colour: red

Points: red

Figure 29. Adventure race at Hornbæk Golf Course (Denmark). Photo: Jens Peter Nielsen

Figure 30. Bicyclist driving through Korsør Golf Course (Denmark). Photo: Anne Mette Dahl Jensen

Figure 31. At Hornbæk Golf Course (Denmark). Photo: Anne Mette Dahl Jensen

Figure 32. People taking a walk on Korsør Golf Course(Denmark). Photo: Anne Mette Dahl Jensen

Service and gathering

Feeling of safety, security and confidence in nature are important for some people in order to enjoy a nature experience. Services such as parking lots, information through signing or audio-guiding, bonfires, and picnic table and bench sets promote the feeling of safety. The same facilities also encourage social gatherings and recreation with family or friends.

Indicator: parking lot, bus stop, information, restaurant, kiosk, campground, restrooms

Absence of: activities not coherent with the indicators

Visualization:

Spatial form: points, lines, polygons

Colour : purplish-blue

Points : purplish-blue

Figure 33. Shelter and toilet at Sydsjællands Golf Course (Denmark). Photo: Ole Hjorth Caspersen

Figure 34. Restaurant and club house at Hornbæk Golf Club (Denmark). Photo Jens Peter Nielsen

Figure 35. Picnic bench at a Danish golf course (Denmark). Photo: Anne Mette Dahl Jensen

Figure 36. The Parking lot at Ness Golf Course (Iceland). Photo: Ole Hjorth Caspersen

Safety

As special issue of concern that relates to golf courses is the question of safety. Normally the users of the golf course (the players) have the necessary awareness and knowledge regarding safety issues to move safely around the course. However, when non-golfers visit the area, special safety measures may be re-

quired in order to avoid accidents or annoyances. One way is to map the risk at different locations on the course, as has been done at Ness Golf Course in Iceland (see figure 38).

No matter where one walks on a golf course there is always the danger of being hit by a golf ball, but the hazard can be reduced by creating safety measures or performing where the game is not likely to take place. Ness Golf Course has been chosen as an example here and This golf course was designed, it was not considered that the course might take on a multifunctional function in the future that would include more recreational visits to golf course. Therefore, no established security actions in relation to other users of the golf course were implemented. Afterwards the golf course has identifyed where there might be a safety problem in relation to the desired multifunctional activity. When risk zones are identified, the club can analyze whether the activity can be established on a site where security is satisfactory or whether new safety measures have to be taken. These risk zones at Ness has been indicated on a map that are available to visitors and warnings has been put on selected spots on the course.

If security is not satisfactory, the proposed activity should not be implemented. Alternatively, it should be considered whether the new activity can be implemented only when the golfers are not present on the golf course.
It is possible to produce a map where areas on the golf course are categorized in relation to the risk of being hit by a golf ball.

Golf courses are artificial constructions, although they are often influenced by the landscape of which they are a part. This means that the genesis of a particular golf course also includes a specific design and layout. As a result, they are very different in their design and layout. Therefore, all courses may have different issues related to security since safety distances depends on the local conditions.

Registration of safety areas must be done together with an experienced player from the club or the golf course architect. High risk areas, near tee areas, fairways and green areas, are especially important to map. A graduation of colours can be applied that indicates high risk with dark.

Figure 37. On Ness Golf Course, there is a clear warning regarding the degree of safety on the course. The sign says "danger". (Photo: Ole Hjorth Caspersen)

Figure 38. Ness Golf Course (Iceland) has produced a map that indicates with red colour where the visitor should be especially aware of the risk of being hit by a golf ball.

Mapping

The registration and mapping of recreational experiences can be conducted using various methods. By use of digital maps and geographical information systems (GIS), it is possible to adapt a digital mapping procedure. This can be based on a combined use of already existing maps to which a digitalization of the specific features is added. This is a relatively technical procedure, although it is becoming more common. The maps can also be produced by adapting a more simple procedure using non-digital products such as a detailed topographic map, a printed aerial photo or a good quality golf course map. Common to the mapping procedure is that it consists of a detailed field-based registration of data that is drawn on either a digital or a more traditional paper map. In addition to the mapping, photo registration of the particular object being mapped may be useful later in the process; for example, when discussing issues with members or as supporting documentation.

For later work and dissemination of the results, it is important to adapt a nomenclature that is easy to interpret with respect to both typology and colours, no matter what background map that is applied. This means that different colours should be used for the different experience classes. The use of different typologies and colours enables different experience classes to be combined on a single map, and for later documentation, it is recommended that the location for the photos be registered on the map.

The mapping should be carried out in a way that makes interpretation of the particular experience class relatively simple. Some elements, such as trails, should be indicated in their full length, while other elements should be indicated as points, e.g., a restroom or a shelter. A viewing point can be indicated as a point, including a small signature (V) indicating the view direction. If a digital mapping system is used, there will be different signatures available for both lines, areas and points. The method demands no specific symbols to be used, although some recommendations are given above.

Sometimes it can be difficult to define a specific boundary for the experience class that has been identified. Not all classes have clear boundaries. Quite often, the boundary is blurred or fuzzy. In these cases, the nearest clear boundary can be selected, such as a trail, a green or something similar when the line is being drawn. Another way of indicating a fuzzy boundary is to use different intensity of the colours.

If all classes are being depicting on a single map, some classes will probably overlap. In this case, hatching can be used in order to show different experience classes at the location.

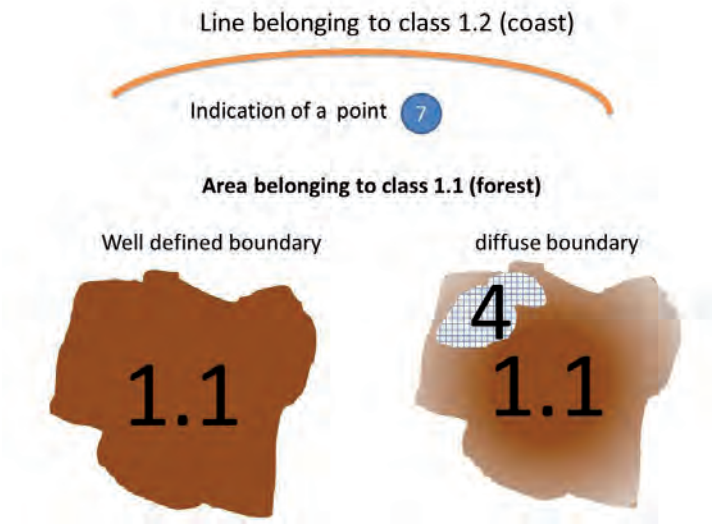


Figure 39.The mapping of experience classes can be depicted in different ways. In this case, Microsoft PowerPoint has been used to illustrate classes that can be drawn on a map or an aerial photo. In case of overlapping areas, hatching can used to identify the class (as with class 4 on the figure).

Here it should be noted that the generated maps are primarily for internal use in a forthcoming planning procedure. They are not intended for publication. If the maps are to be published, they will normally require a review of the layout in order to ensure that the mapped experiences are easy to interpret. In addition, the map must be followed by descriptions of the present experiences in order to ensure accurate interpretation.

The example below (figure 40) illustrates the result of a mapping procedure for the Ness Golf Course, outside Reykjavik. Due to the forthcoming urban and recreational development expected for this area, the golf course and the nearby recreational area were both mapped and depicted on a single map. Hence, the experience map of the golf course also includes the nearby recreational area. This was done in order to create a common overview of the different experiences in the entire area. This procedure was considered to be more feasible in relation to the policy-making process. In a forthcoming planning procedure, this combined map increases the visibility of the mapped recreational experiences at the golf course. The goal was for the new information to be included in a more holistic planning procedure that could strengthen cooperation between the municipality and the golf course.

The Ness experience map was produced by drawing the experience classes on different aerial photos that had been used as traditional paper maps during the fieldwork. Afterwards, the designated experience classes were digitized using a digital aerial photo as background for the mapping procedure. This procedure is applicable when there is no detailed or updated topographic map available.

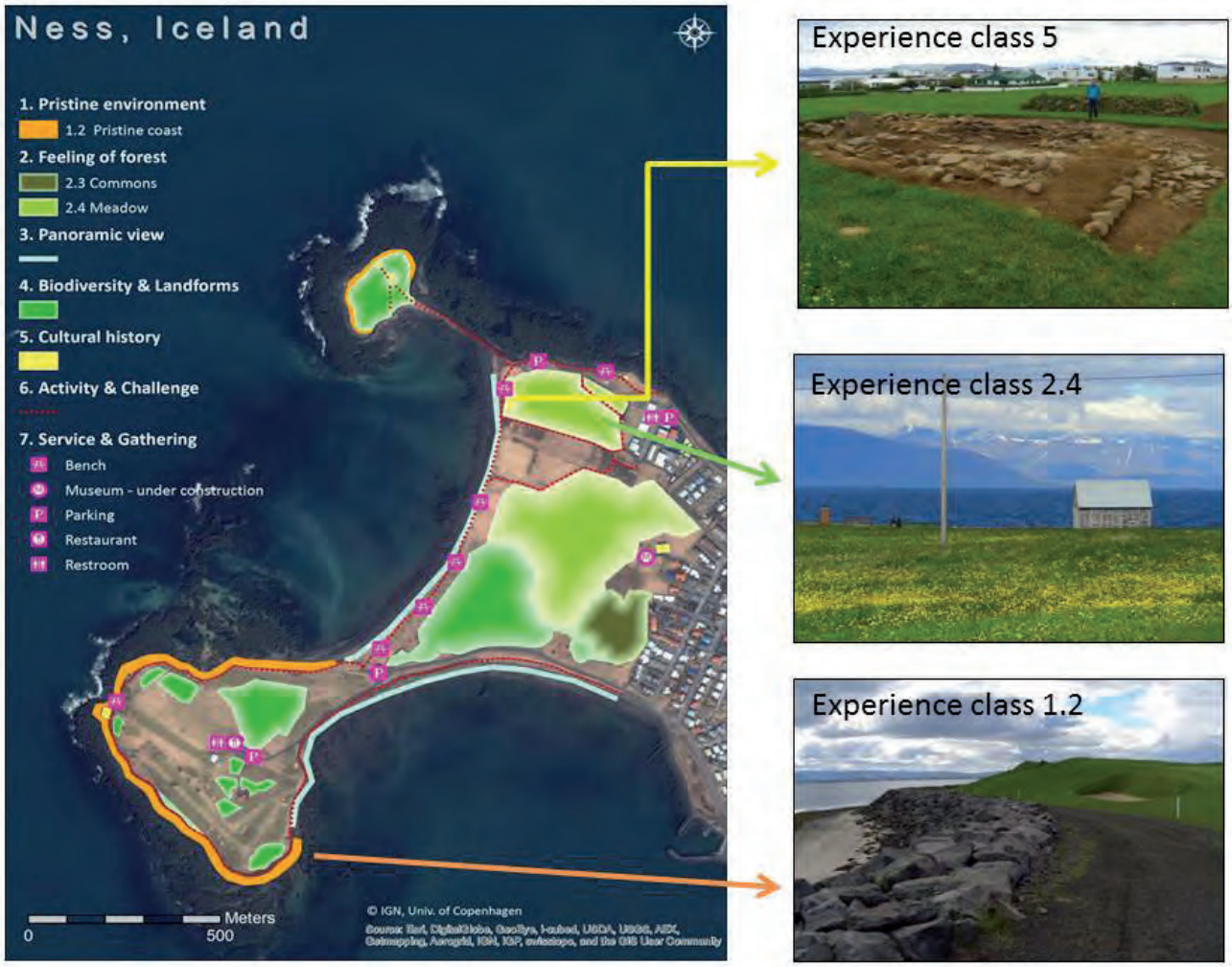


Figure 40. The figure illustrates the experience map that was the outcome of the mapping procedure on the Ness Golf Course in Iceland. All registered classes are depicted on the one map. Due to the forthcoming recreational development in the area, the nearby areas are also included in the map in order to create a better background for the planning procedure. Map made by Patrik Karlsson Nyed.

Description of mapped experience classes

The maps that are the output of the mapping procedure have several uses. They are important in order to illustrate the potential experiences on the golf course and in the surrounding area. However, the catalogue of experiences should not be considered the main output of the mapping process. The depicted experience classes also serve as an input to a description of each of the identified experience classes. This description is used to inform the map readers the kind of experiences that are actually present or are potential in the area.

The result of the mapping procedure and the description is combined in a small report in which each experience class is briefly described and illustrated with photographs. The report ends in outlining future suggestions based on findings from the mapping procedure. In appendices 1 – 5, a report is presented for each of the five golf courses that have participated in the project.

Golf players' views on multifunctionality

When starting a discussion of multifunctional initiatives on a golf course/in a golf club, it is crucial to include the golf players, and to get to know their attitudes in this respect.

It is important that the "original" users of the area – the golf players – are aware of what kind of new initiatives might take place on their home course in the future so that they do not feel "overrun" by the board and management of the course. Another factor is that the better knowledge one has of players' views and attitudes, the more positive process can be initiated.

One obvious method of obtaining such information is by organizing member meetings and workshops, where new multifunctional initiatives can be presented and discussed. Another – or supplementary – method of obtaining input to such a process is by conducting a *survey*.

Such surveys can be carried out as electronic web-based surveys. This type of data gathering tool requires the formulation of meaningful questions. Space does not allow here for a detailed guideline on how to formulate surveys. However, based on our long experience in conducting surveys, we have developed a prototype questionnaire containing a number of questions dealing with multifunctionality that can serve as an inspiration in different contexts.

The questionnaire contains both more general questions regarding the players' overall attitudes to the multifunctionality concept, more specific questions regarding respondents' attitudes toward accepting specific new activities on the golf course, and some background information about the characteristics of the respondents (e.g. sex, age, golf experience, golfing handicap, etc.).

The following section presents some selected excerpts from the survey findings of five Nordic golf clubs/courses. The full results for each surveyed golf course are found in the appendices.

Data overview

Ness, Iceland:	117 completed surveys (254 persons opened the survey)
Fredrikstad, Norway:	91 completed surveys (233 persons opened the survey)
Viksjö, Sweden:	94 completed surveys (189 persons opened the survey)
Sydsjælland, Denmark:	105 complete surveys (284 persons opened the survey)
Hornbæk, Denmark:	75 completed surveys (379 persons opened the survey)

Contact with the respondents was made through the homepage of the club/course, and in newsletters, between February 2014 and August 2014.

Overall attitude to the multifunctionality-concept

To obtain some insight into what the golf players think about multifunctionality more generally (cultural, natural, and environmental aspects) in relation to the golf course, a question like the one presented in figure 42 can be posed. The results reveal a generally positive attitude, with some minor differences among the five investigated courses/clubs

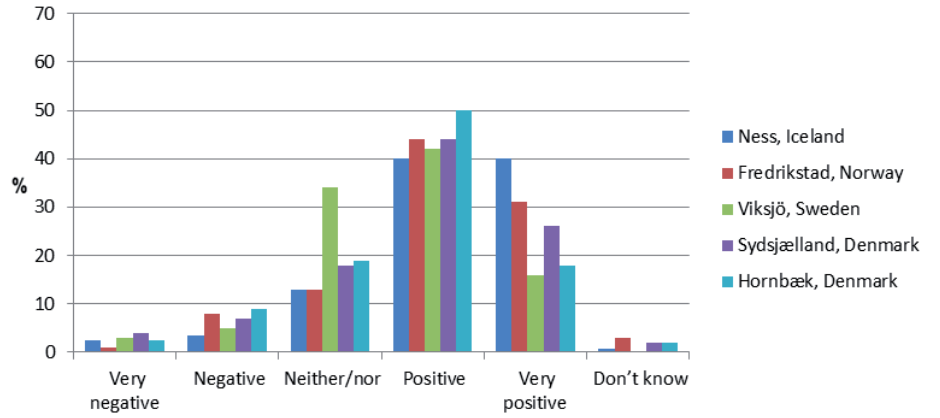


Figure 41. Distribution of responses to the question: "What will your overall attitude be if new initiatives towards more focus on cultural, natural, and environmental conditions would become a reality at your home course?"

Attitude to where new initiatives should take place

As it would make a difference for the players *where* eventual new initiatives would be implemented, a set of questions was posed to obtain further information. When comparing figures 42 and 43, it seems quite clear (and maybe not surprising) that there is a more positive attitude for new initiatives related to the club house compared to initiatives that are linked to the golf course itself. At some courses, the respondents are more positive than on other courses. Especially at the course/club in Fredrikstad, Norway, respondents indicated a relatively more positive attitude.

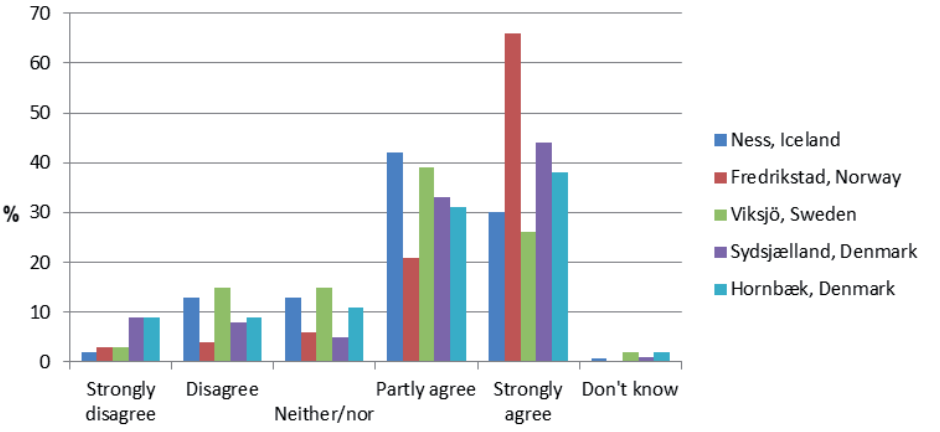


Figure 42. Distribution of responses to the question: "Please state how much you disagree or agree with the statement: 'If efforts were made to have more visitors and activities in the club house, it would be a good way to get more people in contact with the golf sport and thereby get more members.' (When you answer please think of the golf course you are most attached to – your home course)."

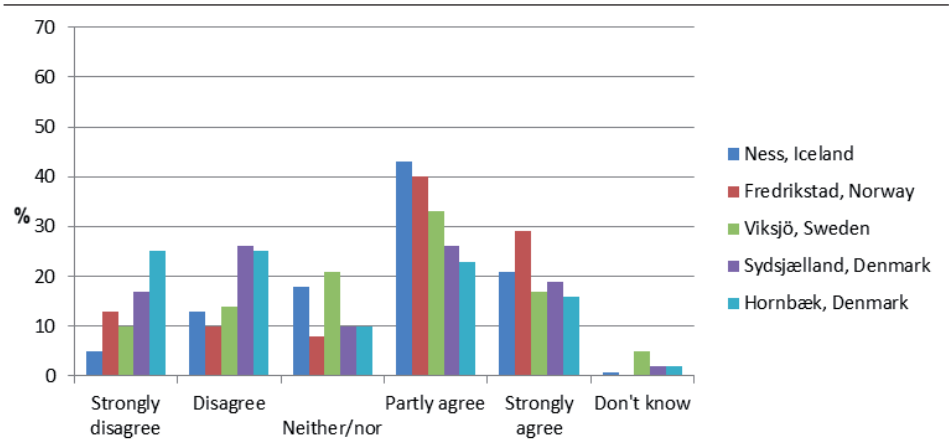


Figure 43. Distribution of responses to the question: "Please state how much you disagree or agree with the statement: 'If efforts were made to have more visitors and activities on the golf course itself, it would be a good way to get more people in contact with the golf sport and thereby get more members.' (When you answer please think of the golf course you are most attached to – your home course)."

Attitudes towards when new activities should take place at the golf course

It is probably not only where, but also *when* new initiatives take place that might make a difference in the golf players' attitudes toward new initiatives – especially when it is on the golf course itself. That new winter-activities are viewed more favourably compared to summer activities is quite obvious (figures 44 and 45). There are some minor differences between the five investigated courses/clubs, but a clear result is that relatively few players are generally negative as long as the activities take place during the winter (i.e., off-season).

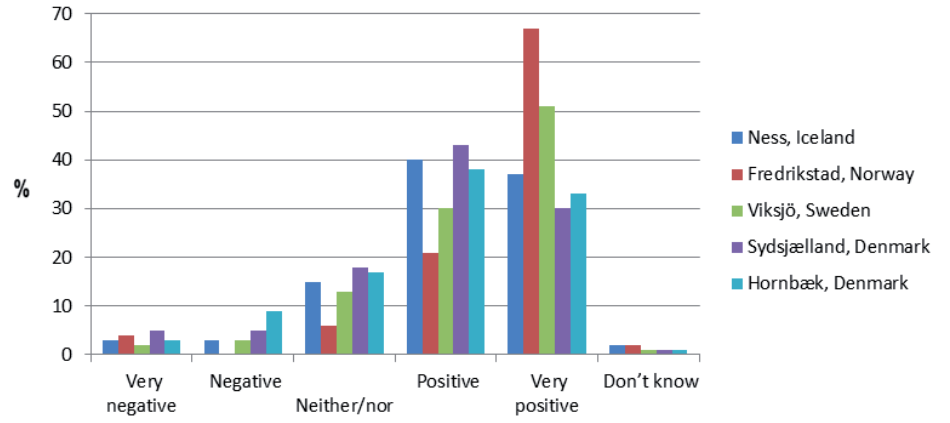


Figure 44. Distribution of responses to the question: "What would your overall attitude be if new initiatives towards other activities than golfing itself should become a reality on your home course – only in the winter?"

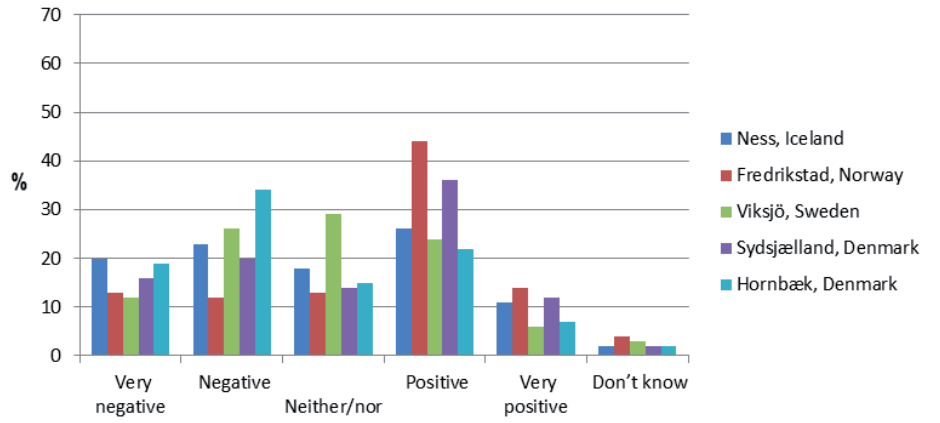


Figure 45. Distribution of responses to the question: "What would your overall attitude be if new initiatives towards other activities than golfing itself should become a reality on your home course – only in the summer?"

Attitudes toward specific activities related to golfing on the course

In addition to knowledge on a more general level as illustrated above, it is valuable to have information regarding which *specific activities* on the golf course that the players find most and least appropriate alongside the golf game. Inspired by the list of possible activities included in the STERF publication "Multifunktionelle golfbaner. En uudnyttet resource" (2011), we have constructed a list of 34 plausible activities that might be considered for inclusion by some clubs/courses. It is quite clear that a general consensus exists among the responding players that activities such as bird watching, walking on the paths and roads at the course, miniature golf as well as skiing and orienteering in the winter are viewed most positively by the players in terms of being combined with the golf activity itself (table 1).

At the other end of the spectrum, we find a number of activities involving dogs (especially if without leash), kite-flying and the use of model planes and boats, as well as some child-centered activities at the bottom of the ranking, viewed as most unsuitable non-golfing activities. For some activities, e.g. bee-keeping and tobogganing, the attitudes are more diverse. It is worth mentioning that the results reflect the different possibilities, traditions and cultures between the investigated populations. Hence, it is hardly coincidental that skiing activities rank positively for players in the Swedish and Norwegian courses, and that e.g. Nordic walking is relatively high in ranking at the Icelandic and the Danish course (Sydsjælland). These activities are already present at a relatively high intensity – and are probably without many major conflicts or annoyances to players.

Finally, a remark on the – maybe somehow surprising – negative attitude towards the use of model planes and boats at the courses: If it has been underlined in the description of the activity, that it would be non-motorized, then the ranking might have been different, as we believe that the responses may have reflected informants aversion to the noise of motorized devices. More detailed results regarding all the 34 investigated activities at the five surveyed courses/clubs can be found in the five appendices.

Table 1. The respondents' ranking of 34 activities that could take place at a golf course – the 10 best suited and 10 least suited. The results are based on responses to the question (1): "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing." – And the question (2): "We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game."

Rank	Ness, Iceland	Fredrikstad, Norway	Viksjö, Sweden	Sydsjælland, Denmark	Hornbæk, Denmark
1 (best suited activity)	Birdwatching	Walking – on the course paths/roads	Skiing (cross-country in the winter)	Walking – on the course paths/roads	Walking – on the course paths/roads
2	Mini golf	Skiing (cross-country in the winter)	Skiing (cross-country on marked trails in the winter)	Birdwatching	Birdwatching
3	Running (exercise)	Skiing (cross-country on marked trails in the winter)	Birdwatching	Mini golf	Skiing (cross-country on marked trails in the winter)
4	Walking – on the course paths/roads	Soccer golf (a.k.a. footgolf)	Boule/petanque	Boule/petanque	Boule/petanque
5	Skiing (cross-country in the winter)	Birdwatching	Walking – on the course paths/roads	Nordic walking	Bee-keeping
6	Orienteering (winter)	Running (exercise)	Mini golf	Running (exercise)	Orienteering (winter)
7	Nordic walking	Mini golf	Exercise with permanent training equipment	Orienteering (winter)	Skiing (cross-country in the winter)
8	Skiing (cross-country on marked trails in the winter)	Frisbee golf	Orienteering (winter)	Skiing (cross-country on marked trails in the winter)	Minigolf
9	Dog walking (in a leash)	Orienteering (winter)	Bee-keeping	Bee-keeping	Running (exercise)
10	Exercise with permanent training equipment	Boule/petanque	Tobogganing	Skiing (cross-country in the winter)	Dog walking (on a leash)
…					
…					
…					
25	Soccer golf	Bee-keeping	Soccer golf (a.k.a. footgolf)	Bee-keeping	Orienteering (summer)
26	Primitive accommodation for scouts	Model boat sailing	Orienteering (summer)	Running (exercise)	Nature kindergarten
27	Tobogganing	Dog training (obedience training)	Dog training (agility course)	Orienteering (spring)	Kite-flying
28	Kite-flying	Orienteering (summer)	Primitive accommodation for scouts	Kite-flying	Allotment garden (without buildings)
29	Dog training (agility course)	Nature kindergarten	Nature kindergarten	Tobogganing	Model boat sailing
30	Dog training (obedience training)	Kite-flying	Kite-flying	Exercise with permanent training equipment	Dog training (obedience training)
31	Horseback riding	Dog training (agility course)	Model boat sailing	Dog training (agility course)	Dog training (agility course)
32	Flying model planes	Horseback riding	Horseback riding	Skiing (cross-country in the winter)	Horseback riding
33	Bee-keeping	Flying model planes	Flying model planes	Flying model planes	Dog walking (without leash)
34 (least-suited activity)	Dog walking (without leash)	Dog walking (without leash)	Dog walking (without leash)	Dog training (obedience training)	Flying model planes

Reasons for playing golf

Understanding the golf players' motivations for taking part in the game might give further insight into the discussions on multifunctionality. Many golfers play golf for a number of different reasons. If most players state that it is the competition that is their major focus, while others see the nature experience as the main reason for playing, then it might provide some valuable background for understanding players' attitudes toward multifunctionality initiatives. In figure 46, the results of the answers to the most important reasons for playing golf are shown. The social motivations as well as the physical exercise are the most dominant motivations, and it is worth noting that for many of the Icelandic respondents, enjoyment of nature is also a major motivation for their golfing.

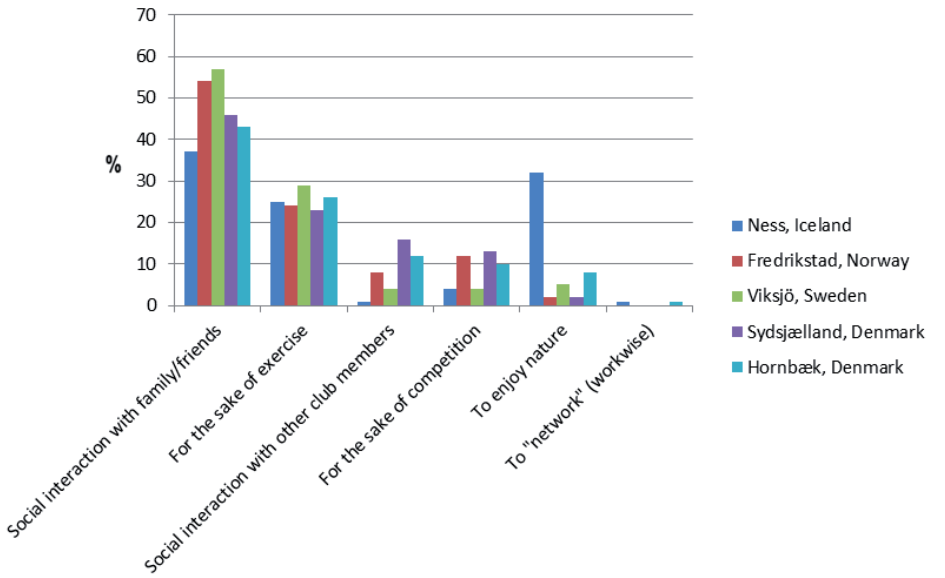


Figure 46. Distribution of responses to the question: "Which of these six causes is most important for you (for playing golf)?"

Summing up

Here we have presented only the most relevant findings in order to provide examples of the kind of knowledge that could be collected through surveys. The questionnaire can also include a number of more specific items, e.g. in relation to new and additional efforts to improve the natural flora and fauna, increase of information, use of pesticides and the course management in general. These additional examples are found in the appendices for the five specific courses that we have surveyed for this report.

Some results that are revealed through surveys, such as that presented here, can seem quite obvious. Indeed, most golf players are in favour of new activities on the course – when they themselves are not playing golf. On the other hand, we obtain insight into the level of support or opposition to certain measures, as well as we get a validity check on the results. Hence, if e.g. a survey showed that most golf players were in favour of a more extreme multifunctionality idea such as orienteering and dog training at the golf course every Saturday and Sunday afternoon during the summer, then we should probably be cautious about the validity of the results from that particular survey.

One factor of importance is the possible skewed nature of the group of respondents – are they representative for the users of the golf club/course, or is there a significant overrepresentation of e.g. old, male players with a high handicap compared to the actual users of the club/course? But having this in mind – and using common sense – well-designed and executed surveys can contribute with valuable knowledge, so the discussions and decisions on new multifunctionality initiatives have more solid grounding.

Finally, allowing the respondents be able to express their viewpoints in free text during the survey can reveal valuable insights and provide more nuance in relation to a more multifunctional golf course/club. The following comments are such examples:

- We golfers should have priority – otherwise, we'll find another club.
- Bad, bad idea – nothing to gain – a golf course is a golf course!
- A really good idea – however, it must not lead to hazardous situations.
- Would be positive relative to others' perception of the golf sport – would reduce the snob-perception.
- Hardly anything to lose – but everything to gain!

From maps to plans

The mapping procedure was carried out on each of the five selected golf courses, and the resulting maps were described. These descriptions are relatively comprehensive, which is why they are not included here, but they are accessible to the reader in appendices One through Five. Each appendix includes the experience mapping and the results of the questionnaires administered to members of each of the five golf courses surveyed.

The experience maps depict the recreational experiences on the five golf courses. What was revealed by the mapping procedure is also what is present at the golf courses, although this does not necessarily mean that the experiences are accessible in the present situation. Some courses may have to be developed further in order to increase the experience level or enhance their ecological function; e.g., by changes in the vegetation or altering the drainage system. Hence, a procedure must be initiated in which the mapped experiences serve as specific information that can be utilized in a development plan that leads towards greater multifunctionality for the specific golf course.

The development plan can be produced locally for the golf course and focus solely on developing the experiences on the course. Alternatively, it can take a broader perspective in which it complies with the municipality's development plan or even to some extent be included in this plan. Of course, it is easier to develop a local plan that relates only to the golf course. However, developing greater multifunctionality in cooperation with the municipality is a planning procedure that may turn out to be very beneficial to the golf course.

Such integration with the municipality has a number of advantages:

- The greenkeepers may need assistance and specialist knowledge in order to develop some of the experience classes most effectively. In this case, municipal specialists in ecology, cultural history or infrastructure could help fulfill this objective. Normally, their interest lies in the contributions that the golf course can make to ecological/environmental and recreational aspects.
- When efforts are made to develop the golf course with more regional recreational facilities for those other than members, it will probably result in greater acceptance form the municipality and society in general. This will probably also be the case if it contributes more to regional ecology as a green stepping stone.

As mentioned in the introduction, there has been a tendency to consider golf courses as closed reserves. Many people consider golf courses as being only for their members and as an area that due to the use of fertilizers and pesticides, with a negative influence on the environment and not least the biodiversity. As mentioned in Chapter One, however, this is often not the case. On the contrary, depending on the course layout and management, a golf course can contribute positively to recreational and ecological values both locally and regionally. A development in this direction can be facilitated by cooperation with planners and officials from the municipality. A greater acceptance and ac-

knowledgement of the recreational and ecological facilities that the golf course provides in a regional perspective may turn out to be beneficial in other situations as well; for example, in case of an enlargement or in connection with obtaining permits to change or renovate technical facilities.

Multifunctional development needs a local or regional perspective. However, the most feasible solution may ultimately depend on the golf course's ownership regime (private, public, member-owned). A public course is typically already incorporated into recreational planning at the municipal level. Both private and member-owned courses may have to undertake their cooperation with the municipal or regional authority from a more initial phase.

The challenge of multifunctional development also depends on the degree of multifunctionality being introduced with respect to new functions and facilities. Here it is relevant to reconsider the three different definitions of multifunctionality mentioned in the introduction. There is no doubt that developing the kind of multifunctionality where different functions take place at the same time in the same area represents a great challenge for most golf courses. This contrasts with the multifunctional activities that take could place at different times or at different places in relation to the more traditional golf activities, which will not be as demanding to introduce.

Figure 47. A public trail for exercises that crosses the Royal Golf Course in Copenhagen. The land is owned by the state, while the facilities are owned by the Royal Golf Club. Photo: Ole Hjorth Caspersen

In other words, some changes towards greater multifunctionality mark a clean break from usual activities on the golf course, while others are simply a matter of change of management practices and will probably not create greater difficulties with the members. Examples of the former are flying kites on the course, which is hardly feasible when golf is being played. Other activities such as Nordic walking and cross-country skiing could be mentioned as being more amenable to development. In general, activities conducted where or when the golf players are not active will be relatively easier to implement.

From plan to strategy

The questionnaires cotnducted at the five golf courses indicate relatively large differences in members' attitudes toward multifunctional use of the course. Hence, it is important that a possible change comply with the members' opinions towards greater multifunctionality. It may very well be that members' attitudes are based on inadequate information about the proposed activities. Hence, they will typically demand more information on the possible consequences. In this situation, it is necessary that the strategy for the planning process include a number of meetings in which the board informs members about the background for the proposed ideas and of the potential consequences for the golf-playing members. These informative meetings can function as a framework in which new possible multifunctional activities can be discussed. The meetings may also include specialists, from the municipality for instance, who cover specific topics in order to elaborate the pros and cons of multifunctional development. The need for a series of such meetings should not be ignored. They may very well be decisive for the successful acceptance and support back-up from the members.

Presently, with a number of Scandinavian golf courses under pressure due to the prolonged economic crisis, an increase in the number of visitors can be important to the course and in the long run could contribute to a better economy. This is why an awareness of the economic benefits of an increased number of visitors is an important element to include in the strategy. In this case, it is not only a question of recruiting new golfers. There are a number of topics where a larger number of non-golfing visitors may contribute positively also. First and foremost an increased number of users will be beneficial to the restaurant, that can attract new customers by direct offers specifically oriented towards the new

Figure 48. Foot boldgolf (also known as soccer golf) is a relatively new activity at Fredrikstad Golf Course. It is free for the members, but it also appeals to non-members who pay a small playing fee to the club. Foto: Ole Hjorth Caspersen

group. Second, an increased number of visitors will most likely also include a number of potential golf players. This channel can be utilized by providing special promotional offers to new members. There are also examples that show that new outdoor activities can appeal to new user groups and contribute to a better economy. The new sport of footgolf, first started in the UK and now introduced at Fredrikstad Golf Course, is an example of such an activity.

These economic aspects are important to include in the member meetings discussing multifunctionality. The importance of an increase in investment should be mentioned besides the enhanced recreational and environmental benefits that come with a multifunctional development.

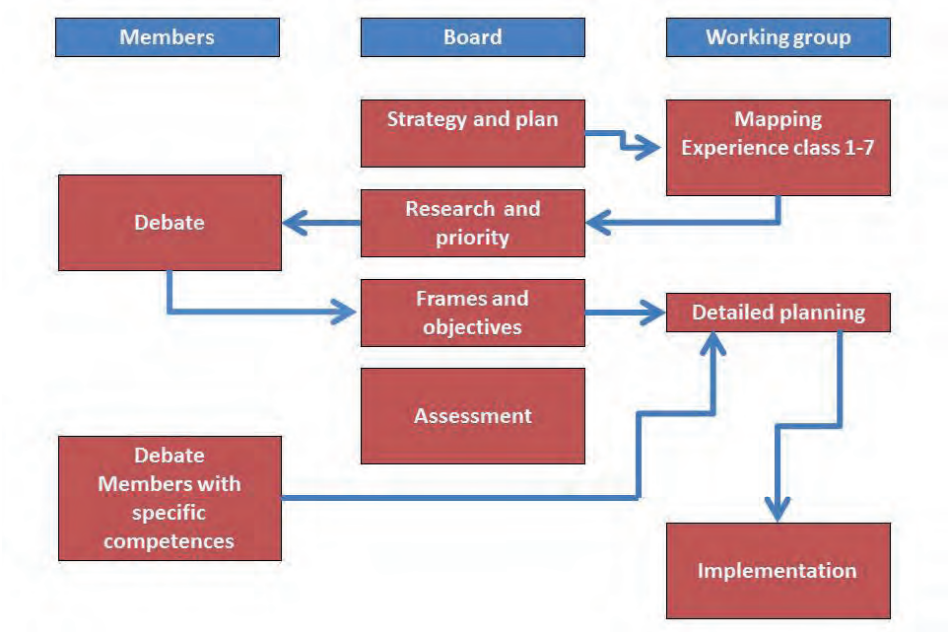


Figure 49. A strategy for a planning procedure could be developed, as illustrated above.

The figure illustrates a strategy for a proposed planning scheme that also involves the members. The degree of member involvement can range from being oriented towards taking part in actual decisions. The board also has the possibility to set up a number of working groups that deal with specific issues related to multifunctional development.

In this case, the figure illustrates a strategy in which members participate in the development of a proposal for multifunctional development. In this strategy, the process includes a number of workshops organized in order to discuss the various options. The strategy ensures that there is a period for development and discussion amongst the members before the final plan is proposed.

The golf course can chose to involve the municipality in the initial phase or wait until the ideas have been discussed in detail amongst the members and board. However, it is important to keep in mind that the municipality may have an interest in the areas (the golf course); for example, there could be a nature conservation interest that would be good to know about even in the initial phase. In some cases, as in the case at Sydsjællands Golf Course, the municipality is planning a relatively large environmental restoration of a stream

which forms the boundary between the golf course and a municipally owned land (Appendix 4). This change will affect some of the holes at the course, which is why a dialogue between the golf course and the municipality will be important even in the initial part of the planning process.

Proposed actions on the five golf courses

In the initial phase of this project, it was decided to select five golf courses that could serve at case studies for development of more multifunctional golf course facilities and functions. In order to assure diversity, five golf courses in four Nordic countries were selected. At each golf course, a mapping of the recreational experiences at the course was carried out, also including the surrounding areas. In the following, a brief presentation of the findings and recommendations is presented. Along with this mapping procedure, a questionnaire was sent to members of the five golf clubs. The responses to this questionnaire are included in the following part section; however, the entire set of responses is available, together with the full course description and recreational analysis, in appendices One through Five.

Hornbæk golf course (local approach)

Hornbæk golf course is located in an undulating landscape characterized by forest and rolling hills, with a stream running through the course. The focus on the recreational experiences has mainly been conducted from a local perspective, although there are landscape elements in the surrounding area that could be included as the nearby forest, Klosterris Hegn. The mapping indicates that the golf course has a diverse landscape that offers the visitor a number of different nature experiences.

There were 175 respondents who completed the questionnaire, and a majority of the respondents found it important that the golf course be managed in such a way that it could be a habitat for the natural flora and fauna. Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 68% of the respondents said that they were positive/very positive, while 12% were negative/very negative.

The club members have expressed a desire for written materials that describe the nature that can be found on the course. A slight majority are positive about the idea of having course information and strategic game tips via their mobile telephones, and a slight majority are negative about being provided with information about the nature. At the same time, most respondents indicated they would not use such an information tool, and they do not believe that such facilities would attract additional greens fee-paying players to the course.

The board cooperates with a local orienteering club, and various non-golf competitions on the golf course have taken place. In order to facilitate this development, the link between the nearby Klosterris Hegn forest could be developed in order to make the connection between the golf course and the forest more prominent. The golf club, together with the local orienteering club

Helsingør Ski- og Orienteringsklub (HSOK), has produced an orienteering map of the golf course. This map constitutes a basis for further cooperation with HSOK. The respondents were asked about their opinion of this particular initiative, and about two-thirds of the respondents found that organizing orienteering events on the course when golf is not played (at night or during the winter months) – is a good/very good idea. In general respondents were clearly more positive than negative towards activities other than golf on the golf course if these were to take place during winter. However, if the activities were to take place in the summer, the majority would express a negative attitude. The golf club has already established contact with Helsingør Municipality. The municipality has supported facilities that can be used for making trails for cross-country skiing. The trails will start from the parking lot and could be extended to include a part of the nearby forest.

There are two schools (Hornbæk and Tikøb) in the vicinity of the golf course, and a new reform of the Danish school system requires schoolchildren to be engaged in outdoor (instructional) activities to a greater extent than before. The varied landscape on and around Hornbæk golf course and the access to toilets and other facilities make the golf course a very well-suited location for close cooperation with the schools. Approximately seven out of 10 of respondents partly or strongly agreed that new initiatives and activities in the club house and club restaurant would be excellent ways to get more people into contact with the sport of golf, – and thereby recruit more members. The attitudes towards a specific proposal for "Teaching of school classes (outdoor education)", one of 34 new ideas for activities on the golf course, was rather mixed, as 22% considered it to be among the 10 least-suited activities, and 26% found it among the 10 best new activities that could be initiated. In general, the respondents are reluctant about non-golfers using the course during the summer months, which could complicate close cooperation with the nearby schools.. Hence, a development in this direction will require close cooperation and dialogue between the board, the members and the schools.

Actions proposed at Hornbæk Golf Course

- The experience mapping shows the many different experience classes available at the golf course, but the relatively few trails are intended mainly for the golf players. These trails could be extended in order to enhance recreational experiences for non-golfers. Due to the design of the course, however, safety issues should be included in these considerations.
- The club members have expressed a wish for written documentation that describe the nature resources that can be found on the course. Due to the diverse ecology, a more elaborated dissemination of both the nature resources and experiences could be produced in order to meet the club members justified concerns. This documentation, when combined with the experience map, could provide adequate background for developing a new nature trail that could be further connected to the nearby forest. This could connect the golf course to the much larger network of forest trails in Klosterris Hegn.
- A nature trail could also help enhance cooperation with the two schools (Hornbæk and Tikøb) in the nearby area, providing an ideal platform for outdoor learning that includes ecology, biodiversity, environmental issues, and physical exercise.

- The golf club already cooperates with the municipality. The municipality has provided advice on how to maintain and increase the biodiversity on the course. This cooperation could be developed further in order to improve the course's function as a green stepping stone of regional importance. The golf club also cooperates with the forthcoming "Kongernes Nordsjælland" national park, which will be located in this part of North Zealand.
- Another issue is the vicinity to the coastal town of Hornbæk and the many tourists that visit this area during the summer months. These tourists represent an unused potential. Guided tours on the golf course that include information on ecology, landform and landscape could be developed in cooperation with Hornbæk's tourist information service, perhaps combined with a bit of golf on the new par-3 course.

Viksjö Golf Course (local approach)

Viksjö golf course is located in one of Stockholm's "green fingers", thus giving the golf course a number of functions that could also be characterized as multifunctional. Next to the golf course is a residential zone, and the residents use the trails at the golf course for recreational walks. Some of these trails are connected to a larger system of trails and paths in the green finger of Järvakilen. The restaurant is relatively large and well-visited. It is used on a daily basis by both club members and visitors not directly related to the golf club. The board wishes to continue the development towards greater multifunctionality. Out of 94 respondents who completed the questionnaire, the response towards having activities other than golf was a generally positive.

Some years ago, an ecological inventory of the golf course was carried out, and the golf club has subsequently cooperated with the municipality on certain environmental issues. This is very much in line with the majority of the respondents, who find it important that the golf course be managed in such a way that it can sustain a habitat for the natural flora and fauna.

The golf course is located in a varied Swedish landscape that shifts between fertile relatively flat lowland areas once used for farming and small elevated rocky hills covered with trees, mainly oak. The time depth in this area is long, and there are visible historical remains going back to the Viking Age in the form of runic stones. However, analysis of the recreational experiences in the area indicated that there are also several other historical remains, such as historical roads that cross the course, as well as remains that can be found in the surrounding forest.

Due to the location in the "green finger" area, there is already focus on the recreational experiences. Based on the analysis of recreational experiences, however, it is suggested that the golf course could promote itself as a place whose antiquity is made more visible and described in the landscape. This historical dimension could attract more historically interested visitors. The focus could be developed in cooperation with the local authorities and could include the reopening of parts of the historical road system, along with provision of information about the former important connection to the nearby Lake Mälaran. Focus could also be on the Skylstahällen, which is a specially ornamented

runic stone at the centre of the course. The promotion of Skylstahällen could be enhanced. This proposal fits well with the overall attitude towards new initiatives focusing on cultural, natural and environmental conditions. Hence, 68% of the respondents are positive/very positive, and only 8% are negative/very negative. In addition, if this proposal were to be implemented, consideration would also have to be given to how to include the club house and club restaurant in these new activities. The majority of the respondents strongly agree that new initiatives and activities in the club house and the club restaurant would be good ways of getting more people interested in golf, and thereby recruiting more members to the club.

Actions proposed at Viksjö Golf Course

- Develop cooperation between regional environmental authorities and Viksjö Golf Club. This could include development of posters and maps that illustrate recreational experiences in the region.
- Information signs highlighting environmental activities of the management of the golf course.
- Developing more information about the time depth and historical perspective, combined with guided thematic tours that include visits at the restaurant that could offer a historical menu.
- Improve the information and visibility of Skylstahällen.
- Improve information on some of the older roads in the area. In cooperation with the local authorities, a feasibility study could be conducted of whether a new trail with a specifically historical perspective could be developed.
- Better branding of the restaurant and focus on non-golfer visitors to the area.
- Improve information on the club's homepage about the recreational experiences in the area.

Sydsjællands Golf Course (local and regional approach)

The recreational potential of Sydsjællands Golf Course is due largely to its location, both locally and from a regional perspective. Locally, the course is close to a school in the nearby village of Mogenstrup, and as with Hornbæk Golf Course, there is a great opportunity for cooperation between the golf club and the school.

From a nature perspective, Sysjællands Golf Course provides an interesting perspective for further development. The strongly regulated Fladså stream traverses the course, and the club cooperates with the municipality in a nature restoration project that will alter the stream towards a more natural condition. This will contribute to attracting more visitors, especially if access to the area is increased. A total of 105 persons completed the questionnaire, and attitudes towards having activities other than golf on the course were largely positive, especially if these extra-golf activities were to take place during the winter.

Due to its location and the natural conditions in the area, there are relatively many birds on the course and in the surroundings. Hence, special events that

attract visitors with interest in birdwatching could be organized during the golfing season.

The golf course is located beside an esker that includes a number of trails that leading into/out of the town of Næstved. This location provides a background for a development that would transform the traditional golf course/club towards a new function as a country club, a function that could appeal to a broader public. The club would maintain its function as golf course, but it could also attract new visitors who might have a more general interest in nature because it will comprise other features than golf, i.e. bird watching, guided nature walk, possibility for exercise, rental of bicycles.

In the survey, two-thirds of the respondents stated that developing the clubhouse into a local tourist office would be a good/very good idea, one-sixth found it a bad/very bad idea. A tourist office is not the same thing as a country club, but it indicates that a large proportion of the members are open for changes in the club's current function. A country club normally offers the visitor a number of different activities, and the respondents indicate that there are a number of activities that they find feasible. Out of 34 different activities one could imagine taking place at a golf course, the activities that most respondents (50% or more) found *best* suited to fit alongside the golf game were walking on the course paths/roads, birdwatching, miniature golf, boule/petanque, Nordic walking, and running (exercise).

One of the local facilities proposed for future development is the restaurant, a proposal supported by the majority of the survey respondents. Approximately three out of four respondents partly or strongly agree that new initiatives and activities in the clubhouse and club restaurant would be good ways to interest more people in playing golf, and thereby recruit more members.

Local actions proposed at Sydsjællands golf course

- A future restoration of the strongly regulated Fladså stream will probably require a reconstruction of holes 11, 12 and 13. This could be used as an opportunity to construct an extension of the existing trail system along the small stream that would make it possible for visitors to take a 20-minute walk around the golf course .
- The restaurant should be made more appealing to visitors and to local recreative organizations as well as to golfers. Contact could be made with the organization of Nordic walkers, and promotional offers combining recreation and dining could also be made to other groups in order to increase the number of users. The golf course also offers facilities such as showers and toilets that could be used by the recreative organization members as well.
- The golf club could make available its office space or meeting rooms for use by local organizations in the area.
- Thematic tours for bird- and nature interested visitors could be arranged in the season, with start or finish at the restaurant. In June, there are several nightingales at the golf course, and special nightingale tours could be arranged. The golf course is situated besides one of the largest eskers in Denmark, which could appeal to the development of special guided tours with focus on geology and landform.

- Improved cooperation with the nearby school based on a recreational use of the par-3 course could be made. There are good possibilities for outdoor learning based on the Danish school reform that began in 2014. Furthermore, this would comply with the municipal health policy (Sundhedspolitik 2014-2017).
- Contacts should be made with the municipality regarding a recreational link to the hiking and trail system at the esker. The golf course could be developed to act as a local centre that includes the experiences at the esker. This development would comply with the aim and intentions of "The green plan" (Grøn Plan 2009).

Regional actions proposed at Sydsjællands Golf Course

In order to act as a centre for visits of a more regional perspective, the golf course should develop and offer a number of special facilities.

- The main office could offer brochures and material informing visitors about the local area. This includes information of special bicycle roads in the area.
- A number of proposed hiking and bicycle routes should be developed, and the brochures/maps should be made available at the golf course.
- The homepage could be developed to inform users about multifunctional options and possibilities from a recreational perspective.
- It is suggested that the golf club invest in a number of bicycles for rental; some of these should be electric, in order to appeal to older age groups as well. The rental could be combined with a special dining promotion ('bike and dine') from the restaurant.
- In cooperation with the municipality, a physical link should be made to national bicycle routes 58 and 88. The golf course could serve as a rest stop and lunch point.

Ness Golf Course (local and regional approach

Ness Golf Course is located just outside Iceland's capital of Reykjavik, but is also closely related to a nearby green area only partly developed for recreational use. There are plans for further recreational development in the area, and an old industrial zone will be transformed into a new housing estate. These future changes give the golf course a special motivation to apply a regional approach when they plan for future multifunctional facilities. The golf course's relations with its surroundings are important, and this is why the strategy for further multifunctional development must include the forthcoming recreational development of the Seltjærnes peninsula, on which the golf course is located. This is the only green area in this part of the city, and it already includes a museum and historical remains related to fishing in the area. Beside this is the nearby small Grotta peninsula, with an old lighthouse, a site that already attracts tourists. During the winter, there are bus tours to the peninsula where tourists can view the "northern lights", and during the summer months, they come to experience the view and watch for seals and whales.

The analysis of recreational experiences clearly indicated that there exists a potential for further recreational development of the golf course. And the questi-

onnaire responses amongst the 117 who completed the questionnaire there are generally more positive than negative respondents towards having additional, non-golfing activities at the golf course.

The golf club management has expressed a desire to move the clubhouse closer to the centre of the recreational area. Even smaller changes of the existing club house could appeal to a broader public. The tern nesting colony makes this place very special for visitors with birdwatching interests because it is possible to view these birds from unusually close distances. Bird enthusiasts would probably use the restaurant, but this requires that these options and facilities of the golf course are promoted in a more active way than they are presently. Such a development fits well with a large majority of the respondents, who found it important that the golf course be managed so it could help sustain a habitat for the natural flora and fauna. Out of 34 different activities that one could imagine, those activities found by respondents (50% or more) to be best suited to fit alongside golf were birdwatching, miniature golf, running and walking on the course paths/roads. In general, the data indicate that there is a great potential to attract more visitors to the area due with recreational possibilities in the area, but it is necessary to initiate a process that would promote and highlight these possibilities. This might be most effectively developed by cooperation with the tourist office and hotels.

Local actions proposed at Ness Golf Course

- The area is already a popular place to watch wildlife, the sunset and the northern lights. By adding a second floor to the restaurant, an even better view could be created to watch the tern breeding area, the northern lights, the coast and wildlife.
- A better road connection from the restaurant to the coast would probably result in more visitors to the restaurant.
- More benches along the coast in the safe parts, in relation to the sea mark, for instance.
- The abandoned concrete house on the coast could be turned into a wildlife viewing tower/shelter by relatively simple means, including a bench and information posters.

Regional actions proposed at Ness Golf Course

- Information is needed about the trail around the golf course and about the safety issues related to the use of the road for recreational purposes. This information should be included in the general information regarding the entire area. When standing at the parking lot at Grottá, there should be information about “the Ness nature trail”.
- A more prominent branding of the restaurant should be initiated. This is the only restaurant in the area, it offers a splendid view, and it can be used by everyone. Promotion of the restaurant should be carried out at different places, e.g., in the parking lots.

Fredrikstad Golf Course (regional approach)

Fredrikstad Golf Course is uniquely located just outside the old fortified town of Fredrikstad. Beside this very special location, there are also a number of other facilities in the neighbourhood, and the course lies close to a larger recreational area. The golf course is relatively new, and the landscape in which it is situated is quite flat, with a few hills, but including many ponds and smaller lakes. The mapping of recreational experiences here has focused mainly on the facilities in the surrounding area. The maps generated provide an excellent overview over the possible experiences that visitors can enjoy in the area.

Suggestions for future multifunctional development of Fredrikstad Golf Course

The questionnaire was completed by 91 users of Fredrikstad Golf Course. The vast majority of respondents were positive disposed toward further multifunctional development. As a follow-up on the cooperation with the University of Copenhagen, the club has developed a plan for further multifunctional development. This plan takes its point of departure in the facilities on the golf course and includes five topics, shown in Appendix Five.

The plan is linked to a number of persons responsible for the five topics, and development of the multifunctional golf course is now in progress. The plan addresses course features, possibilities and facilities, and it complies with the recreational mapping of the course. Furthermore, the plan is not in conflict with the members' opinions as seen in the survey. Fredrikstad will expand its facilities and related recreational possibilities, and this will help attract more visitors and enhance their experiences when they visit the golf course.

Further possibilities exist for benefitting from a more regionally-based development. The questionnaire results indicate a large majority of male golf players compared to female players (78/13), and most of these players have a full-time membership in the club. If the club wants to expand the number of players beyond the present number, this can be done in several ways. One way is to try to enlarge the number of permanent memberships by providing better facilities and experiences on the course. Another method could be to provide facilities and experiences that may appeal to the whole family. This method could use a regional approach and may prove to have large potential for future development. The golf course could engage in a marketing campaign to attract new users. This campaign could promote the golf course as one of several leisure facilities in Fredrikstad. This way of promoting the golf course may attract golfers interested in other forms of membership, such as long-distance or weekend membership.

This strategy is based on the regional experience mapping that revealed an unusually large number of possible experiences in the surrounding area (see Appendix Five). Several of the experiences could be considered as being family-friendly activities such as horseback riding, swimming, archery, bicycling, and hiking.

Conclusion

This project has focused on the development of a method for mapping and developing recreational experiences that can be used as a tool for developing multifunctional golf courses. A method developed for mapping recreational experiences on a regional scale, originally used for municipal and regional planning, was applied to golf courses. This new application of recreational experience mapping included the implementation a number of new indicators based on the land use classes that can be found at golf courses. In addition, the use of field inventories was increased. With these changes, the method could become applicable on a local scale, and it became possible to implement it within the boundary of a golf course.

The purpose of the method is two-fold. First, it provides an overview over existing recreational experiences on the golf course. Second, it can be used to create an overview over future recreational potential. The overview can be developed further in a process that also includes the development of a strategy and concrete plan for future changes. The method was furthermore transformed from being a tool used by specialists to a tool that was easy to understand and use by relatively simple means. The new version for mapping of recreational experiences at golf courses can be based on electronic map data or by use of high resolution topographical maps, or even better, by paper or electronic versions of aerial photos.

The survey conducted at five different golf courses has shown that the method does not depend on the land use on the particular course and that it can be applied at both local and regional scales. The surveys that were conducted with golf club members have deliberately used slightly different procedures, thus indicating the flexibility of the our method. The result of the mapping procedure provides important information for developing multifunctional golf courses, and in the analysis of the future relation between the golf course and the surroundings, our method can also be applied at the regional level as well.

References

Andrew N. J., 1987.
Wildlife and related values of park golf course ecosystems. Res. Project Rep. Hamilton County Park District, Cincinnati, OH.

Brandt J. and Vejre H. 2004.
Multifunctional Landscapes. Volume 1: Theory, values and history (Southampton: WIT Press).

Colding J., Lundberg J., Lundberg S. and Andersson E., 2009.
Golf course and wetland fauna. Ecological Applications 19 (6), 1481-1491.

Driver, B.L., Brown, P.J., Stankey, G.H. and Gregoire, T.G., 1987
The ROS Planning System: Evolution, Basic Concepts, and Research Needed. Leisure Sciences 9, 201-212.

Grahn. P., Stigsdotter, U.A. and Berggren-Bäring A.M., 2004.
Eight experienced qualities in urban open spaces. Cost Action C11.

Green, B.H. and Marshall, I.C., 1987.
An assessment of the role of golf courses in Kent, England, in protecting wildlife and landscapes. Landscape and Urban Planning 14, 143-154

Hammand R. A. and Hudson M. D., 2007.
Environmental management of UK golf courses for biodiversity—attitudes and actions. Landscape and Urban Planning, 83, 127-136.

Hartig, T., Evans, G.W., Jamner, L.D., Davis, D.S. and Gärling, T., 2003.
Tracking restoration in natural and urban field settings. Journal of Environmental Psychology, 23, 109-123.

Jensen, F.S., 1998.
Friluftsliv i det åbne land 1994/95 (Outdoor recreation in the countryside 1994/95). Forest and Landscape Research, 25. Hørsholm: Forskningscentret for Skov & Landskab, Miljø- og Energiministeriet,(In Danish, with English summary).

Jensen, F.S., 1999.
Forest recreation in Denmark from the 1970s to the 1990s. The Research Series, no. 26-1999, Hørsholm: Danish Forest and Landscape Research Institute.

Jensen, F.S. and Koch, N.E., 2004.
Twenty-five Years of Forest Recreation Research in Denmark and its Influence on ForestPolicy. Scandinavian Journal of Forest Research, 19, Supplement 4, 93-102.

Junker, B. and Buchecker, M., 2008.
Aesthetic preferences versus ecological objectives in river restorations. Landscape and Urban Planning, 85, 141-154.

Kaae, B. andMadsen, L.M., 2003.
Holdninger og ønsker til Danmarks natur (Opinions and wishes to Danish nature). Hørsholm: Forskningscentret for Skov & Landskab, Miljøministeriet (in Danish).

Kaplan, R. and Kaplan, S., 1989.
The Experience of Nature. Cambridge: Cambridge University Press.

Manfredo, M.J., Driver, B.L. and Tarrant, M.A., 1996.
Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. Journal of Leisure Research, 28, 188-213.
Nassauer, J.I., 2004.
Monitoring the success of metropolitan wetland restorations: cultural sustainability and ecological function. Wetlands, 24/4, 756-765.
Næstved Kommune, 2013.
Sundhedspolitik 2014-2017.
OECD, 2001.
Multifunctionality: Towards an analytical framework. Paris: OECD.
Pearce F., 1992.
How green is your golf? New Sci., 139, 30-35.
R & A., 2010
The Old course. A guide to the environmental management of the Links for wildlife conservation. 1-34
Salgot M. and Tapias, J. C., 2006.
Golf Courses: Environmental Impacts. Tourism and Hospitality Research, 6, 218-226.
Sorace, A. and Visentin, M., 2007.
Avian diversity on golf courses and surrounding landscapes in Italy. Landscape and Urban Planning, 81, 81-90.
STERF, 2011
Multifunktionelle golfbaner. En uudnyttet ressource. Sted: STERF, 1-31´
Thulin J., 2011.
Mångfunktionella golfbanor – Rekreativa och pedagogiska platser, Alnarp,1-36
Tyrväinen, L., Mäkinen, K. and Schipperijn, J., 2007.
Tools for mapping social values of urban woodlands and other green areas. Landscape and Urban Planning, 79, 5-19.
Van den Berg, A.E., Hartig, T. and Staats, H., 2007.
Preference for Nature in Urbanized Societies: Stress, Restoration, and the Pursuit of Sustainability. Journal of Social Issues, 63, 79-96.
Velarde, M.D., Fry, G., Tveit, M., 2007.
Health effects of viewing landscapes - Landscape types in environmental psychology. Urban Forestry & Urban Greening, 6, 199-212.

Appendices

Hornbæk (Danmark)

Viksjø (Sweden)

Ness (Iceland)

Sydsjælland (Denmark)

Fredrikstad (Norway)

Hornbæk golf cource

The course and the club

Hornbæk golf club and course is located in North Zeeland in Denmark. The club was founded in 1989 and the golf course was opened in 1998. The club has 1.100 members and is owned by the members. The club has an 18 holes course and in spring 2015 a new 9 hole course (Par 3 course) will be opened. The club also includes a golf shop and a restaurant that is open for both members and visitors.

The course geography and lay out

The golf course is located 4 km south of Hornbæk city which is a well-known resort town. It is located in a district characterised by undulating terrain next to the forest Klosterris hegn. This landscape is part of the North Zeeland moraine landscape hence it is dominated by many small hills and lakes. This diverse landscape also characterises the golf course and 18 smaller and larger lakes and ponds are scattered around the course. A stream named Gurre Å runs through the area.

The course lay out is designed so the five holes in the vicinity of the clubhouse are located in a former gravel pit that have been landscaped by land fill. 3 holes are situated in an area dominated by meadows and the rest at former farmland. The original field margins have been preserved which is why several of these field margins are characterised by large and old oak trees. An old stone dike form constitutes the boundary towards Klosterris hegn.

Wishes to a future development

Due to the location in a tranquil nature area the environmental awareness during the last 10 years has increased and today it constitutes an important factor in the daily management of the golf course. The location in an area that comprises several landscape elements of great importance to ecology and recreational experiences also have motivated the golf course to focus on a broader use. This is why the golf course has engaged in the development of multifunctional golf and the development of the existing golf course facilities and functions.

A multifunctional development that open the course for other users may influence the surrounding society's interest for the course and the recreational experiences that it provides which is considered as an important aspect by the club board.

This explains why the golf course has become interested in a multifunctional development of the course and its facilities. The vicinity to Hornbæk town

may influence the number of visitors at the course, and the hope is that a multifunctional development that benefits from the existing facilities at the course may appeal to a broader group of users and visitors and attract new members.

By appealing to a broader group of users and by providing experiences and challenges beside golf for example in periods of the year where the golf players are not active could also It is the hope that this may contribute positively to the club economy and additionally benefit the restaurant.

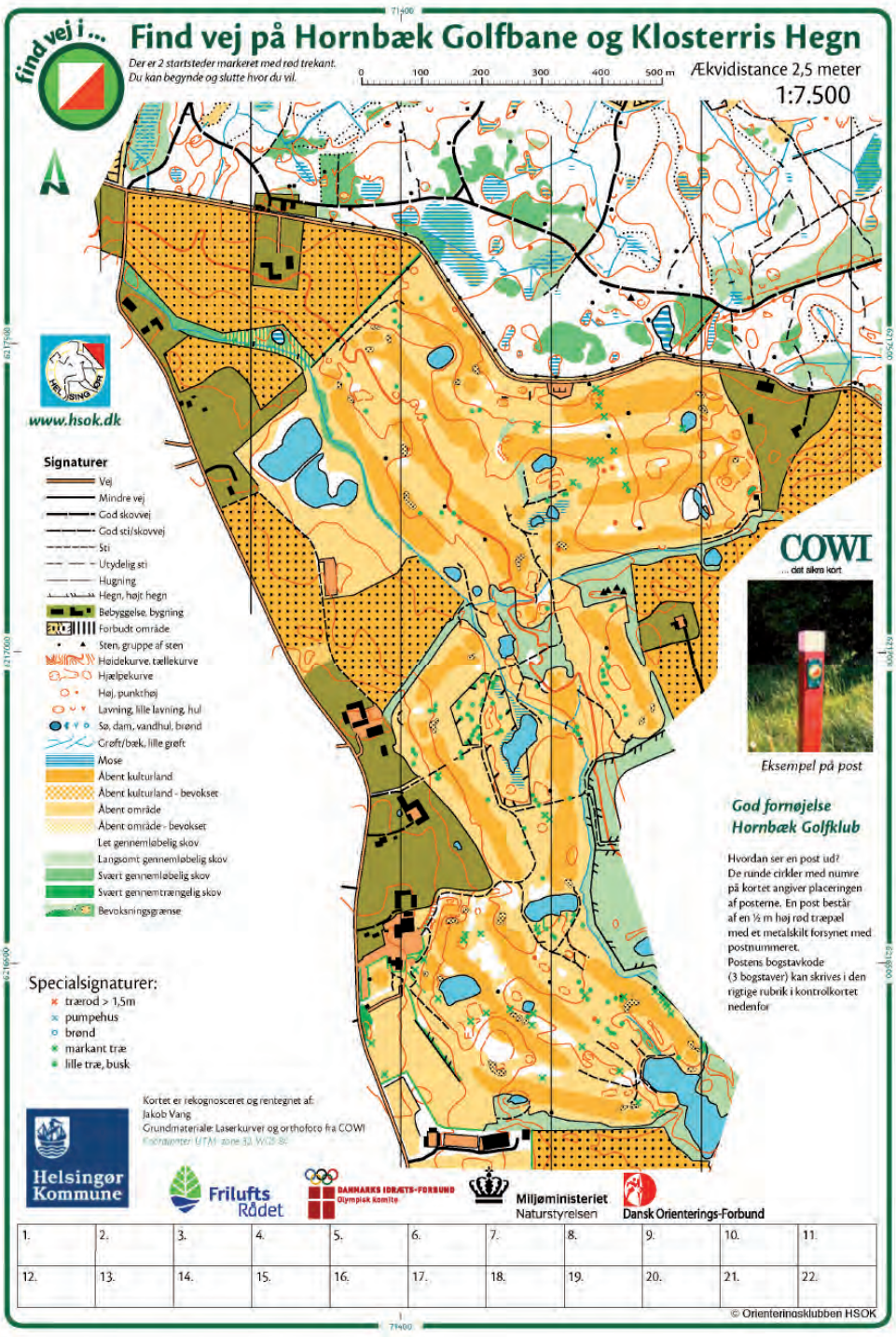


Figure 1. Hornbæk golf course. The map illustrated the course depicted on newly produced "Orientering map" made by Jacob Vang from HSOK.

Mapping of recreational experiences

Figure 2. The map of recreational experiences at Hornbæk golf course. Map by Patrik Karlsson Nyed

Pristine and untouched areas

Due to the genesis of the course and the location in an area that still is used for agriculture and therefore is relatively dynamic this experience class is not found on the course however they are present in the nearby forest Klosterris hegn.

Feeling of forest

The eastern boundary of the golf course consists of forest that constitutes a barrier towards the nearby gravel pit that still is active. Smaller forest plots scattered on the course enable the visitor to have a park experience.

There are a number of different commons in the central part of the course; the largest is managed by grassing by sheep's.

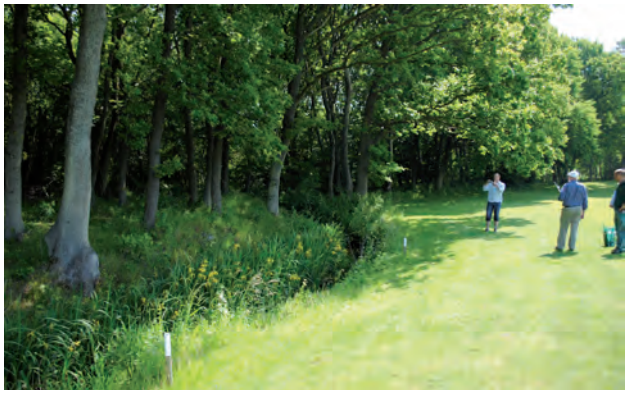


Figure 3. The is located next to large forest, in this place Gurre stream are the boundary between the course and the forest. Photo: Anne Mette Dahl Jensen

Figure 4. Park experience can be found several places at this course. Photo: Jens Peter Nielsen

Figure 5. There are several smaller commons at the course one is designated as nature conservation area. Photo: Jens Peter Nielsen

Figure 6. Meadow next to Gurre stream. Photo: Jens Peter Nielsen

Panoramic views, water and scenery

The length of the golf course is 2 km and it is not broader than 500 m. This course design combined with the undulating terrain creates several panoramic views especially to the nearby landscape.

Biodiversity and land form

The location close to the forest Klosterris hegn and the fact that Gurre Å runs through the course creates an area with a large ecological diversity. Especially are several of the small ponds characterised by a great biodiversity.

Figure 7. Viewpoint and park like experience from green 12. Photo. Jens Peter Nielsen

Figure 8. From hole 7's tee a view towards south. Photo. Jens Peter Nielsen

Figure 9. From hole 7's tee looking vest. Photo: Jens Peter Nielsen

Figure 10. Biodiversity, landform and park experience combined. Photo: Jens Peter Nielsen

Figure 11. An exotic visit by a stork hunting the many frogs in the area. Photo: Søren Petersen

Figure 12. Several of the lakes are characterised by a large diversity of plants and insects. Photo: Jens Peter Nielsen

Figure 13. Extensively managed wetland area. Photo: Anne Mette Dahl Jensen

Figure 14. Extensively managed wetland area. Photo: Anne Mette Dahl Jensen

Cultural history

The golf course is located in a traditional Danish cultural landscape dominated by agriculture and forest and there are good views to the landscape including the fields, hedgerows and farmland. The course has opened its boundary towards the surroundings and this combined with the character of the course make it fit naturally into the landscape. The most significant historical element is a 200 year old stone dike that constitutes the boundary between the forest Klosterris hegn and the golf course.

Figure 15. The 18century stone dike defines the boundary of the forest "Klosterris hegn". Photo: Jens Peter Nielsen

Activity and challenge

The course cooperates with a local Orientering club and the course has for the first time been used for special competitions and an adventure race. In the winter the course has been prepared for cross country skiing. A trail for horse riding crosses the course. This trail is also being used by bicycles. Another trail leads from the club house to Klosterris hegn where the trail continues into the forest.

Figure 16. A Cross country competition has with success been completed at the golf course. The map at figure 1 was used in the competition. Photo: Jens Peter Nielsen

Figure 17. Children enjoy the sheep at one of the extensively managed commons on the course. Photo: Anne Mette Dahl Jensen

7 Service and gathering

The club house includes a restaurant and there are a number of rooms available for different activities. Presently a bridge club is active during the wintertime. Beside the restaurant there is a shop for golf accessories. Benches and tables are located at several locations on the course and there two defibrillators at the course and in the club house.

Figure 18. The club is a centre for recreational and social activities. Photo: Jens Peter Nielsen

Figure 19. The club also includes a shop for golf accessories. Photo: Jens Peter Nielsen

Experience values in the area

The course comprises a number of different experience values and when combined with the nearby forest it provides a very good setting for diverse nature experiences. The area is integrated in the surrounding agricultural landscape and the different kinds of forest classes, combined with the many ponds and the stream Gurre Å enable the visitor to experience a classic Danish landscape.

Suggestions for future multifunctional development

The golf course has together with the local Orientering club (HS0K) made an orientering map of the golf course. This map constitutes a basis for further cooperation with HSOK.

The municipality of Helsingør have supported facilities that can be used for making tracks for cross country skiing. The tracks will start from the parking lot and could perhaps be extended to include a part of the nearby forest.

Action proposed

- The experience mapping illustrates that there are many different experiences classes available at the golf course, but the relatively few trails are mainly intended for the golf players. These trails could be extended in order to provide better access to the existing recreational experiences and perhaps even connected to the horse trail.
- The club members have expressed a wish for written material that describes the nature that can be found on the course. Due to the diverse ecology a more elaborated mediation of both nature and experience could be produced in order to meet the club members justified concerns. Additionally this

material when combined with the experience map could provide the background for the development of a new nature trail that perhaps could be connected to the nearby forest. This could connect the golf course to the much larger network of trails in Klosterris forest.
- The golf course already cooperates with the municipality that has helped with advice on how maintain and increase the biodiversity on the course. This cooperation could be developed further in order to improve the function as green stepping stone of regional importance.

A nature trail could also contribute to the cooperation with the two schools (Hornbæk and Tikøb school) in the nearby area and provide an ideal setup for outdoor learning that include ecology, biodiversity and environmental issues. Another issue is the vicinity to Hornbæk town and the many tourists that visit this area. They may represent an unused potential. Perhaps guided tours on the golf course that include information on ecology, landform and landscape could be developed in cooperation with the tourist information in the Hornbæk – combined with golf at the new par 3 course.

Golf players' viewpoints

Hornbæk Golfklub, Denmark

To get the viewpoints of the golf players at Hornbæk Golfklub regarding multifunctional initiatives, a web based questionnaire was developed. The questionnaire was identical for all five golf courses/clubs included in the project. However, specifically for Hornbæk Golfklub an extra section regarding the viewpoints on three actual initiatives which have been discussed and tried out in practice was included: Orienteering, a "Find your way"-route crossing the course, and the use of mobile phone for information regarding hole/game information or the nature at the course.

Contact to the respondents was made through the homepage of the club/course, and in newsletters. During February 2014 – August 2014, a total of 379 persons have opened the survey, and 265 have for sure read one or more of the questions. 175 respondents completed the questionnaire by answering all questions. The following analysis is based on these *175 respondents*.

Summary of selected results – for the full, balanced results, please see the specific tables and figures following this brief overview:

- There are clearly more positive than negative respondents towards other activities on the golf course than golfing itself if it takes place in the wintertime – on the contrary, if the activities take place in the summer, the majority express a negative attitude.
- A majority of the respondents find it important that the golf course is managed so it can contribute as habitat for the natural flora and fauna.
- Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 68% are positive/very positive, and 12% are negative/very negative.
- Out of 34 different activities one could imagine taking place at a golf course, the ones that most respondents (50% or more) find *best* suited to fit alongside the golf game are: Walking on the course paths/roads, bird watching, skiing (cross-country on marked trails in the winter), boule/petanque, beekeeping, orienteering (winter), skiing (cross-country in the winter), and mini golf – and 50% or more found the following activities *worst* suited: Flying model planes, dog walking (without leash), horseback riding, dog training (agility course), dog training (obedience training), model boat sailing in the water holes of the course, allotment garden (without buildings), and kite-flying.
- Among the present guests at the golf course, dog walkers and horseback riders are the categories that most respondents find reducing the pleasure of playing golf.
- About 2/3 of the respondents found that organizing orienteering events on the course when golfing not is taking place – at night or during the winter months – is a good/very good idea.

- There is an overweight of negative respondents for letting people follow a (compulsory) path through the course, when they are following a "Find your way"-route.
- A slight majority is positive for the idea of having hole/game information via the mobile telephone, and a slight majority is negative about information about the nature. At the same time, most respondents indicated they would not use such information tool, and they don't believe such facilities would attract more numerous green fee players to the course.
- The majority, approximately 7 out of 10 of the respondents partly or strongly agree in that new initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport – and thereby get more members.
- A short general characterization of the respondents: 68% are older than 50 years and 5% younger than 40 years; 72% are males; 70% have a handicap between 15 and 35.9; 21% have played golf 5 years or less and 20% have played more than 15 years; social interaction with family and friends are the most important cause for playing golf for 43%, exercise is most important for 26%, social interaction with other club members is most important for 12%, the competition is most important for 10%, enjoying nature is most important for 8% and finally, to "network" (workwise) is indicated by 1% as the most important reason for playing golf.

Table H1: Distribution of responses to the question: "Please state how much you disagree or agree with each of the following 9 statements. When you answer please think of the golf course you are most attached to – your home course."

%	Strongly disagree	Partly disagree	Neither /nor	Partly agree	Strongly agree	Don't know
1. If efforts were made to have more visitors and activities in the ***club house***, it would be a good way to get more people in contact with the golf sport and thereby get more members.	9	9	11	31	38	2
2. If efforts were made to have more visitors and activities in the ***club restaurant***, it would be a good way to get more people in contact with the golf sport and thereby get more members.	7	8	8	30	45	2
3. In general, I think it would be positive, if the social life is increased by the club house/restaurant being used by other people than golfers.	11	10	8	28	41	2
4. If efforts were made to have more visitors and activities on the ***golf course itself***, it would be a good way to get more people in contact with the golf sport and thereby get more members.	25	25	10	23	16	2
5. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not affect ***security***.	31	17	10	21	19	2
6. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not ***disturb*** my golf play.	25	19	7	18	30	1
7. More of my family, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	32	14	27	14	6	6
8. More of my friends, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	31	19	26	15	2	6
9. I myself would like to use the golf course for visiting nature and other activities than playing golf.	32	22	18	18	9	2

Table H1 shows the distribution of respondents' level of agreement with 9 statements about different aspects of multi-functionality in relation to golf courses. Most respondents agreed that initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport, and thereby get more members. 50% of respondents partly or strongly disagree that more visitors and activities on the golf course itself would be a good way to get more people in contact with the sport.

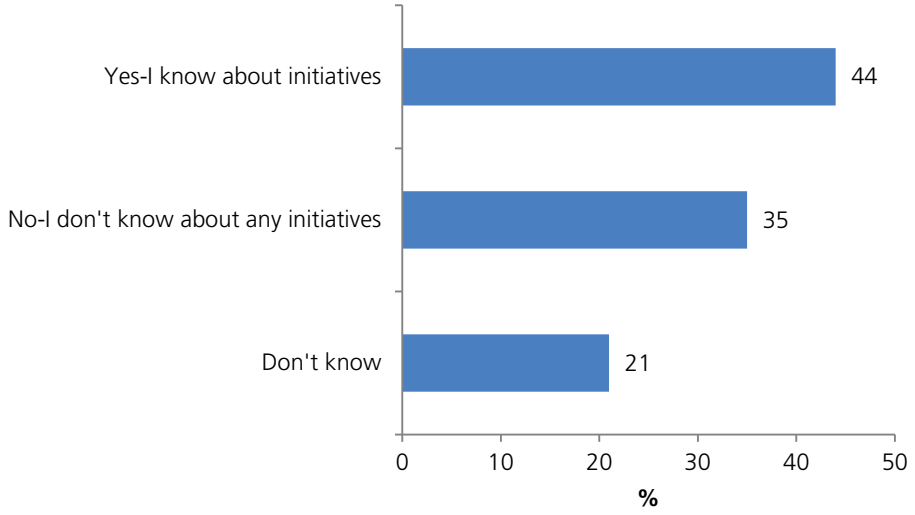


Figure H1: Distribution of responses to the question: "Do you know if any initiatives have been made on your home course that allows other people than golf players to use the course, club house and/or restaurant?"

44% of respondents knew about initiatives on their course that allowed other people than golf players to use the course, club house and/or restaurant (Figure H1).

Table H2: Distribution of responses to the question: "What would your overall attitude be, if new initiatives towards other activities than golfing itself should become a reality on your home course?"

%	Very negative	Negative	Neither /nor	Positive	Very positive	Don't know
Other activities, only in the ***summer***:	19	34	15	22	7	2
Other activities, only in the ***winter***:	3	9	17	38	33	1
Other activities, ***all year***:	14	26	19	30	9	2

Table H2 shows that more than 50% of respondents had a negative or very negative overall attitude towards other activities than golfing that takes place on their home course in the summer. More than 7 out of 10 have a positive or very positive overall attitude towards other activities taking place on their home course only in the winter.

Table H3: Distribution of responses to the question: "When talking about "multi-functional" golf courses, one often also thinks about the cultural, natural, and environmental conditions. When you answer, please think of the golf course you are most attached to – your home course."

%	Not important	Somewhat important	Important	Very important	Don't know
How important do you believe it is that …					
… an extra effort is made to improve living conditions for the natural **flora** on the golf course?	7	17	37	38	1
… an extra effort is made to improve living conditions for the natural **fauna** on the golf course?	3	12	40	44	1
… the golf course is **designed**, so it can contribute as habitat for the natural flora and fauna?	9	14	39	35	2
… the golf course is **managed**, so it can contribute as habitat for the natural flora and fauna?	5	17	39	39	1
… information is given about flora and fauna to other visitors?	17	26	27	28	2
… the golf course is managed in an environmentally friendly way?	5	13	35	45	1
… in five years, pesticides (weed, insect- and fungi control) are no longer used on the golf course?	13	24	31	30	2
… possible cultural or historic monuments are preserved on the golf course?	6	14	37	38	5
… information is given regarding possible cultural or historic monuments to other visitors?	17	23	26	27	7

Table H3 shows that, in general, the majority of the respondents believe, that "multi-functional" golf courses, which include cultural, natural, and environmental conditions, are important to very important. For example do 84% of respondents believe that it is important to very important that an extra effort is made to improve living conditions for the natural fauna on the golf course.

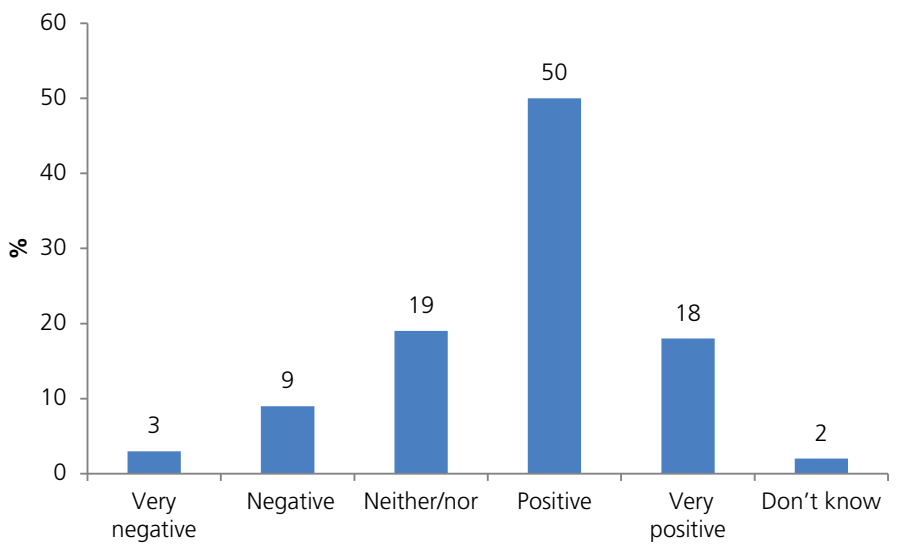


Figure H2: Distribution of responses to the question: "What will your overall attitude be, if new initiatives towards more focus on cultural, natural, and environmental conditions would become a reality at your home course?"

68% of the respondents have an overall positive/very positive attitude towards new initiatives with more focus on cultural, natural, and environmental conditions (Figure H2). Only 12% have a negative or very negative attitude towards this.

Figure H3: Distribution of responses to the question: "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing."

When asked about which activities would be worst suited to fit alongside the golf game, flying model planes and dog walking (without leash) are the activities that most respondents believed would be the worst (Figure H3). Overall, activities involving dogs, horses and model planes and model boats are the activities worst suited, according to the respondents.

Skiing, bird watching, and orienteering at night or in winter are the activities, which fewest respondents consider among the worst suited.

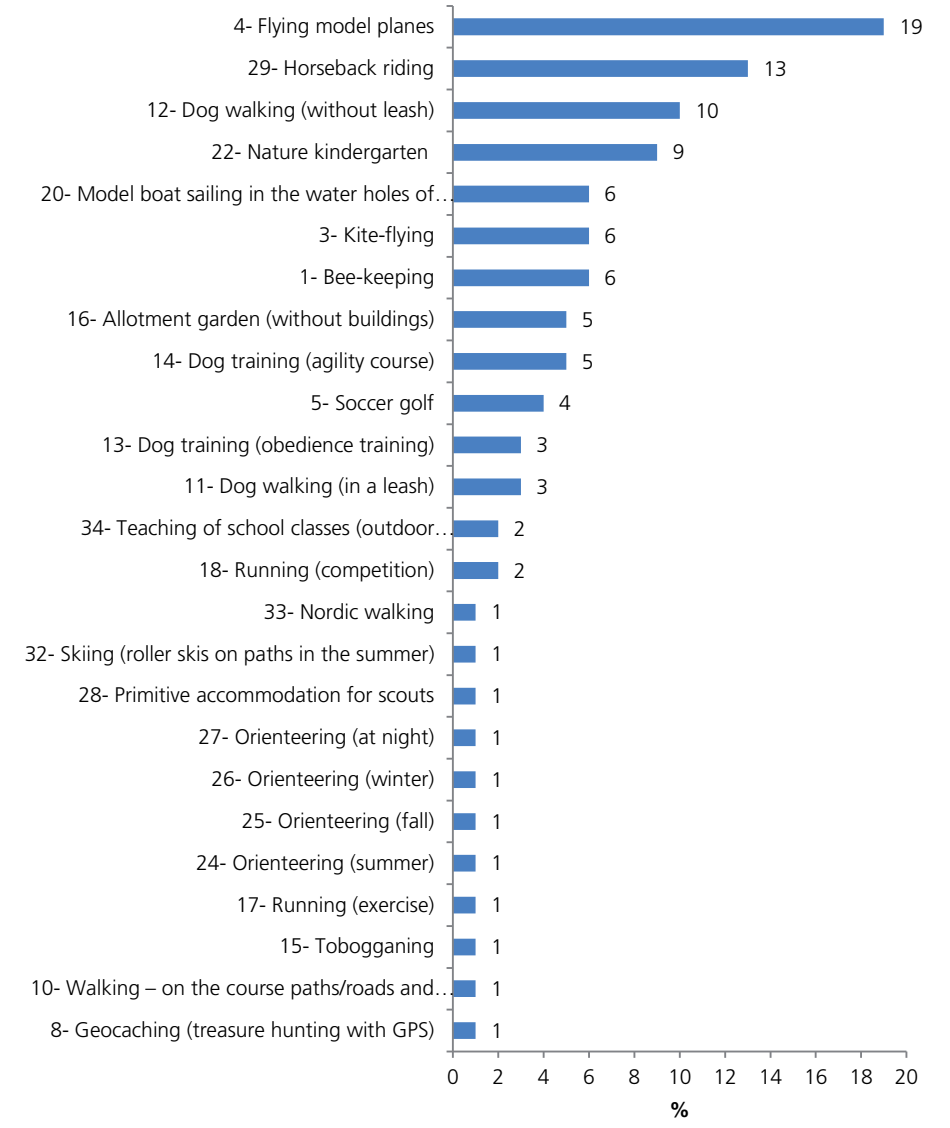


Figure H4: Distribution of responses to the question: "Which 3 of these 10 do you find worst suited to fit alongside the golf game)."

Figure H4 shows the distribution of answers, when respondents were asked to choose the three worst of the 10 worst suited activities. In this case, flying model planes is the activity that most respondents (19%) find worst suited to fit alongside the golf game, followed by horseback riding, and dog walking (without leash).

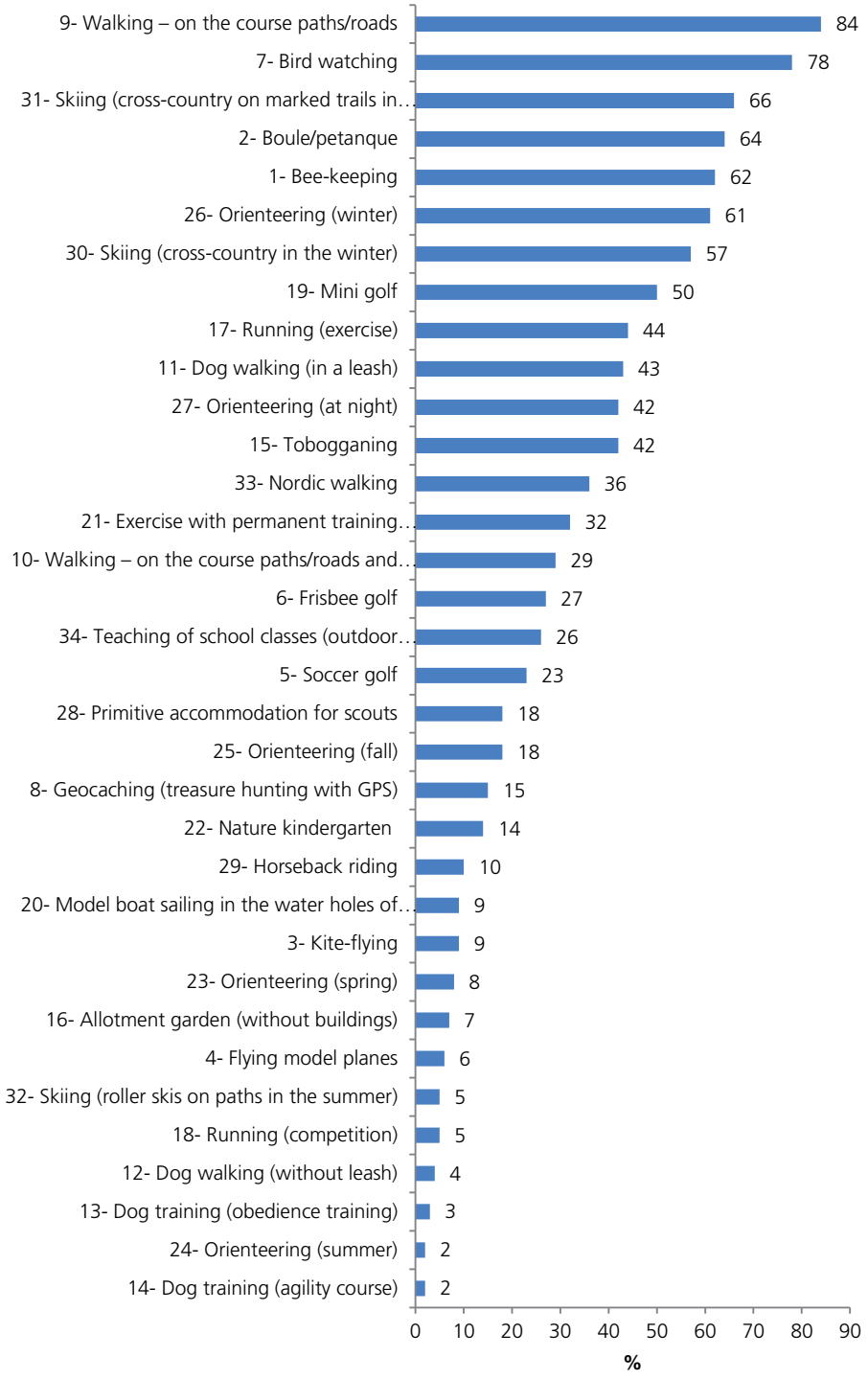


Figure H5: Distribution of responses to the question: "We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game."

Respondents were also asked to choose the 10 activities best suited to fit alongside the golf game. Figure H5 shows that walking on course paths/roads and bird watching are the two activities, most respondents believe to be best suited. Orienteering in the summer and dog training are among the activities that fewest respondents believe to be best suited – which is in line with the responses for the worst suited activities (Figure H13).

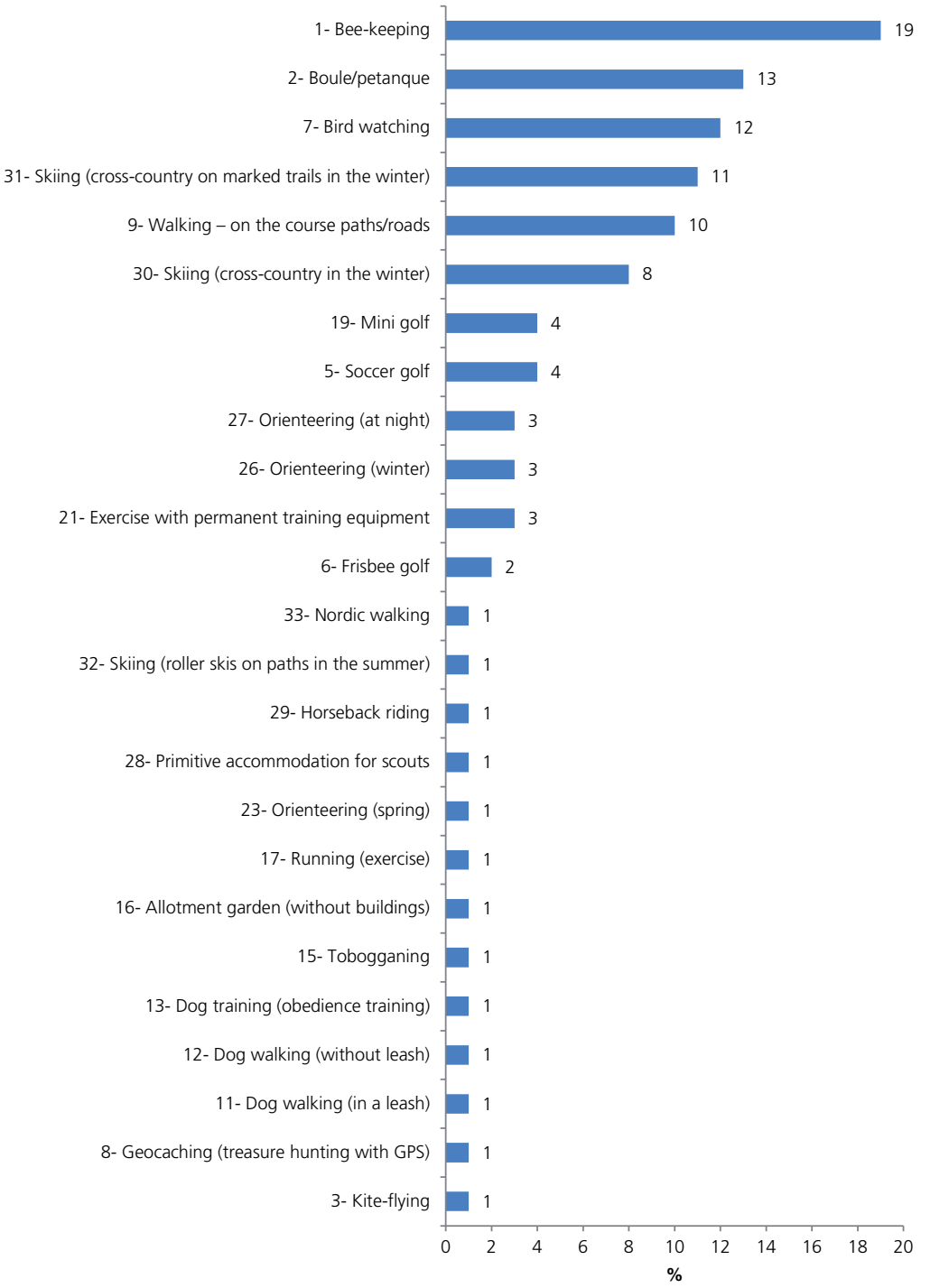


Figure H6: Distribution of responses to the question: "Which 3 of these 10 do you find best suited to fit alongside the golf game?"

When asked to choose the 3 best activities out of the 10 best, bee-keeping is the activity, which most respondents (19%) find best suited (Figure H6).

Table H4: Distribution of responses to the question: "Has meeting other guests within the previous year (2013) had any influence on your pleasure of playing golf at Hornbæk Golf Club's course?"

%	Have NOT met this type of guest	Reduced my pleasure a lot	Reduced my pleasure a little	Made no difference	Increased my pleasure a little	Increased my pleasure a lot
1. Bird watchers	(76)	3	2	12	4	3
2. Dog walkers	(30)	21	18	28	2	1
3. Nordic walkers	(79)	4	5	10	1	1
4. Joggers	(69)	5	6	17	2	1
5. Other walking guests	(25)	9	16	46	3	1
6. Mountain bike riders	(84)	10	3	1	1	1
7. Other cyclists	(79)	8	6	6	0	1
8. Horseback riders	(52)	15	15	16	1	1
9. Skiers	(83)	4	2	8	2	1
10. Others	(77)	4	2	16	1	0

Meeting other guests on the golf course does not generally seem to reduce the majority of the respondents' pleasure of playing golf (Table H4). The guests that have reduced most respondents' pleasure are clearly dog walkers and horseback riders, as dog walkers have reduced 18% of respondents' pleasure a little, and 21% a lot.

Table H5: Distribution of responses to the question: "Would your pleasure be reduced to the same degree if …" (This question was only forwarded to respondents that had a reduced pleasure of playing golf, cf. Table H4).

%	No – it would help a lot	No – it would help to some degree	Neither/nor – would not make a difference	Yes – it would not help	Don't know
… dog walkers only walked on specifically marked *paths*?	25	28	29	17	1
… dog walkers only stay in a separately marked ***area***?	23	26	28	22	1
… Nordic walkers only walked on specifically marked paths?	13	25	25	37	0
… joggers only ran on specifically marked paths?	26	26	21	27	0
… mountain bike riders only cycled on specifically marked ***paths***?	30	13	13	39	5
… mountain bike riders only cycled in a specifically marked ***area***?	22	13	17	43	5
… cyclists only cycled on specifically marked paths?	17	25	21	33	4
… horseback riders only rode on specifically marked paths?	17	32	22	25	4
… skiers only skied on specifically marked routes?	9	18	18	55	0

Mountain bike riders and skiers are the types of guest that fewest respondents have met, and most of the respondents who have met these guests said that it made no difference for their pleasure of playing golf – figures that are important to have in mind, when evaluating the viewpoints of the responding golf players.

The respondents, who had experienced a reduced pleasure of playing golf due to other guests, were asked, if their pleasure would be reduced to the same degree, if certain restrictions were put on the other guests' behaviour (Table H5). The general result shows that if dog walkers and joggers stayed on specifically marked paths or areas, they would not reduce the respondents' pleasure as much as previously. Bike riders, on the other hand, would still cause reduced pleasure for the majority of the respondents, even if they were to cycle in specific areas or paths.

Table H6: Distribution of responses to the question: "What do you, as a golf player in Hornbæk Golf Club, think of the idea that an orienteering race is arranged on the golf course, when there are no golf players …"

%	Very bad idea	Bad idea	Neither /nor	Good idea	Very good idea	Don't know
… at night?	9	11	17	37	25	1
… during the winter months?	5	10	16	39	29	1

About 2 out of 3 respondents think it would be a good or very good idea, if an orienteering race was arranged on the golf course, when there are no players at night or during the winter months (Table H6).

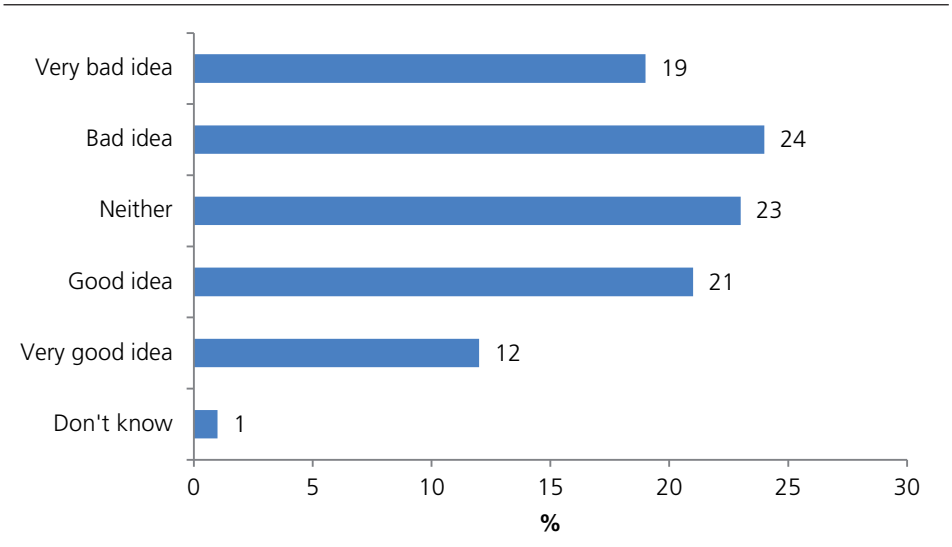


Figure H7: Distribution of responses to the question: "What do you, as a golf player in Hornbæk Golf Club, think of the idea that guests occasionally walk by on the course while following a "Find your way"-route? (The guests have to follow a compulsory path where the risk of being hit is minimised)."

Figure H7 shows that a majority of the respondents think it is a bad idea that guests occasionally walk by on the course (24%), while following a "Find your

way"-route, and 19% think it is a very bad idea. 33% think it is a good or very good idea – revealing that there are a 10%-point overweight of negative respondents.

Table H7: Distribution of responses to the question: "What do you, as a golf player in Hornbæk Golf Club, think of the idea of having..."

%	Very bad idea	Bad idea	Neither /nor	Good idea	Very good idea	Don't know
... ***hole/game information*** via the mobile on a golf round?	21	16	14	26	20	3
... ***information about nature etc.*** via the mobile on a golf round?	22	19	21	19	16	3

Table H7 shows that a slight majority of respondents think it is a good or very good idea to have hole/game information via the mobile on a golf round. Having information about nature etc. via the mobile on a golf round is a bad or very bad idea, according to a slight the majority of respondents (41%), whereas 35% believe it to be a good or very good idea.

Table H8: Distribution of responses to the question: "Will you use the possibility of having…"

%	Yes	No	Don't know
... ***hole/game information*** via the mobile on a golf round?	36	51	13
... ***information about nature etc.*** via the mobile on a golf round?	25	60	15

More than half of the respondents would not use the possibility of having information about nature etc. or the possibility of having hole/fame information via the mobile on a golf round (Table H8).

Table H9: Distribution of responses to the question: "Do you think the possibility of having …"

%	Yes	No	Don't know
… ***hole/game information*** via the mobile on a golf round will attract green fee players to the course?	27	48	25
… ***information about nature etc.*** via the mobile on a golf round will attract green fee players to the course?	18	55	27

Table H9 reveals that relatively few (27%) think that the possibility of having hole/game information via the mobile on a golf round would attract green fee players to the course, and even fewer think that the possibility of information about nature etc. via the mobile on a golf round would attract green fee players.

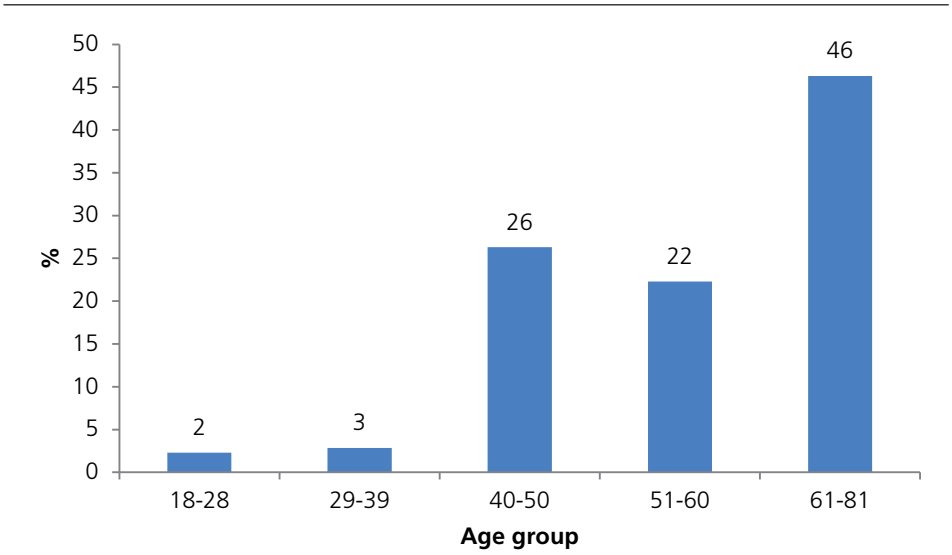


Figure H8: Distribution of responses to the question: "How old are you?"

95% of respondents are older than 40 years, with almost half of respondents in the age group 61-81 years (Figure H8).

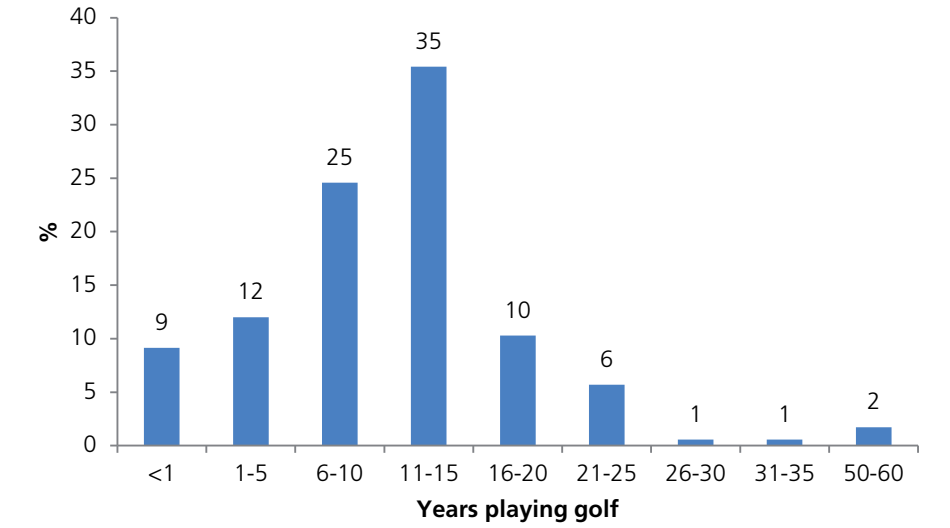


Figure H9: Distribution of responses to the question: "How many years have you been playing golf?"

Figure H9 shows that about 1 out of 3 respondents have been playing golf for 11-15 years. Only 10% have been playing for longer than 20 years.

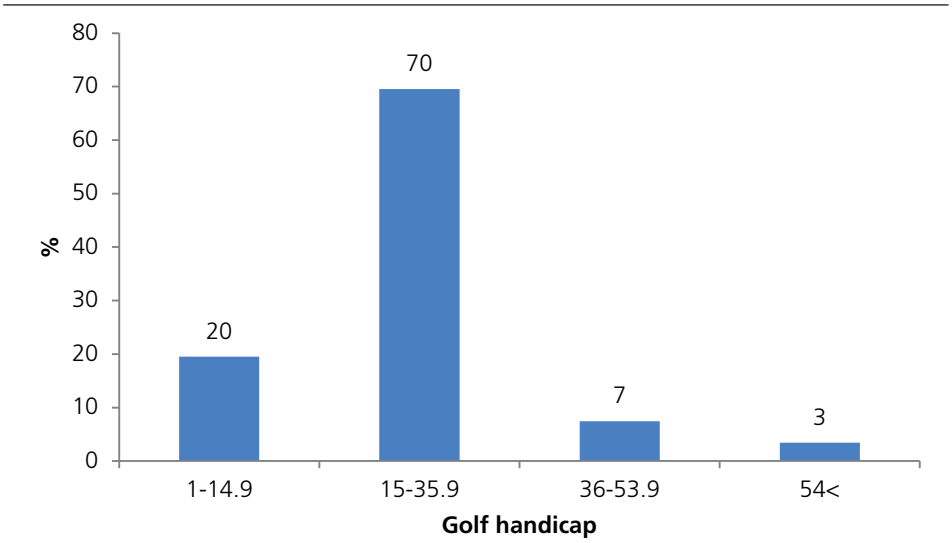


Figure H10: Distribution of responses to the question: "What is your golf handicap?"

The majority of the respondents have a handicap between 15 and 35.6, while 1 out of 5 have a handicap better than 15 (Figure H10).

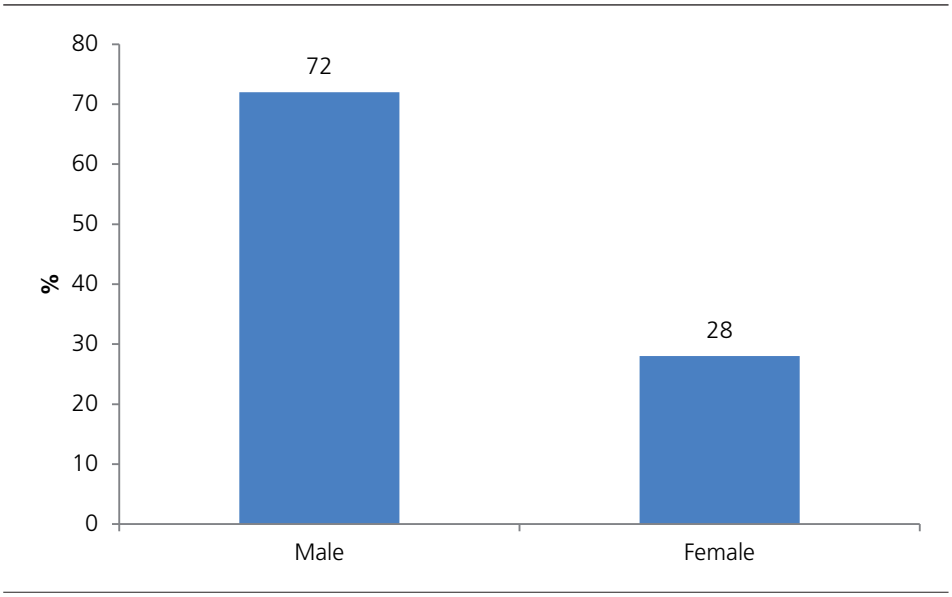


Figure H11: Distribution of responses to the question: "what is your gender?"

Figure H11 shows that less than 3 out of 10 respondents are women.

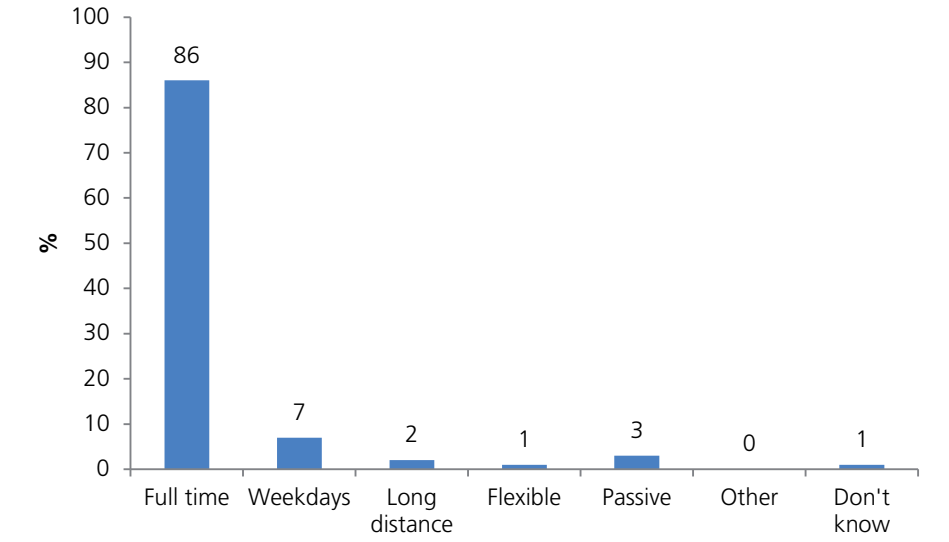


Figure H12: Distribution of responses to the question: "What kind of membership do you have in Hornbæk Golf Club?"

Full time membership is clearly the most common membership among respondents (Figure F12). Only 14% of respondents have other kinds of memberships.

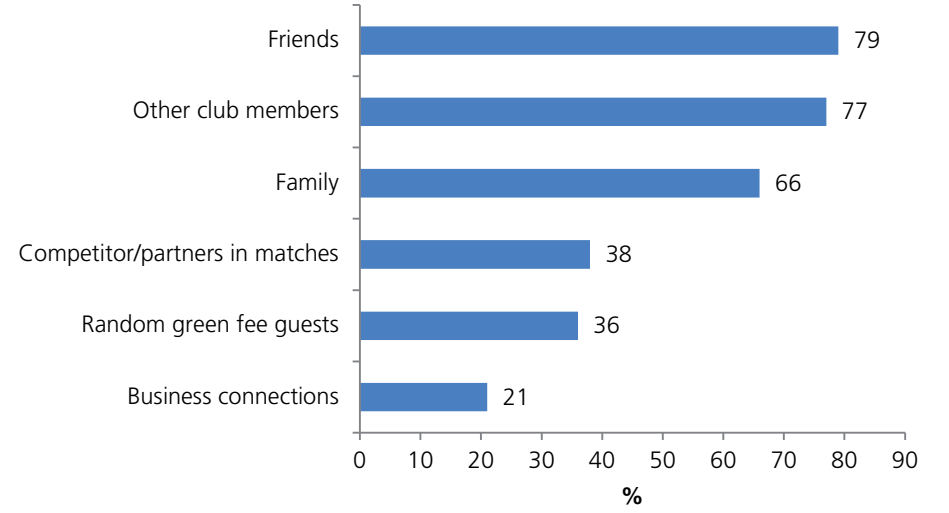


Figure H13: Distribution of responses to the question: "Who have you played golf with over the previous year (2013)?"

Figure H13 shows that respondents on average play with three different groups of players over the year (sum of percentages in Figure H13 is just over 300). Most respondents have played with friends or other club members. Only 21% have played with business connections.

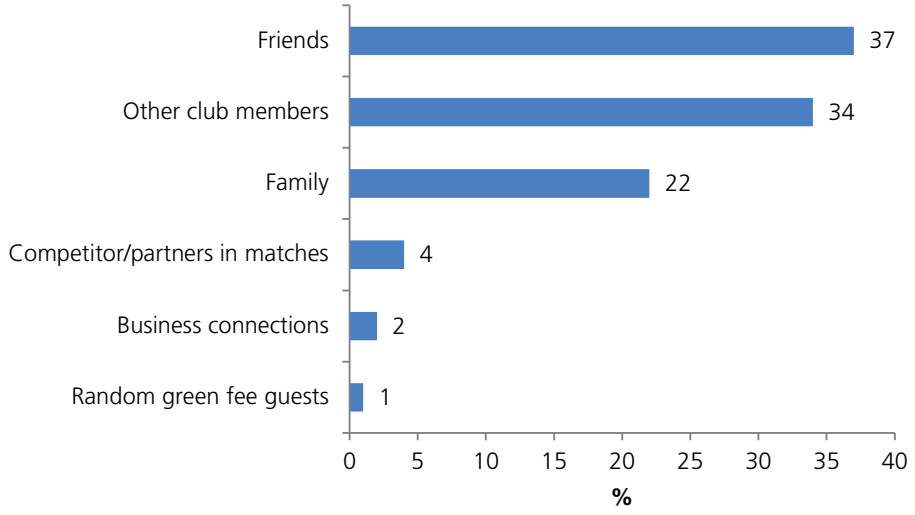


Figure H14: Distribution of responses to the question: "Who did you play with most often?"

When respondents were asked, who they play most often with, results show most played with friends, followed by club members (Figure H14). Only 1 and 2% played most often with random green fee guests and business connections, respectively.

Table H10: Distribution of responses to the question: "How many times, approximately, have you played during the previous year (2013)?"

%	Several times per week	Once a week	2-3 times per month	Once a month	Less than once a month
Spring:	45	23	17	4	11
Summer:	64	13	13	4	6
Fall:	39	32	15	8	6
Winter:	8	7	10	14	61

More than 60% of respondents play at least once a week in the spring, summer, and fall, whereas 75% play once a month or less in the winter (Table H10).

Table H11: Distribution of responses to the question: "Approximately, how many rounds have you played in 2013?"

%	0	1-9	10-19	20-29	30-39	40-49	50 and more
Home course:	4	11	16	19	16	16	18
On other courses (Denmark and abroad):	11	44	24	13	3	1	4

Table H11 shows that respondents – quite naturally – in general play more rounds on their home course, than they do on other courses.

Table H12: Distribution of responses to the question: "How important are the following six causes for you playing golf?"

%	Not important	Somewhat important	Important	Very important	Don't know
1- For the sake of competition	29	32	23	13	3
2- For the sake of exercise	6	13	40	40	1
3- Social interaction with family/friends	2	7	30	58	3
4- Social interaction with other club members	8	25	36	29	2
5- To "network" (workwise)	61	18	12	3	6
6- To enjoy nature	3	18	44	32	3

Among the most important causes for playing golf are social interaction with family and friends and exercise (Table H12). Neither to "network" nor for the sake of competition is important to most respondents.

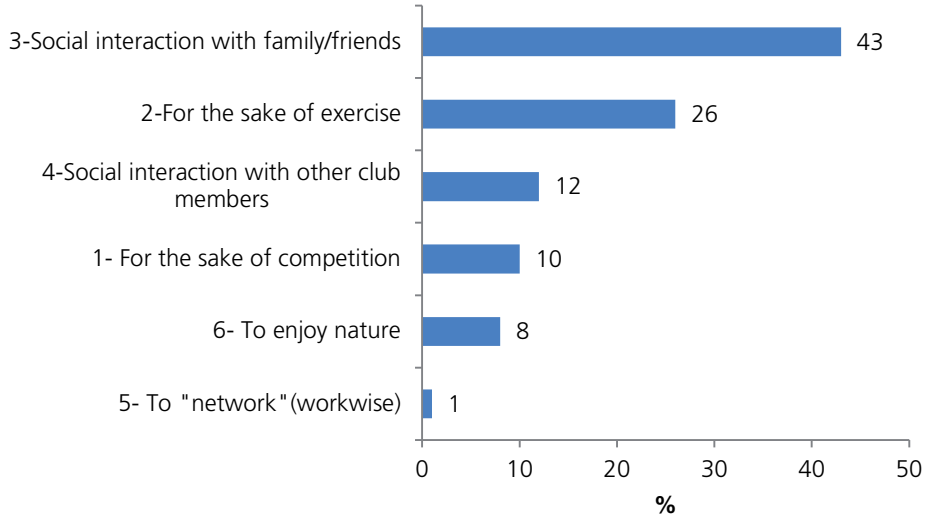


Figure H15: Distribution of responses to the question: "Which of these six causes is most important for you?"

When the respondents were asked to choose the most important cause for playing golf it became very clear, that social interaction with family and friends is the most important cause (43%) (Figure H15). Exercise is the most important cause for 26%, whereas only 1% of respondents have chosen networking as the most important cause for playing golf.

Viksjö golf course Stockholm

Figure 1. The course lay out of Viksjö golf course

Viksjö golf course is located in Viksjö that is a part of Järfälla municipality approximately 20 km from Stockholm city. Viksjø had in 2005 approximately 15.000 inhabitants and detached houses dominates the area.

The course is located next to Görväln nature reserve which is a municipal conservation area. It is a 7 km long green area that follows the shores of Lake Mälaran. The objective of the nature reserve is to preserve the area for recreation and nature conservation. Due to its location the golf course is important to nature and wild life in the area and additionally it is has an important recreational function for the citizens in the area. Before the exploration began in 1963 when the area was bought by the private company SIAB it had through generations functioned as a traditional agricultural area. Hence it has a very long time depth. There are traces of settlements from the stone age 4200-1800 bc. and other remains from later periods including the Viking age. From more recent periods there are detailed information that describes the former farms and the related land use. The area consists of rocky hills with forest and more flat areas of arable land which is typical for this part of Sweden.

The golf course was established in 1968 as 9 hole course by the company SIAB. Later the course was enlarged to 18 holes when the founders of the golf club bought the farm Fjällen which has a history that goes back to 1653. In 1972 more of the surrounding area was bought. The golf course has 1600 members and is visited by approximately 100.000 visitors each year and it is considered as a very well managed golf course with high environmental profile.

The course geography and lay out

Today Viksjö golf course both includes a 9 hole course and a 18 hole course in international standard. The golf course is located next to the nature reserve Görväln which is a side branch to Järvakilen that is one of the largest green wedges in the Stockholm area. The golf course itself functions as a green wedge surrounded by the detached houses that dominates Viksjö. The golf course has a clubhouse that also includes a well visited restaurant that is open for both members and visitors. There are several trails in relation to the golf course that connects it with the green areas in which it is located. One of these is the hiking trail Upplandsleden.

Wishes to a future development

partly because it is located in a municipality that includes both green recreational areas and housing. In other words the course is closely connected with the local society. The golf club is very well organized and the management of the course includes 13 different groups/committees that are responsible for different activities. One of these is the Environmental group that focuses on different environmental and recreational aspects including biodiversity aspects and cultural heritage. Each of the groups have developed an action plan and the plan of the Environment group include activities that seek to enhance the environmental status of the golf course as well as the recreational services to the surrounding settlement. The aim is that environmental awareness is imbedded in every important decision at the golf course. This group has engaged in different activities in which they are aiming at increasing the biodiversity, use local products and reduce the outlet of nitrogen and phosphor.

Several of the golf holes are located next to the detached houses in the area, and due to the "allamansretten" (the right to roam) the trails around the course are used for recreational purposes for the citizens in the area. The course is owned by the golf club (Viksjö golfklubb (GK)). The activity of the Environmental group indicates that Viksjö golf club actively strives towards a sustainable land use Hence the objective of the mapping of recreational values at Viksjö golf course is to focus on recreational potential that may not be recognized or identify existing potential that could be further developed.

Mapping of experience values

The mapping of experience values conducted at Viksjö golf course was based on a use of an aerial image, field inspections in the area and use the of topographic maps. The evaluation of the ecological potential is based on the report "Ekologisk hållbar skötsel av biotoper på golfbanor" (Berry 2006). A cultural historic description was used to inform about the time depth and the historical development in the area. Valuable information about the green wedges of Stockholm was used to include a broader regional aspect in the analysis.

Figure 2. The experience map for Viksjö golf course . Map made by Patrik Karlsson Nyed.

Pristine and untouched areas

An important entity of this experience class is the existence of very old trees bogs and nature areas that are not influenced by human activity but also the absence of noise and disturbance from technical objects for example larger roads or houses. There are smaller areas with older trees in the south-western part near hole 14 and 15 but due to the lay out of the golf course and the location in a relatively densely populated area there is noise and technical disturbance to such a degree that these areas can be not classified as pristine an untouched areas. However this part is connected to nearby nature reserve in which this experience may be found. The northern part of the golf course where the 9 hole course is located has its boundary along the larger road Viksjöleden on which there is relatively intense traffic. Because the golf course is located close to the road there is a relatively high traffic noise in this area. The noise has influence on this part of the golf course and despite the relative large age of these trees in this area the potential pristine experience is negatively influenced by the traffic on the road.

Feeling of forest

Forest constitutes a very important class at this golf course. Access to forest is important to citizens and on Viksjö golf course there is a very good opportunity to experience different types of forest. Berry (2006) have classified the forest at the golf course and the surrounding area. He identified five different forest types that each is divided into four classes depending on density and age.

In relation to the experience classification the mapping process is simpler and includes only four major classes. These classes based on the density and management pressure are identified and mapped at the Viksjö golf course. Due to the location in a relatively densely populated area the golf course at several sites uses the forest as a buffer between the houses and the golf course. The course lay out also creates the possibility for the gold players and visitors to achieve a forest experience and at the same time providing good access for visitors in the area. Due to the interaction to the nature reserve you easily get the experience of being in a more open part of a large forest.

Figure 3. Several trails lead through the forest that surrounds Viksjö golf course. Photo: Ole Hjorth Caspersen.

Figure 4. Park like experience are found on the more open areas. Photo: Ole Hjorth Caspersen.

Figure 5. Shallow soil on the base rock form a common area at several places at the course. Photo: Ole Hjorth Caspersen.

Figure 6. A common area close to park character. Photo: Ole Hjorth Caspersen.

Figure 7. The relatively large difference in terrain creates panoramic view at several locations. Photo: Ole Hjorth Caspersen.

Panoramic views, water and scenery.
The course is located in an area that is divided between low and relatively flat grassland and smaller rocky hills characterized by poor soil covered by forest. The general experience is an open landscape with wooden hills. This land cover has a striking resemblance with the former farm landscape that dominated the area. The undulating terrain and the absence of housing enables panoramic views from the trail that runs in the periphery of the course especially in the more open parts but also partly from places where the forest opens towards the golf course. However the mapping of this experience value indicates that these differences in terrain and vegetation could be utilized further for creating even better panoramic views.

Biodiversity and land form
An inventory of the biodiversity at Viksjö golf course was conducted by Berry in 2006 and it comprises 158 species. At a smaller scale 14 different biotopes including lakes and wetlands were registered and mapped and proposals were giving to future management for each biotope type. The inventory produced by Berry was partly based on infrared aerial photos partly by a field survey and it gives a very detailed image of the biodiversity at the golf course. In the process of mapping the experiences in relation to the biodiversity the results of the 2006 inventory was adapted due to the high quality of this investigation. Some significant registrations were the relatively high number dry oak forest on the hills.

The Environmental group is active at the golf course and has developed an action plan that comprises several topics. Of these some are related specifically to biodiversity aspects at the golf course. For example the group has established a

Figure 8.Old and dead trees are important habitats and increase the biodiversity. Photo: Ole Hjorth Caspersen.

Figure 9. Old historical roads lead through the course. Photo: Ole Hjorth Caspersen.

feeding place for the birds in the area. This is situated close to one of the major trails and information posters are located at the feeding place. Another activity is a small garden for herbs that they deliver to the club restaurant.

Cultural history

Despite the contemporary use as a golf course the landscape gives the visitor an experience of a landscape that has a very long time depth and that has traces of inhabitants that goes back to 4200-2800 bc. In the forest south-east of the course a number of graves from 500-1300 ac has been found (Hägblom et al 2004). Since 2000 bc the landscape has been elevated 20 meters and the golf course is located on the lower parts of this area. The stream Barkarbyån runs through the area and close to the green of hole 5 a large and well ornamented Rune stone is located. This stone have probably been visible by people traveling on the stream which at the Viking age probably was much larger than today. It is said that this stone is one of the most beautiful rune stones in the municipality. However it is not the only one. Along the old road Häradsvägen that runs through the golf course 9 rune stones has been found. The road that still exists today was important in the Viking age in order get to Lövsta from where it was possible to cross Lake Mälaren in order to get to some of the small islands in the lake.

In the 1600 century the area was used for farming and there are detailed descriptions about the two farms Fjällen and Skylsta that today constitutes a part of the golf course and the ownership of the two farms. In the area belonging to the golf club there are several historical remains for example old roads. Today those are more or less covered by forest but still constitutes an important historical value as well as they carry a potential for further development of the historical experience.

Figure 10. The old rune stone located at the center of the golf course. Photo: Ole Hjorth Caspersen.

Activity and challenge

The location of the golf course in a green area connected to one of the green wedges of Stockholm does make it important to consider the golf course in a broader regional perspective. But the golf course also plays an important role for recreation leisure in the local society. As already mentioned it constitutes a green area nearly totally surrounded by detached houses. Hence the many different golf club committees additionally engage in activities not only oriented towards the members but they also address none golfers for example are the course used for cross country skiing in the winter.

The golf course has a lay out that makes it possible for none golfers to visit the course and follow the trails at the course. However it seems as the trail that follows the periphery of the course is most often used by none golfers. Walking, running and cycling are frequent activities. There are a relatively large number of access points to the golf course trail system from trails and paths in the local area. Longer hikes along Upplandsleden follow the trails along the golf course.

Service and gathering

The golf course includes a number of service facilities. Some of the most important are related to the club house that includes a restaurant open also for none members and guests. Rest rooms and a nearby parking lot are also available. Benches located at different places on the golf course make it possible to enjoy the forest and at some places also the more open view to the course.

Viksjö golf has a very well developed homepage that beside information regarding the club and the course also includes information of more detailed character. This means that it quite easy to pick up information about the course and the club rules and facilities. The home pages includes an animated version of the 18 hole course that enable the user to make a “fly over” of each hole.

Figure 11. The club house includes a restaurant that is open for none members also. Photo: Ole Hjorth Caspersen.

Experience values in the area

The mapping of experience values at the Viksjö golf course indicate that the course is a very well organized club that offers the players as well as the visitors several experiences within the frame that have been defined in connection to this project. The golf course is located close to the nature reserve Görväln next to Mälaran and besides its local functions as a golf course and provider of recreational possibilities for the local society it also has an important ecological function in a larger regional perspective. Hence it could be stated that the golf course already is multifunctional. Nonetheless do the analysis and mapping procedure of experience values indicate that in relation to some of the experience classes there exists a potential that either is not utilized or that could be developed even further.

The location of the golf course in an undulating terrain that includes several different biotopes provides the visitors of the area with a very good possibility for an excellent nature experience. Despite the safety issues that relate to the sport when visitors roam in the area it is possible to have a safe walk in the periphery of this golf course.

The mapping of experiences within cultural history indicates that this experience is present many places in the landscape both on the golf course and in the surrounding area. The time depth in this area is long and goes back to prehistoric time including layers from more recent periods. One example is the rune stone Skylstahällen, which is located at a central part of the golf course. One of the trails passes it nearby nonetheless is there very little information about this significant historical element. This stone is just one of several in the area. They may be utilized specifically for the historical branding of the area that has a significant time depth. Likewise could the former and still existing historical roads in the area be included in the branding of the area. The time depth and the historical experience one can achieve by roaming in the area would be increased if the information was improved. To some extent this would need a specific management plan for specific parts of the area in order to increase the experience.

Suggestions for future multifunctional development

Although there is multifunctional aspects related to the management of Viksjö golf course they are relatively well hidden for the visitors in the area. The restaurant is mentioned on the home page but there are no information about the trails and paths in the area. This could be developed further by information on the home page and through signs in the area. One of several characteristics of this golf course are the environmental aspects. The golf course is located close to a green wedge that is in one of largest in the Stockholm area and it has a boundary to the nearby nature reserve. This location and the environmental oriented management mean that the course constitutes an important element in the green structure in the region and it has a regional importance as an ecological stepping stone for the wildlife in the area. This is why the cooperation between the golf course and the managers of Görväln (Järfälla municipal park and nature dept.) could benefit from being developed further. This would ena-

ble that information about the function and the facilities at the golf course could be included in the nature reserves leaflets and homepage.

Presently there seem to be no link from the golf course to the nature reserve and no coordination with respect to the facilities in the area. Information about the golf course in relation to a more regional perspective considered from a recreational and an environmental perspective could be elaborated further and the golf course could to a greater extend be acknowledged for their recreational and environmental contributions to the local area.

The narratives that relate to this landscape has a character and an extent that could form the backbone of specific historical dissemination as for example guided tours that ends at the restaurant where a historical cuisine could be offered to the participants.

Actions proposed at Viksjö golf course:

- Develop the cooperation between regional environmental authorities and Viksjøgolf club. This could include development of posters and maps that illustrate recreational experiences in the region.
- Information signs relates to environmental activities of the management of the golf course.
- Development of the time depth and historical perspective, for example as guided thematic tours that include visit at the restaurant that could offer a historical menu.
- Improve the information and visibility of Skylstahällen.
- Improve information on some of the older roads in the area. In cooperation with the local authorities it could be investigated whether a new trail could be developed that has a specific historical perspective.
- Better branding of the restaurant and focus on none golfers in the area
- Improve information of the recreational experiences on the homepage.

References

Alkestrand et al. 1994.
Klubbladet. Jubileumsbladet. Viksjö golfklub. Trykeri Ett, Stockholm 1994.

Berry Ylva. 2008.
Naturvård på Viksjö GK. Katerina Tryck AB 2009.

Görväln. Järfälla Kommun , Park- och naturafdelingen.
Kallelse och möteshandlinger til höstmötet 2012-11-22. Viksjö golfklubb

Miljöplan 2011-2012 for Viksjö golfklubb. 2011.
Miljögruppen. Järfälla.

Golf players' viewpoints

Viksjö Golfklubb, Sweden

To get the viewpoints of the golf players at Viksjö Golfklubb regarding multifunctional initiatives, a web based questionnaire was developed. The questionnaire was identical for all five golf courses/clubs included in the project.

Contact to the respondents was made through the homepage of the club/course, and in newsletters. During March 2014 – July 2014, a total of 189 persons have opened the survey, and 146 have for sure read one or more of the questions. 94 respondents completed the questionnaire by answering all questions. The following analysis is based on these *94 respondents*.

Summary of selected results – for the full, balanced results, please see the specific tables and figures following this brief overview:

- There are generally more positive than negative respondents towards other activities on the golf course than golfing itself – especially if it takes place in the winter time, and not in the summer.
- A majority of the respondents find it important that the golf course is managed so it can contribute as habitat for the natural flora and fauna.
- Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 68% are positive/very positive, and 8% are negative/very negative.
- Out of 34 different activities one could imagine taking place at a golf course, the ones that most respondents (50% or more) find *best* suited to fit alongside the golf game are: skiing (cross-country in the winter), skiing (cross-country on marked trails in the winter), bird watching, boule/petanque, walking on the course paths/roads, and mini golf – and 50% or more found the following activities *worst* suited: dog walking (without a leash), flying model planes, horseback riding, model boat sailing in the water holes of the golf course, kite-flying, nature kindergarten, and primitive accommodation for scouts.
- Among the present guests at the golf course, dog walkers are the category that most respondents find reducing the pleasure of playing golf.
- The majority of the respondents partly or strongly agree in that new initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport – and thereby get more members.
- A short general characterization of the respondents: 67% are older than 50 years and 5% younger than 40 years; 74% are males; 58% have a handicap between 15 and 35.9; 6% have played golf 5 years or less and 66% have played more than 15 years; social interaction with family and friends are the most important cause for playing golf for 57%, exercise is most important for 29%, enjoying nature is most important for 5%, and finally, the competition, and social interaction with other club members is both most important for 4%.

Table V1: Distribution of responses to the question: "Please state how much you disagree or agree with each of the following 9 statements. When you answer please think of the golf course you are most attached to – your home course."

%	Strongly disagree	Partly disagree	Neither /nor	Partly agree	Strongly agree	Don't know
1. If efforts were made to have more visitors and activities in the *club house,* it would be a good way to get more people in contact with the golf sport and thereby get more members.	3	15	15	39	26	2
2. If efforts were made to have more visitors and activities in the *club restaurant*, it would be a good way to get more people in contact with the golf sport and thereby get more members.	3	8	16	36	35	2
3. In general, I think it would be positive, if the social life is increased by the club house/ restaurant being used by other people than golfers.	2	7	16	34	40	1
4. If efforts were made to have more visitors and activities on the *golf course itself,* it would be a good way to get more people in contact with the golf sport and thereby get more members.	10	14	21	33	17	5
5. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not affect *security*.	13	28	7	28	20	2
6. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not *disturb* my golf play.	17	20	6	27	27	2
7. More of my family, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	32	32	16	7	7	5
8. More of my friends, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	24	39	16	8	5	7
9. I myself would like to use the golf course for visiting nature and other activities than playing golf.	20	23	12	26	16	3

Table V1 shows the distribution of respondents' level of agreement with 9 statements about different aspects of multi-functionality in relation to golf courses. A majority of respondents partly or strongly agreed that initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport, and thereby get more members. 40% strongly agreed that it would be positive in general, if the social life is increased by the club house/restaurant being used by other people than golfers.

More than half of the respondents did not believe that more of their friends and/or family would join them on the course if it was possible to do other activities than golf.

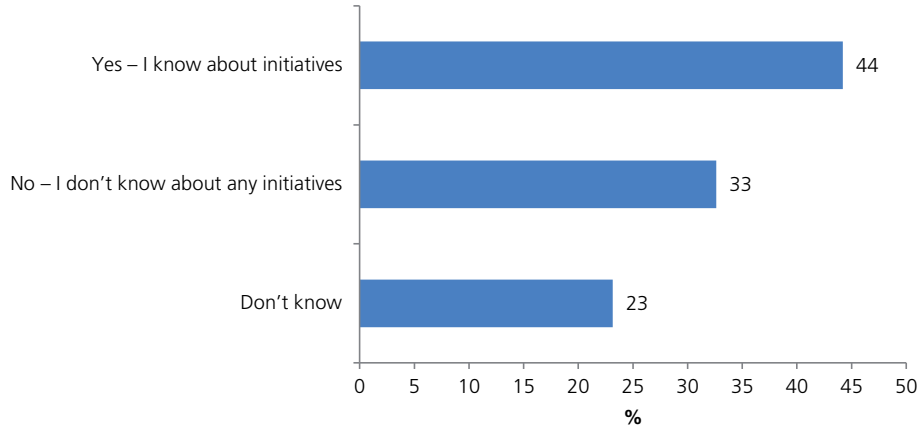


Figure V1: Distribution of responses to the question: "Do you know if any initiatives have been made on your home course that allows other people than golf players to use the course, club house and/or restaurant?"

Less than half of the respondents knew about initiatives on their home course that allowed other people than golf players to use the course, club house and/or restaurant (Figure V1).

Table V2: Distribution of responses to the question: '"What would your overall attitude be, if new initiatives towards other activities than golfing itself should become a reality on your home course?"

%	Very negative	Negative	Neither/nor	Positive	Very positive	Don't know
Other activities, only in the *summer*:	12	26	29	24	6	3
Other activities, only in the *winter*:	2	3	13	30	51	1
Other activities, *all year:*	9	20	26	33	9	4

4 out of 5 respondents have an overall positive or very positive attitude to other activities in the winter on their home course than golfing (Table V2). In the summer, however, fewer have positive attitudes, and 38 % have a negative or very negative attitude towards new initiatives.

Table V3: Distribution of responses to the question: "When talking about "multi-functional" golf courses, one often also thinks about the cultural, natural, and environmental conditions. When you answer, please think of the golf course you are most attached to – your home course."

%	Not important	Somewhat important	Important	Very important	Don't know
How important do you believe it is that …					
… an extra effort is made to improve living conditions for the natural **flora** on the golf course?	6	26	32	33	3
… an extra effort is made to improve living conditions for the natural **fauna** on the golf course?	5	22	39	31	2
… the golf course is **designed**, so it can contribute as habitat for the natural flora and fauna?	6	21	31	37	3
… the golf course is **managed**, so it can contribute as habitat for the natural flora and fauna?	2	19	34	44	1
… information is given about flora and fauna to other visitors?	22	29	21	24	3
… the golf course is managed in an environmentally friendly way?	1	17	28	53	1
… in five years, pesticides (weed, insect- and fungi control) are no longer used on the golf course?	10	15	28	38	10
… possible cultural or historic monuments are preserved on the golf course?	3	16	26	51	4
… information is given regarding possible cultural or historic monuments to other visitors?	5	22	36	31	5

Table V3 shows that a majority of respondents believe it is important or very important that golf courses are designed and managed, so they can contribute as habitat for natural flora and fauna. The initiative most respondents found not or somewhat important is giving information to other visitors about flora and fauna (51%).

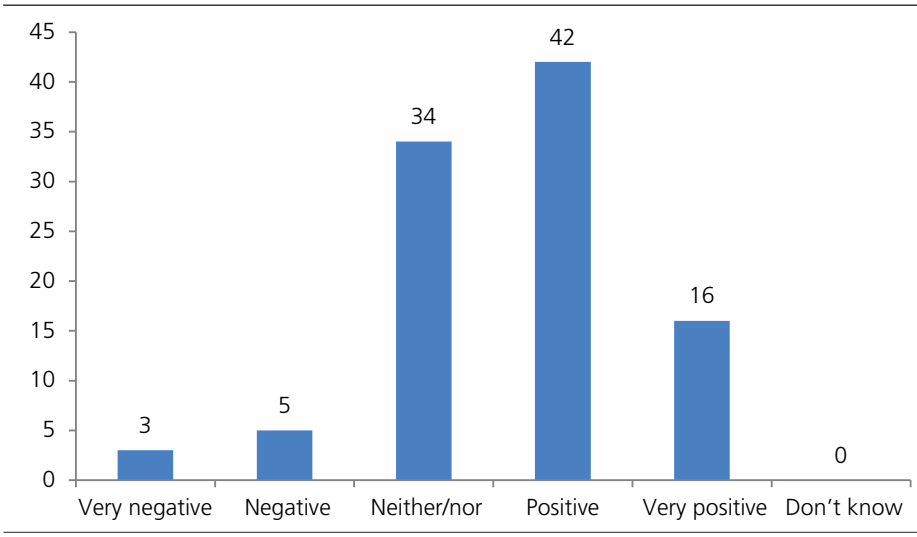


Figure V2: Distribution of responses to the question: "What will your overall attitude be, if new initiatives towards more focus on cultural, natural and environmental conditions would become a reality at your home course?"

According to Figure V2, one out of three respondents answered neither/nor, when asked about their attitude towards new initiatives with focus on cultural, natural, and environmental conditions. Only 8% have a negative or very negative attitude towards this, and the remaining 58% are positive or very positive towards the idea.

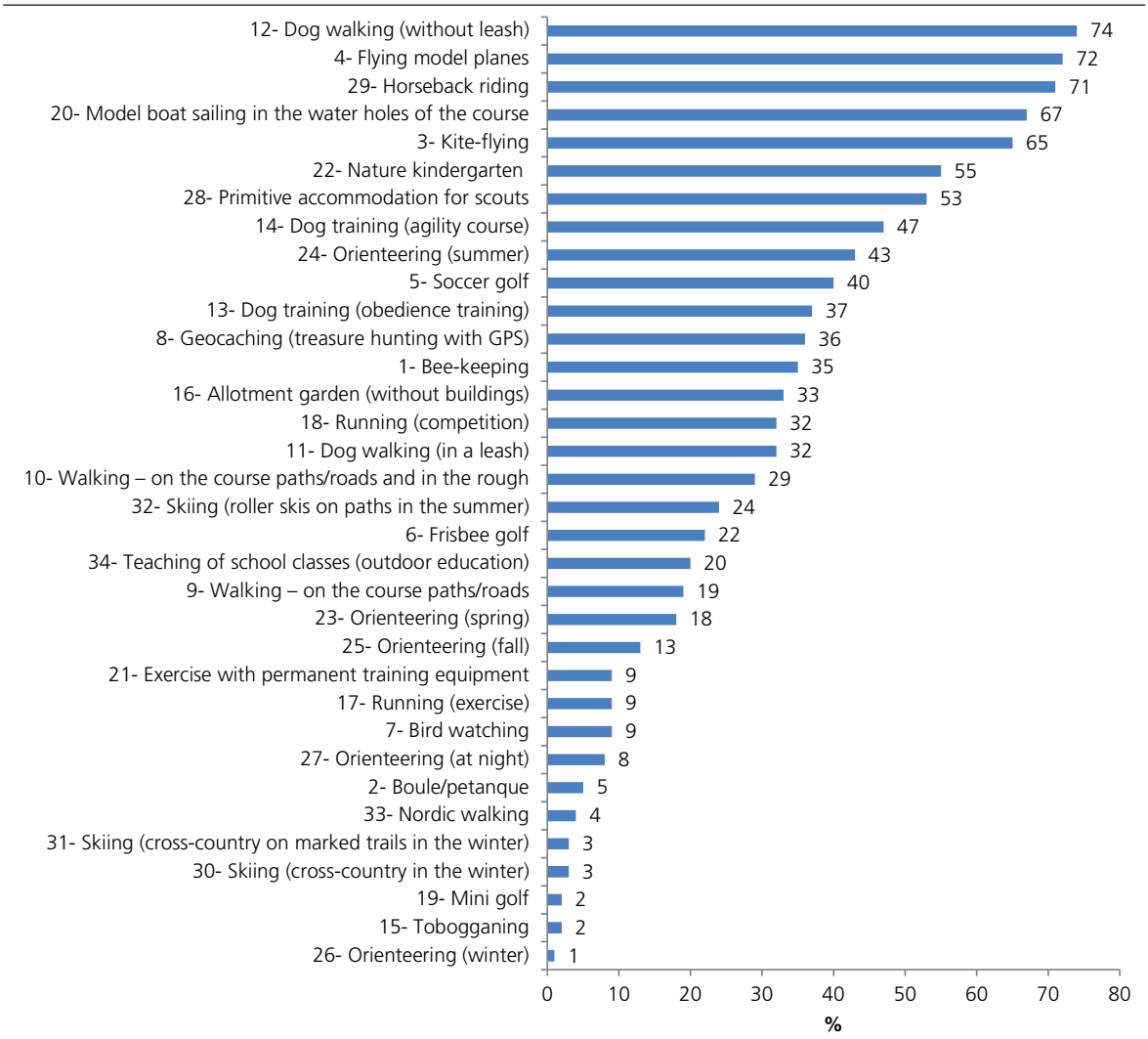


Figure V3: Distribution of responses to the question: "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing."

Figure V3 shows which activities most respondents believe to be worst suited to fit alongside the golf game. Dog walking (without leash) (74%), flyting model planes (72%), and horseback riding (71%) are the activities, most respondents believe to be worst suited. Overall, winter activities, such as orienteering in the winter, tobogganing, and skiing are among the activities least respondents believed to be worst suited.

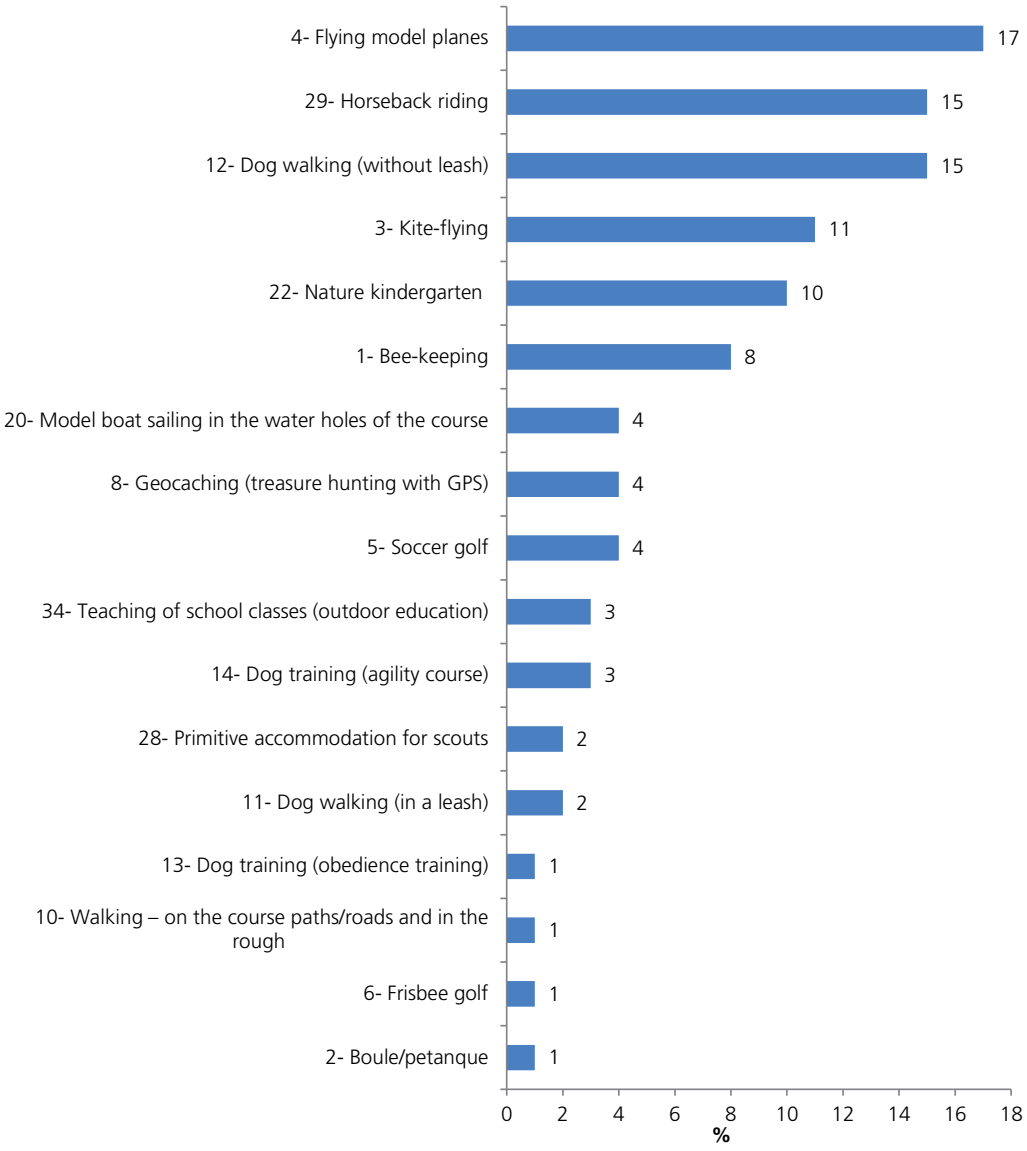


Figure V4: Distribution of responses to the question: "Which 3 of these 10 do you find worst suited to fit alongside the golf game?"

Figure V4 shows the distribution of answers, when respondents were asked to choose the three worst of the 10 worst suited activities. In this case, flying model planes, horseback riding and dog walking without leash are the activities that most respondents find worst suited to fit alongside the golf game, followed by kite-flying and nature kindergarten.

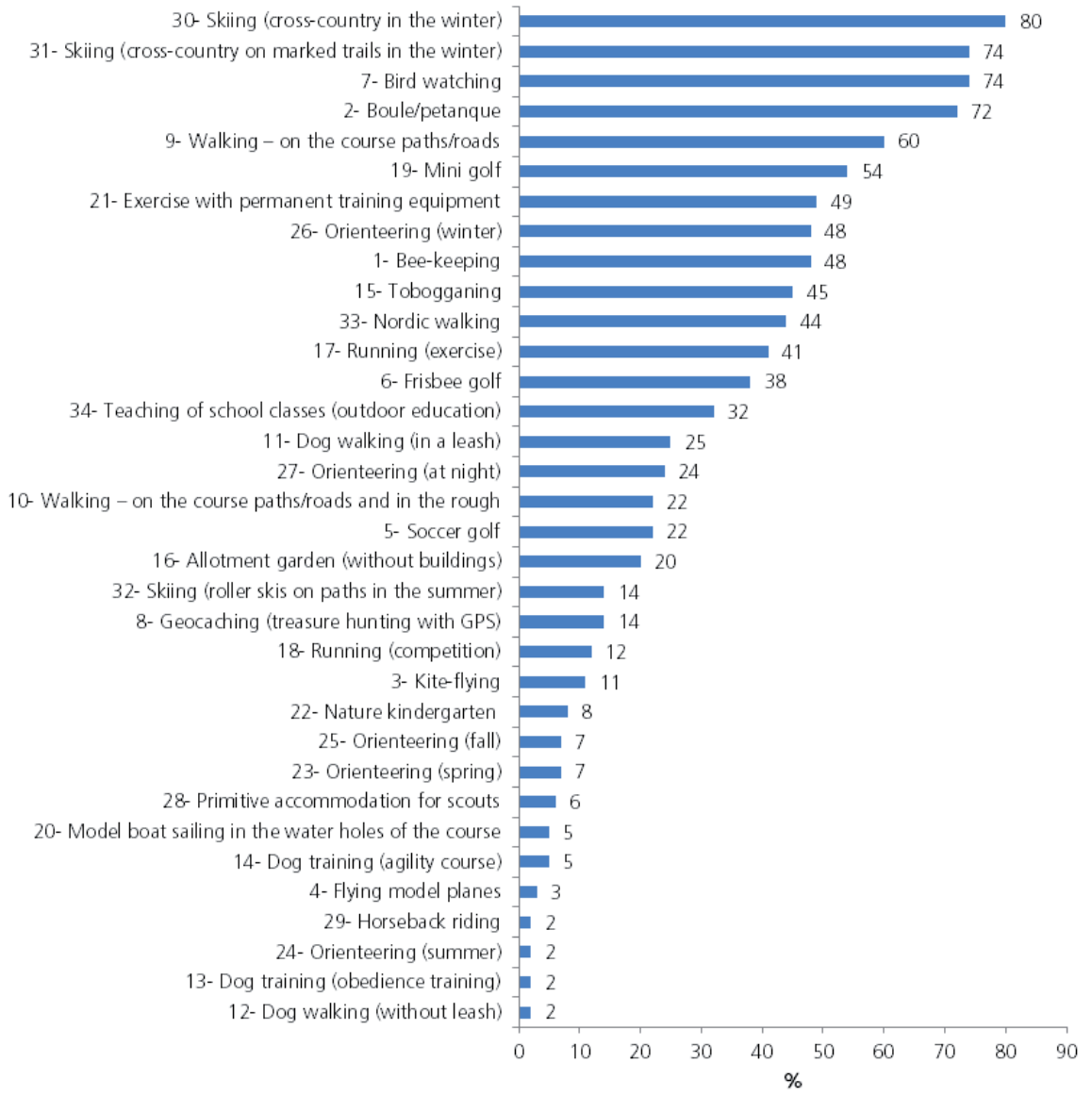


Figure V5: Distribution of responses to the question: 'We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game'.

When asked about which activities would be best suited to fit alongside the golf game, skiing, bird watching, and boule/petanque are the activities that most respondents believed would be best suited (Figure V5). Activities involving dogs are among the activities, fewest respondents believe to be best suited, as are orienteering in the summer, horseback riding and flying model planes.

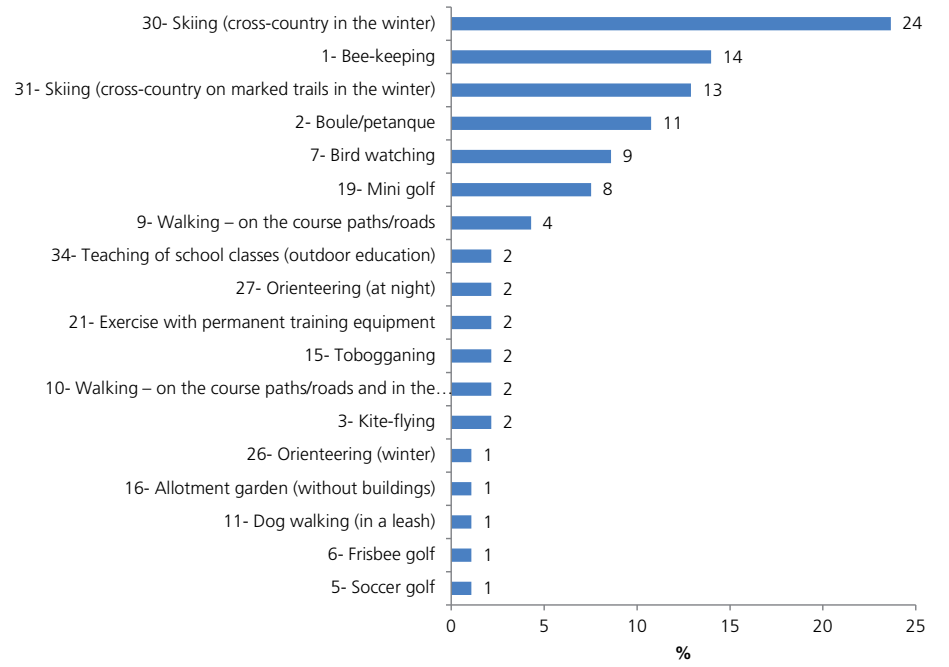


Figure V6: Distribution of responses to the question: "Which 3 of these 10 do you find best suited to fit alongside the golf game?"

When respondents were asked to choose the 3 best activities out of the 10 best, cross-country skiing in the winter is the activity most respondents (24%) found best suited (Figure V6).

Table V4: Distribution of responses to the question: "Has meeting other guests within the previous year (2013) had any influence on your pleasure of playing golf at Viksjö Golf Club's courses?"

%	Have NOT met this type of guest	Reduced my pleasure a lot	Reduced my pleasure a little	Made no difference	Increased my pleasure a little	Increased my pleasure a lot
1. Bird watchers	(78)	0	3	13	6	0
2. Dog walkers	(15)	30	20	27	7	1
3. Nordic walkers	(43)	9	8	37	3	0
4. Joggers	(15)	19	16	43	7	0
5. Other walking guests	(9)	16	24	44	7	1
6. Mountain bike riders	(67)	13	8	12	0	0
7. Other cyclists	(32)	17	21	30	0	0
8. Horseback riders	(89)	5	4	1	1	0
9. Skiers	(43)	5	8	27	7	10

Meeting other guests on the golf course can have an impact on respondents' pleasure of playing golf (Table V4). Bird watchers and skiers does not make a difference for most respondents, whereas dog walkers reduced the pleasure of playing golf a lot for some respondents. For some visitor groups the impact are more diverse, e.g. for the mountain bikers almost the same number of respondents find they make no difference as they reduce the pleasure a lot – and for the skiers there are more respondents that find they increase than decrease their pleasure.

Bird watchers, horseback riders and mountain bike riders are the types of guest that fewest respondents have met, and most of the respondents who have met these guests said they reduced the pleasure a lot – except for the bird watchers who made no difference for the pleasure of playing golf – figures that are important to have in mind, when evaluating the viewpoints of the responding golf players.

Table V5. Distribution of responses to the question: "Would your pleasure be reduced to the same degree if …" (This question was only forwarded to respondents that had a reduced pleasure of playing golf, cf. Table V4).

%	No – it would help a lot	No – it would help to some degree	Neither/nor – would not make a difference	Yes – it would not help	Don't know
… dog walkers only walked on specifically marked *paths*?	23	32	17	21	7
… dog walkers only stay in a separately marked *area*?	28	28	17	27	0
… Nordic walkers only walked on specifically marked paths?	38	31	13	13	5
… joggers only ran on specifically marked paths?	36	27	15	18	4
… mountain bike riders only cycled on specifically marked ***paths***?	42	21	26	5	6
… mountain bike riders only cycled in a specifically marked *area*?	26	37	26	5	6
… cyclists only cycled on specifically marked paths?	28	19	28	17	8
… horseback riders only rode on specifically marked paths?	0	0	63	25	12
… skiers only skied on specifically marked routes?	17	25	25	25	8

The respondents, who had experienced a reduced pleasure of playing golf due to other guests, were asked, if their pleasure would be reduced to the same degree, if certain restrictions were put on the other guests' behaviour (Table V5). The general result shows that if dog walkers, Nordic walkers, joggers, and mountain bike riders stayed on specifically marked paths or areas, they would not reduce the respondents' pleasure as much as previously.

Background information about respondents

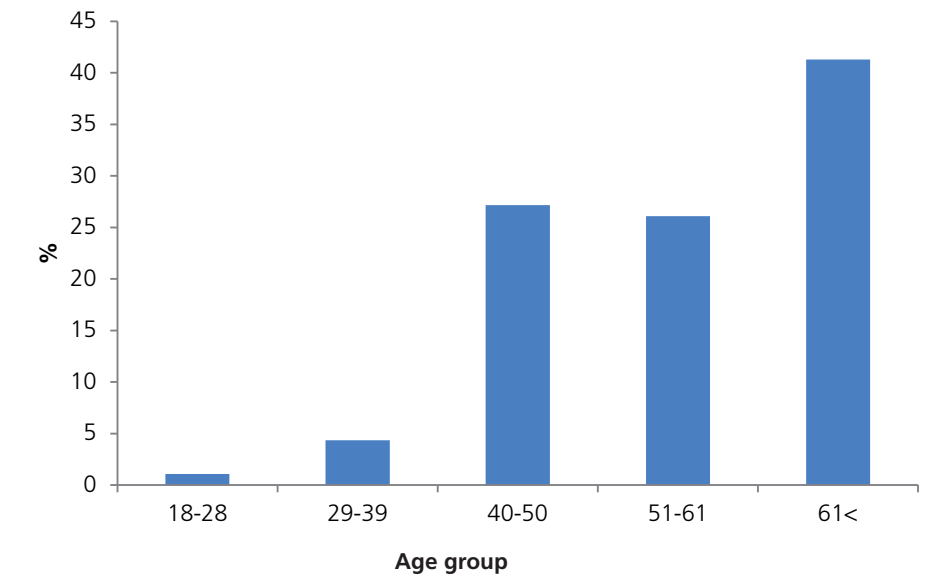


Figure V7: Distribution of responses to the question: "How old are you?"

Only 5% of respondents are younger than 40 years, and 41% are older than 61 years (Figure V7).

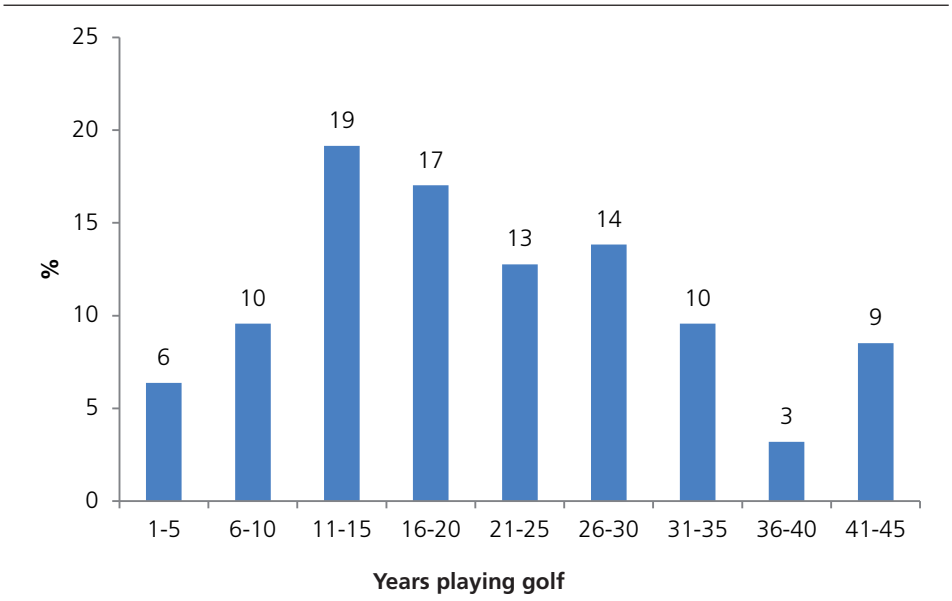


Figure V8: Distribution of responses to the question: "How many years have you been playing golf?"

Figure V8 shows that the respondents are spread out, when considering how many years, they have been playing golf. 16% have been playing 10 years or less.

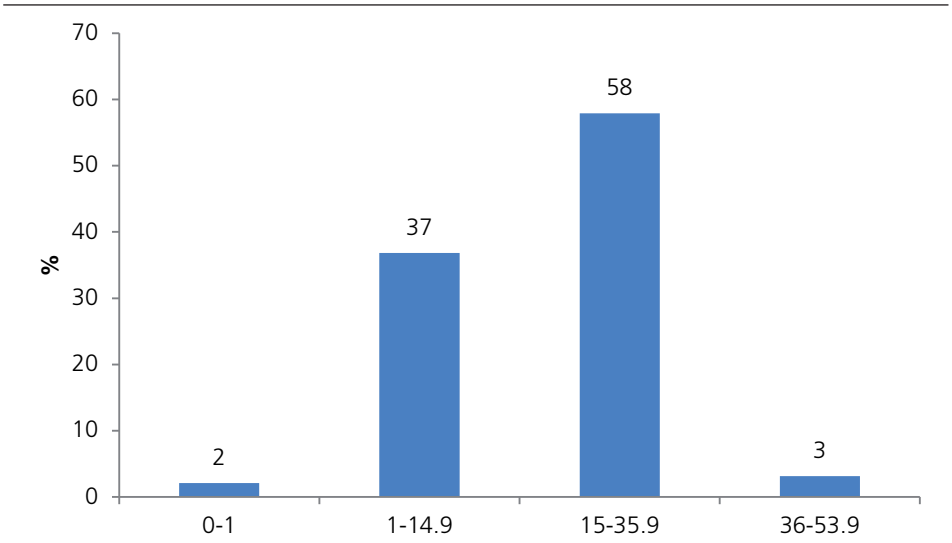


Figure V9: Distribution of responses to the question: "What is your golf handicap?"

More than half of the respondents have a golf handicap between 15 and 35.9 and 37% have a handicap between 1 and 14.9 (Figure V9).

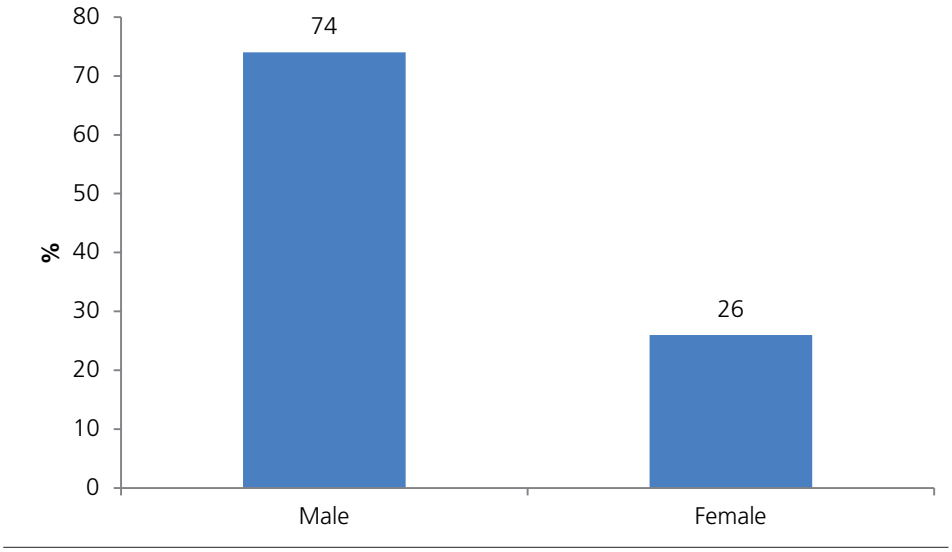


Figure V10: Distribution of responses to the question: "what is your gender?"

Three out of four respondents are male (Figure V10).

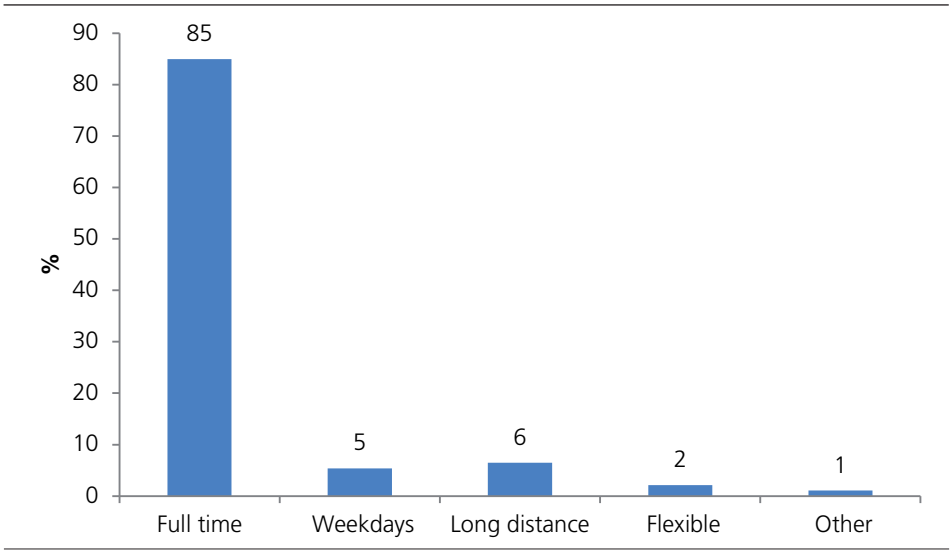


Figure V11: Distribution of responses to the question: "What kind of membership do you have in Viksjö Golf Club?"

Figure V11 shows that a large majority of respondents have a full time membership of the golf club.

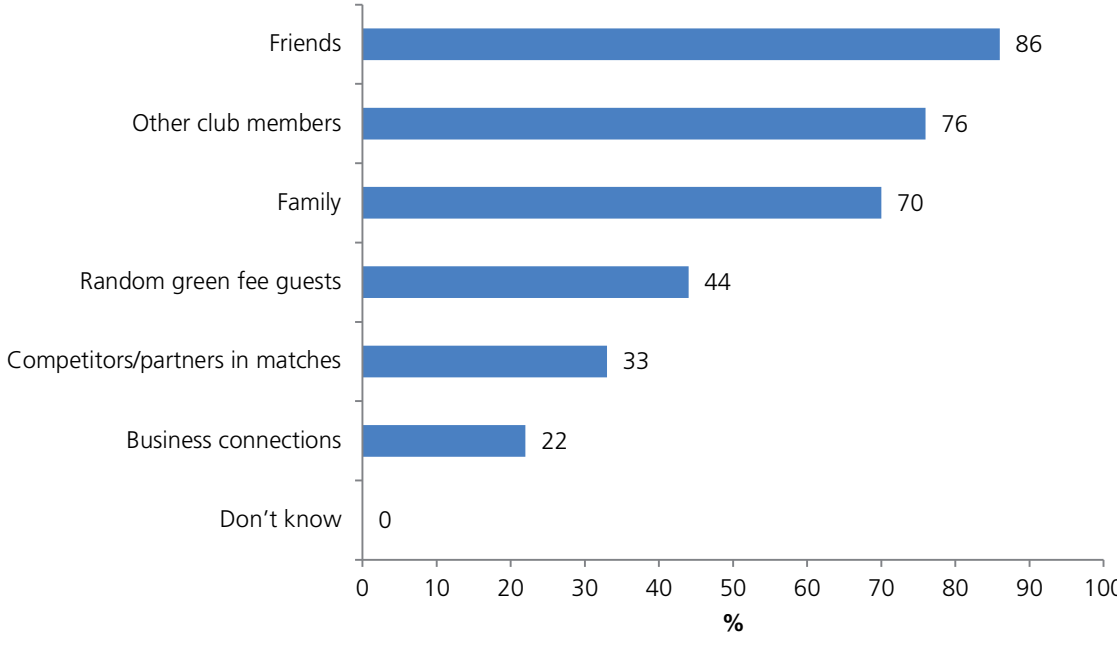


Figure V12: Distribution of responses to the question: "Who have you played golf with over the previous year (2013)?"

Figure V12 shows that respondents on average play with about three different groups of players over the year (sum of percentages in Figure V12 is just over 300). Most respondents play with friends, other club members, and family, whereas only 22% play with business connections.

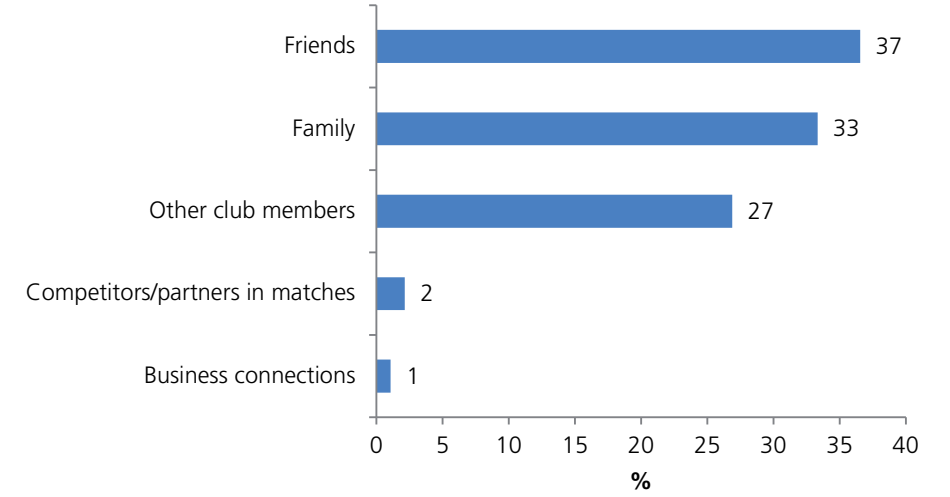


Figure V13: Distribution of responses to the question: "Who did you play with most often?"

When asked who respondents most often play with, the majority answers friends and family (Figure V13).

Table V6: Distribution of responses to the question: "How many times, approximately, have you played during the previous year (2013)?"

%	Several times per week	Once a week	2-3 times per month	Once a month	Less than once a month
Spring:	39	23	24	11	3
Summer:	57	22	16	5	0
Fall:	33	25	34	5	3
Winter:	11	5	8	4	71

In the spring and summer, most respondents play several times per week (Table V6). In the fall, most play either several times per week or 2-3 times per month, but in the winter, most respondents play less than once a month.

Table V7: Distribution of responses to the question: "Approximately, how many rounds have you played in 2013?"

%	0	1-9	10-19	20-29	30-39	40-49	50 and more
Home course:	1	18	28	18	18	5	12
On other courses (Sweden and abroad):	3	43	26	16	6	4	2

Table V7 shows that respondents in general – quite naturally – play more rounds on their home course, than they do on other courses.

Table V8: Distribution of responses to the question: "How important are the following six causes for you playing golf?"

%	Not important	Somewhat important	Important	Very important	Don't know
1- For the sake of competition	46	32	12	8	2
2- For the sake of exercise	6	17	29	48	0
3- Social interaction with family/ friends	0	7	32	59	2
4- Social interaction with other club members	25	28	24	21	2
5- To "network" (workwise)	57	27	8	3	5
6- To enjoy nature	7	32	33	26	2

Social interaction with family and friends is the cause, which most respondents find important or very important for them to play golf (Table V8). To "network", and for the sake of competition are the causes, most respondents find not or somewhat important.

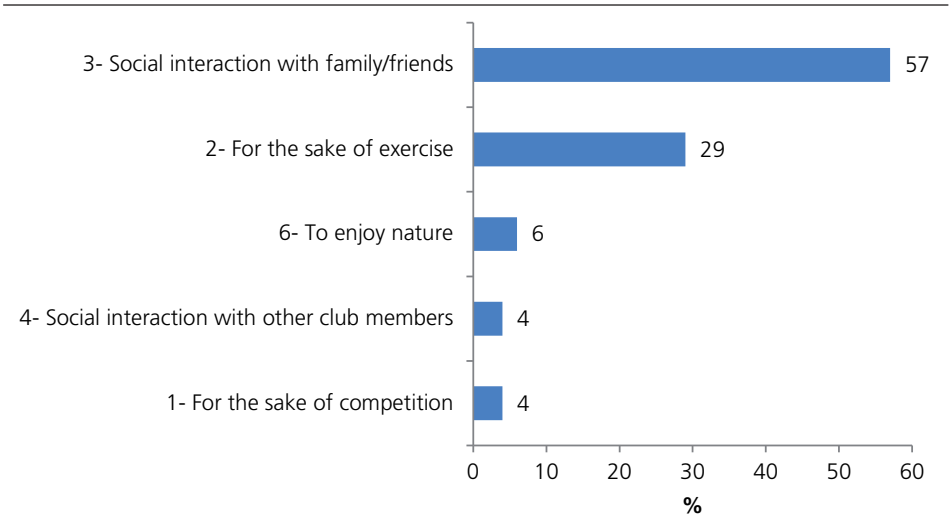


Figure V14: Distribution of responses to the question: "Which of these six causes is most important for you?"

Of the six causes, social interaction with family and friends is the cause, that most respondents find most important followed by the sake of exercise (Figure V14).

Nes golf course, Reykjavik, Island

Figure 1. Nes Golf course is a 9 hole course outside Reykjavik

The course and the club

Nes golf course is located at the peninsula of Seltjarnarnes in the outskirt of Reykjavik in the municipality of Seltjarnarnes. The location on a peninsula provides the visitors with an experience of being on an island. The coast and the absence of trees and bushes influence the character of the area and at several places it has the character of Tún which relates to the former extensive agricultural land use dominated by grass. The golf course was founded in 1964 and is owned by the municipality. Due to its remoteness and island character several birds are nesting in the area, the most famous being the Arctic tern or "Kria". Nes and the surroundings constitute an important habitat for especially this bird but for other birds as well. Seltjarnarnes municipality has 4000 inhabitants and there are approximately 600 members in Nes Golf club - 50 % of these come from Seltjarnarnes municipality and this number rises to 85% if members from the nearest municipalities are included. It is a very popular golf club and there are approximately 680 persons on the waiting list to become a member. A planning process for the green area near the golf course (Seltjarnesbær) has been initiated by the municipality and the golf club managers together with the members participate in the public phase of the planning process. The intention is to reshape an old industrial area and transform it into a housing area in which 150 flats will be developed.

Figure 2. Seltjarnes recreational area, Nes golf course is located at the large peninsula. The smallest peninsula is the island Grottá.

The course geography and lay out

Ness golf course is a 9 hole par 36 course. It is 2646 meter long and includes the following facilities:

Practice Facilities

- **Driving Range** (13 tees)
- Putting Green
- Pitching Green
- Chipping Green
- Practise bunker

A clubhouse, a bar and a small restaurant are other facilities at Nes gold course. The restaurant is open for other users than golf players nonetheless is the management of the restaurant difficult due to a relatively low number of guests. The lay out of the course is relatively compact leaving only limited room for multifunctional activity however a path along the coast makes a walk around the course possible even when playing golf.

The path is interconnected with a larger hiking path which makes a walk to the nearby lighthouse and municipal recreational area possible. Seltjarnesbær is owned by the municipality and it is the only green recreational area in the municipality hence it is important for the nearby society and for the municipality in general.

Wishes to a future development

Nes golf course is located in the vicinity of Reykjavik the largest city on Iceland and the board has decided to work towards a larger integration with the nearby society. One of the objectives is to develop a strategy that leads towards a development of new multifunctional facilities that can be used and adapted by other users as well as members of the golf club. All though the golf course is located close to the urban area and despite the service facilities are open for none members there are quit many citizens that do not visit the area. The cause may be that they traditionally have considered it as being closed for none members. The golf course board wishes to increase the numbers of users of the area and of the restaurant. Additionally there is a wish for a future enlargement of the golf course that also could generate a number of new facilities for the citizens in the area. As an initial phase in this strategy a golf magazine was produced in spring 2013. The content of this magazine was a thoroughly description of the golf course, the facilities and the different activities scheduled to take place during the summer. The magazine was intended as an invitation to the citizens in the municipality. They were invited to an open house arrangement at the golf course a Saturday in June 2013. As an introduction to this arrangement and in order to inform about the golf club every household in the municipality received a copy of the magazine.

Mapping of experience values

The mapping of different experience values that was conducted during the summer 2013 by University of Copenhagen is only indirectly related to this development however the results can contribute to visualization and a better

Figure 3- 4. The shore in front of the Golf course gives an excellent opportunity to expire an untouched and pristine environment. Photo: Ole Hjorth Caspersen

understanding of the recreational and environmental potential that is related to the golf course.

The mapping of experience values conducted at Nes golf course was performed by use of an aerial image and through a field inspection in the area. A valuable source was also the book. *Natturufar á Seltjarnarnesi* by Kristbjörn Egilsson. The conducted analyses include both the golf course and the nearby public area also owned by the municipality.

Pristine environment

Despite the fact that Nes golf course is relatively small it is possible to have an experience of a pristine and untouched environment. This experience includes landscapes and coasts that have untouched and pristine character - important for this experience is also the absence of manmade noise and technical installations which characterizes Nes. This is due to the location of the golf course on a small peninsula. There is a trail around the periphery of the golf course and a stone wall serves as a coastal protection. A along this trail there are a number of openings in the wall that makes it possible to visit the shore that consist of boulders and base rock. From the shore there is an unspoiled view to the sea and the mountains in the horizon and the absence of manmade noise is quite unique considering the vicinity to the city. At these places the experience has a pristine character, and often this experience is strengthen by the view to the wildlife in the sea for example seals and birds as eiders.

Feeling of forest

The golf course stands out as an area without bushes or trees, however there are a small area at the nearby municipal area that have a character of a common with a number of smaller trees.

Panoramic views, water and scenery

The character of the golf course and the nearby municipal area is an open area covered mainly by more or extensively managed grassland. The core area is an open landscape without houses or other technical facilities. This opens up for

Figure 4-5 . The nearby recreational area and the small island of Grottá with an old light house. Photo: Ole Hjorth Caspersen

Figure 6-7. Nes is characterized by its location surrounded by the sea, and it constitutes a relatively flat area that includes several smaller wetlands that are important biotopes. Photo: Ole Hjorth Caspersen

several panoramic views and the main experience when visiting the area is a coherent open landscape that offers many panoramic views. Due to the location on a peninsula the presence of the sea is a very dominant experience and due to the openness wind is also a factor that has a strong influence on the experience. Because the area is relative remoteness and there is an absence of houses and technical elements the municipal area is often visited by locals and tourist in order to experience the midnight sun, the northern lights (Auroras) or the birdlife in the area. The light house at Grottá is also a popular for visitors. North West of the golf course there is a relatively large lake Bakkatjórn and several benches and information posters are located around this lake and in short distance from a small parking lot.

Figure 8-9. The Atlantic tern is breeding in the area and it benefits from the more extensive managed areas . The extensive management of some of the areas also increases the biodiversity and increases the experience for the visitors. Photo: Ole Hjorth Caspersen.

Biodiversity and land form

At Nes peninsula there is one major experience that dominate and that is the presence of the Artic Tern that has its breeding area at several places at the golf course. It breeds in small colonies typically very close to areas where golf is played. The island Grottá has since 1974 functioned as a nature reserve because of the rich birdlife. There are different breeding places in the area and the number of nests has been counted since 1986. The number of nests has always been largest at the breeding area within the golf course. This may seem strange due to the many golf players that visit this area. Apparently golf players and terns have accepted each other, and normally behavior does not create problems with the terns although the golf players move around with the putter raised above their head in order to avoid attacks from the terns. Normally the breeding areas, as for example the one at Grottá near the Viti lighthouse is closed during the breeding period, but through a visit to the golf course the visitor will have the possibility to see the terns at their breeding area on distances less than 20 meters. However also other birds than terns are common in the area at Lake Bakkatjörn in the municipal area there are information posters that inform about the birdlife and benches from where it is possible to watch the birds. The place has developed to become an interesting place for bird watchers. In 1952 83 different species were identified. A number that had increased to 106 species in 1992 (Egilsson Et.al 1997 p. 45). Larger mammals as seals are also sometimes seen close to the coast.

The landform of the Nes peninsula and the nearby municipal area is low and relatively flat. From the coast the land rises to 5 meter and at the northern part at Nesstofa it reaches 10 meter. A part of the area is former farmland and near Nesstofa a large area was used for growing potatoes. The coast consists partly of rock partly of sand. There are several smaller habitats in the area in which the biodiversity is relatively large and this includes meadows and wetlands as well as smaller ponds. The meadows are areas on the golf course where the management is more extensive and of them some are covered by relatively large boulders.

Cultural history

Seltjarnesbær has a long cultural history nevertheless at Nes the most significant historic element is a 3 m high yellow stone pyramid made by boulders. The age of this dominant seamark is not exactly known but it I is probably older than the nearby Lighthouse at The island of Grottá. A firehouse at Grotta was built in 1897 under guidance of the Danish “Firehouse institute”. This was followed by the existent lighthouse Viti that was built in 1947. It is 24 meters high and designed by the Icelandic engineer Axel Sveinsson. The Grottá island is connected to the mainland by an isthmus and can only be visited at low tide outside the terns breeding period 1 of may to 1 of july. The area of Seltjarnesbær between Grottá and the Nes golf course is a former agricultural area, which is now abandoned and turned into extensive managed grassland and it now functions as a municipal recreational area. In the northern part there is a medical and health care museum situated at the house Nesstofa. This house is one of the oldest concrete houses on Iceland built during the period 1761-63 for the first Surgeon General of Iceland Bjarni Palsson. The house has recently been restored. An excavation of an older stone building beside the Nesstofa started in the summer 2013 and indicates the long time depth of this area.

Figure 10- 11. The old sea mark at Nes from 1780 is a significant landmark in the area. Fig 11. There has been human activities in this area through centuries, presently and old building is being excavated near Nesstofa. Photo: Ole Hjorth Caspersen.

Island has always been dependent on the easily accessible fish which are present in large quantities, and there are several remains in the northern part of the area that relate to fishery. In order to preserve the fish it was often dried and then exported as stock fish. Remains of this production can be seen close to Grottá. Likewise there is a special house for storage of shark meat from the Hákarl which also can be seen in the same area. All these remains can serve as a small open air museum.

Activity and challenge

Due to the specific location surrounded by the sea it can be a challenge to play golf at Nes golf course. Elements as rain and wind are factors that have a great influence on the game played at this location. But there are other possibilities for activity. Bird watching can be carried out at many different places at the course and in the surrounding areas. Especially the area around the central lake Bakkatjórn and Grottá should be mentioned here. There are also good possibilities for walking, running or bicycling along the path that runs in the periphery of the golf course. Due to its compact layout it is not possible for visitors to cross the course from the centrally located restaurant in order to visit the

Figure 12-13. In the municipal area several facilities has been established in order inform the visitors and to facilitate a visit in the area. A path along golf course is used for exercise and sightseeing. Photo: Ole Hjorth Caspersen.


Figure 14-15. The club includes a restaurant open for none members it is located in the center next to the Atlantic tern colony and there are a splendid view to colony form the restaurant. Photo: Ole Hjorth Caspersen.

coast. The path is connected to the larger hiking path at the municipal area. However there are large differences in the quality of these paths. Along the municipal recreational area the path has character as a paved bicycle road with several benches, whereas around the golf course it is a simple dirt road with only few benches. A part of the municipal area consists of a sandy beach and swimming is possible if the conditions are right.

At Nes golf course the only possible access for people not playing golf is either to visit the club restaurant or to take a walk along the path along the coast. Due to the lay out of the course some parts of this trail is not absolutely safe.

The restaurant is presently the only restaurant in the area, but it is planned that in the future a new restaurant at the health museum at Nesstofa should be open for visitors also. More information regarding the nature and cultural history of the area is avaible at http://www.nat.is/museums/nesstofa_seltjnes.htm.

Service and gathering

There are a number of parking lots in the area, one in the southern part and a relatively large parking lot near Grottá. The latter is often used by busses bringing out tourist to experience the wildlife and the nature in the area. There is a small parking lot at the golf course and near Lake Bakkatjörn but the capacity of these parking lots are relatively small. There are restrooms at the golf course and in the public area near Grottá.

Along the coast and around the large central lake there are benches every 100 meters, as well as information posters that inform about the landscape and the wildlife in the area. Despite these recreational elements a large part of the area - and especially the central part has not been developed actively for recreational purposes. Development has mostly taken place along the coast and around Lake Bakkatjörn. A land fill areal has been established in the area. It has however a more temporal character.

Figure 9. Experience values at the Nes Golf course and the nearby Seltjarnesbær recreational area. Map made by Patrik Nyed Karlsson.

Experience values in the area

The result of the experience mapping at the golf course and the nearby municipal recreational area illustrates large differences in the existing facilities. Likewise are there significant differences in the recreational use of Nes and Seltjarnesbær. There are also very different recreational potentials related to the two areas but when combined they offer a broad specter of excellent recreational experiences within a very short distance of the city. Additionally there are plenty of options for a future development of new recreational facilities based on the mapping of experience values for the whole area.

The location of the golf course on the small Nes peninsula is unique and it offers spectacular views both for the golfers as well as for other visitors. Visitors at this location are in close contact with the elements and it is amazing that that a small golf course that only comprises a relatively small area not occupied by golf can offer experiences of pristine and untouched character. The latter experience can be found close to the coast, but the experience is especially significant when visitors use some of the entrances in the wall that surrounds the course and makes access to the shore possible. From several of these places there are no views to the city and there is an absence of human generated noise and here the experience of a pristine area dominates.

The land use at Nes the golf course is dominated by the golf course and besides the path along the coast there is not much room for other recreational activities than golf. However a part of the area serves as a conservation area and is also a breeding habitat for the Atlantic tern. Hence the golf course offers a very rare opportunity to observe the tern when it is breeding within an unusually short distance. Likewise there is a relatively high biodiversity at some of the extensively managed areas. The land use in the area was classified as Tún (Fields) before the golf course was established and along the coast and around the lakes grassland dominated. These areas are related to higher biodiversity due to the environmental conditions and a longer time depth (Egilsson Et.al 1997). The cultural farming landscape has been changed due to the establishment of the golf course and there are not many historical remains within the area beside the old seamark at the coast.

In general the facilities for none golfers are rather rudimentary including the path along the coast, and there are only a few benches along the path. Likewise the information in the area is targeted at golf players. The golf restaurant is open for all visitors and it is presently the only place in Seltjarnes that offer such facilities. However the arevalue of these facilities for the visitors is rather limited due to the relatively difficult accessibility and lack of advertisement. In order to visit the club house you will have to use the main road and the connected parking lot. But from the club house there are no path leading directly to the coast or from the coast to the restaurant. This limits the numbers of potentials visitors. The access to the Seltjarnesbær area is easier if one uses the parking lot in the northern part of the area near Grottá, and although it can be stated that the views from this place is not as spectacular as from the golf course it is still quite impressive and offers experiences found on the golf course. On some points the facilities are more developed, for example a paved road, benches and information posters that inform of birdlife in the area are present.

Suggestions for future multifunctional development

The Nes Golf course together with the Seltjarnes municipal recreational area constitutes the only larger green recreational area in the municipality. Hence both areas are important but the synergy of the two areas combined could be considered as an advantage for the golf course. Today it is not utilized to its full extent. However it is important for a future development that both areas are being considered and included in a future strategy for recreational develop-

ment. A development in this direction could be beneficial to the Nes golf course due to several reasons:

- It could strengthen the link between the golf course and the local society
- It would provide a positive branding of the golf course in the society
- A larger focus on the birdlife could attract a new type of visitors/tourists
- It could attract more users of the facilities i.e. the restaurant

Based on the experience mapping it may be suggested that the focus in a future branding departures in the unique experience values that can be found at the golf course and its surroundings. These are especially related to the views from the trail along the coast, and the unique possibility to observe the wildlife at a close distance. This includes both the Artic tern and seals. A development in this direction would complement the experiences that relate to municipal recreational area. The golf course would offer experiences of a more pristine character along the coast and provide good service despite the intensive use related to peoole playing golf in the area .

Actions proposed at Nes golf course:

- A more prominent branding of the restaurant should be established. It offers a splendid view and can be used by everybody. Information on this should be located different places for example at the parking lots. Information about the trail around the golf course is also needed and information regarding the restaurant could be included on this. Information is needed about the trail around the golf course and safety issues related to the use. This information should be included in general information regarding the whole area. So when standing at the parking lot at Grottá there should be information regarding "the Nes nature trail".
- By adding a second floor to the restaurant an even better view to the tern breeding area and to the coast and wildlife in front of the golf course could be created. The area is already a popular place to watch the sunset and northern lights.
- A better connection from the restaurant to the coast would be beneficial.
- More benches along the coast in the safe parts for example in relation to the sea mark.
- The abandoned concrete house at the coast could be turned into a wildlife watching tower/shelter by relatively simple means. Including a bench and information posters.

References

Kristbjörn Egilsson Et.al 1997.
Natturufar á Seltjarnarnesi, Natturufræðistofnun Islands og Liffræðistofnun Haskolans: Seltjarnarnesbær.
Kynningblad Nesklúbbsins 2013.

Golf players' viewpoints

Golfklúbbur Ness, Iceland

To get the viewpoints of the golf players at Golfklúbbur Ness regarding multifunctional initiatives, a web based questionnaire was developed. The questionnaire was identical for all five golf courses/clubs included in the project. However, one minor change was made for the Ness-questionnaire in the question showed in Table 1, where the first statement combines club house and restaurant instead of splitting it into two separate statements as done for the four other surveys; in addition, the question regarding type of membership is not posed, as only one membership type (full time) is available.

Contact to the respondents was made through the homepage of the club/course, and in newsletters. During February 2014 – May 2014, a total of 254 persons have opened the survey, and 189 have for sure read one or more of the questions. 117 respondents completed the questionnaire by answering all questions. The following analysis is based on these *117 respondents*.

Summary of selected results – for the full, balanced results, please see the specific tables and figures following this brief overview:

- There are generally more positive than negative respondents towards other activities on the golf course than golfing itself if it takes place in the winter time, and not in the summer.
- A large majority of the respondents find it important that the golf course is managed so it can contribute as habitat for the natural flora and fauna.
- Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 80% are positive/very positive, and 6% are negative/very negative.
- Out of 34 different activities one could imagine taking place at a golf course, the ones that most respondents (50% or more) find *best* suited to fit alongside the golf game are: bird watching, mini golf, running (exercise), walking on the course paths/roads, skiing (cross-country in the winter), and orienteering in the winter – and 50% or more found the following activities *worst* suited: dog walking (without a leash), bee-keeping, flying model planes, horseback riding, dog training (obedience training), dog training (agility course), and kite-flying.
- Among the present guests at the golf course, dog walkers are the category that most respondents find reducing the pleasure of playing golf.
- The majority of the respondents partly or strongly agree in that new initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport – and thereby get more members.
- A short general characterization of the respondents: 69% are older than 50 years and 9% younger than 40 years; 67% are males; 59% have a handicap between 15 and 35.9; 15% have played golf 5 years or less and 37% have

played more than 15 years; social interaction with family and friends are the most important cause for playing golf for 37%, enjoying nature is most important for 32%, exercise is most important for 25%, the competition for 4%, and finally social interaction with other club members and networking (workwise) is both most important for 1%.

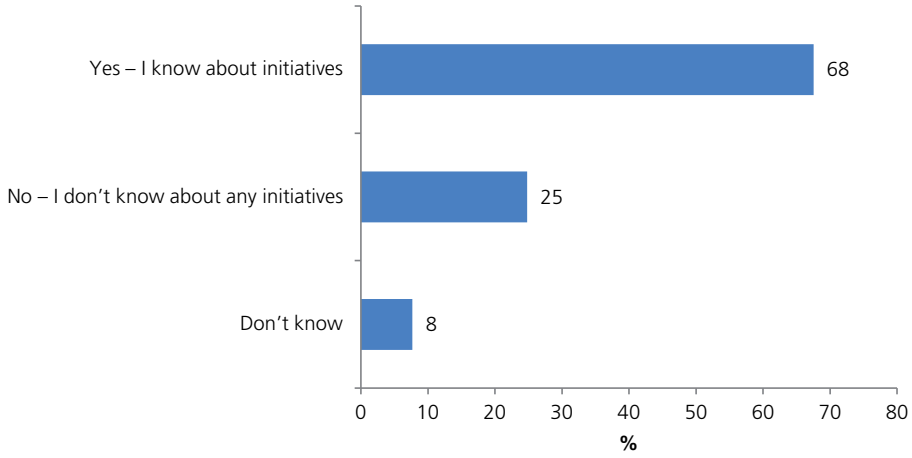
Table N1: Distribution of responses to the question: "Please state how much you disagree or agree with each of the following 9 statements. When you answer please think of the golf course you are most attached to – your home course."

%	Strongly disagree	Partly disagree	Neither /nor	Partly agree	Strongly agree	Don't know
1. If efforts were made to have more visitors and activities in the ***club house/restaurant***, it would be a good way to get more people in contact with the golf sport and thereby get more members	2	13	13	42	30	1
2. In general, I think it would be positive, if the social life is increased by the club house/ restaurant being used by other people than golfers.	3	11	9	36	40	1
3. If efforts were made to have more visitors and activities on the ***golf course itself***, it would be a good way to get more people in contact with the golf sport and thereby get more members.	5	13	18	43	21	1
4. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not affect ***security.***	10	14	14	37	24	1
5. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not ***disturb*** my golf play.	6	17	9	38	27	2
6. More of my family, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	10	13	35	30	6	4
7. More of my friends, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	8	13	40	31	4	4
8. I myself would like to use the golf course for visiting nature and other activities than playing golf.	15	21	18	32	11	2

Table N1 shows the distribution of respondents' level of agreement with 8 statements about different aspects of multi-functionality in relation to golf courses. A large majority of respondents agreed that initiatives and activities in the club house/restaurant would be good ways to get more people in contact with the golf sport, and thereby get more members. A

smaller majority of respondents agreed that using the golf course itself for this purpose would be a good idea.

Figure N1: Distribution of responses to the question: "Do you know if any initiatives have been made on your home course that allows other people than golf players to use the course, club house and/or restaurant?"



Almost 7 out of 10 respondents knew about initiatives on their home course that allowed other people than golf players to use the course, club house and/or restaurant (Figure N1).

Table N2: Distribution of responses to the question: "What would your overall attitude be, if new initiatives towards other activities than golfing itself should become a reality on your home course?"

	Very negative	Negative	Neither /nor	Positive	Very positive	Don't know
Other activities, only in the ***summer***:	20	23	18	26	11	2
Other activities, only in the ***winter***:	3	3	15	40	37	2
Other activities, ***all year:***	10	16	22	35	13	4

Table N2 shows that respondents' overall attitude is positive or very positive if new initiatives towards other activities than golfing itself should become a reality on their home course in the winter, whereas summer activities are looked upon more negatively.

Table N3: Distribution of responses to the question: "When talking about "multi-functional" golf courses, one often also thinks about the cultural, natural, and environmental conditions. When you answer, please think of the golf course you are most attached to – your home course."

%	Not important	Somewhat important	Important	Very important	Don't know
How important do you believe it is that …					
… an extra effort is made to improve living conditions for the natural **flora** on the golf course?	6	15	30	46	3
… an extra effort is made to improve living conditions for the natural **fauna** on the golf course?	6	10	27	56	1
… the golf course is **designed**, so it can contribute as habitat for the natural flora and fauna?	3	11	28	55	3
… the golf course is **managed**, so it can contribute as habitat for the natural flora and fauna?	7	10	26	55	2
… information is given about flora and fauna to other visitors?	4	17	34	42	3
… the golf course is managed in an environmentally friendly way?	1	9	23	65	2
… in five years, pesticides (weed, insect- and fungi control) are no longer used on the golf course?	13	14	27	16	31
… possible cultural or historic monuments are preserved on the golf course?	7	18	31	40	4
… information is given regarding possible cultural or historic monuments to other visitors?	7	20	37	32	4

Table N3 shows that a large majority of respondents believe it is important or very important that golf courses are designed and managed, so they can contribute as habitat for natural flora and fauna. When it comes to using pesticides on golf courses only 43% of respondents believe it is important or very important, that pesticides are no longer used in five years – and 31% didn't know.

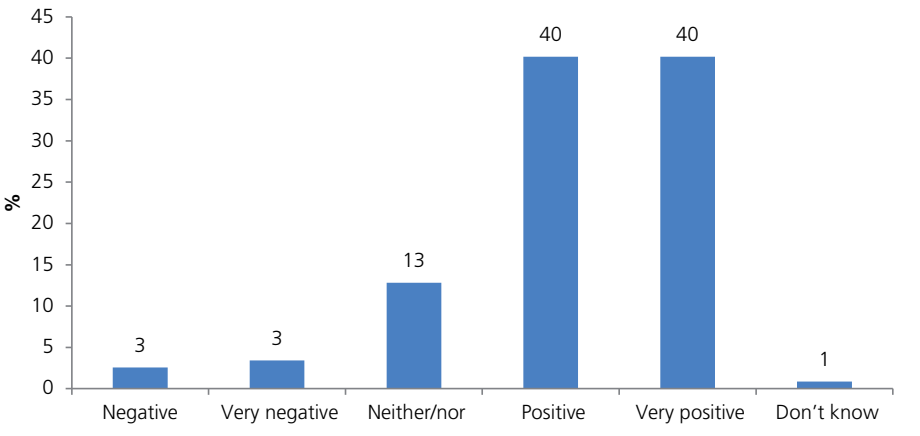


Figure N2: Distribution of responses to the question: "What will your overall attitude be, if new initiatives towards more focus on cultural, natural, and environmental conditions would become a reality at your home course?"

According to Figure N2, 4 out of 5 respondents have an overall positive or very positive attitude towards new initiatives with more focus on cultural, natural, and environmental conditions.

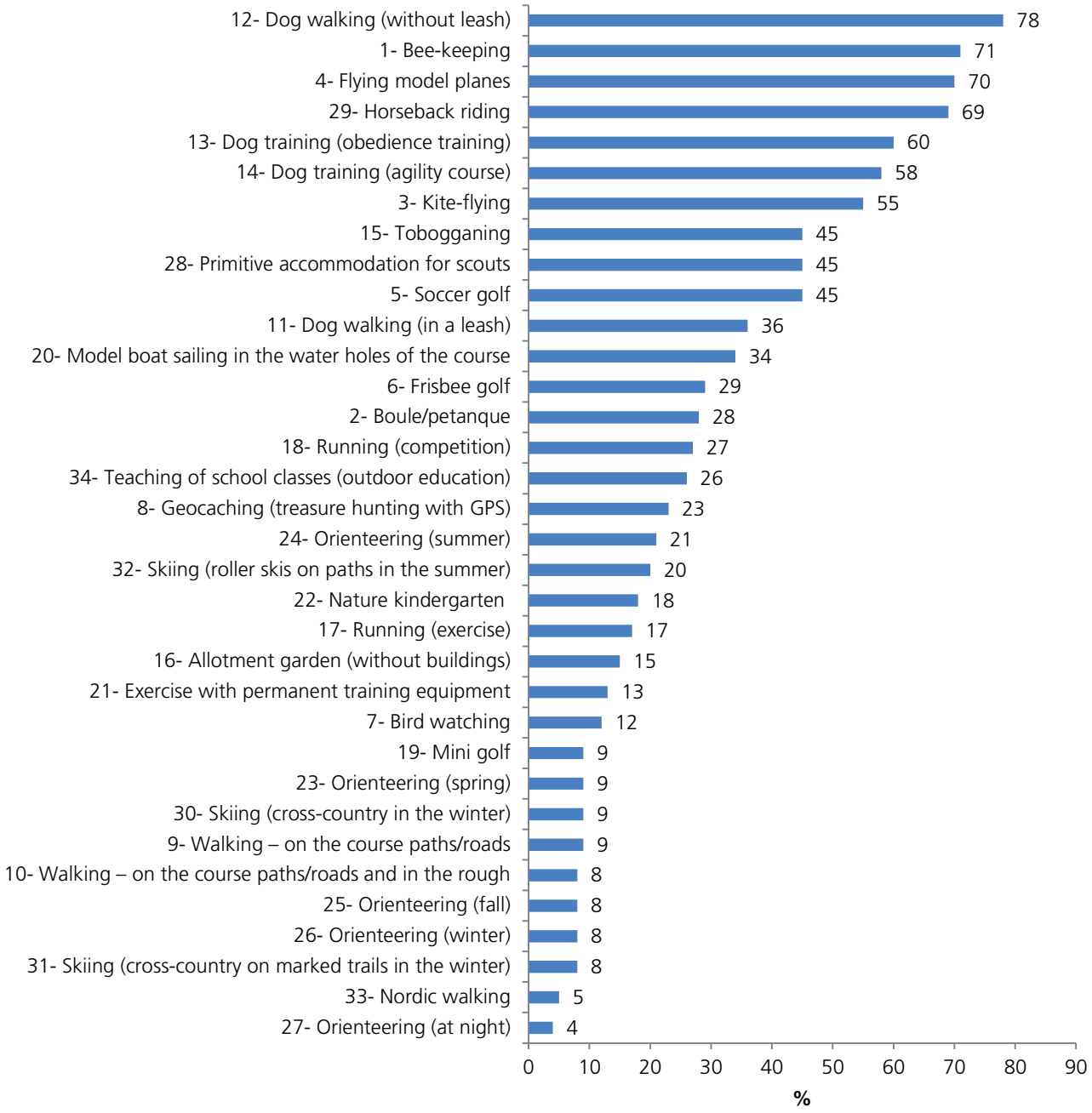


Figure N3: Distribution of responses to the question: "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing."

Figure N3 shows, that most respondents find activities like dog walking (without leash), bee-keeping, flying model planes, and horseback riding to be among the worst suited activities to fit alongside the golf game. Orienteering at night or in the fall and winter, skiing, and walking are among the activities that least respondents find to be among the worst suited.

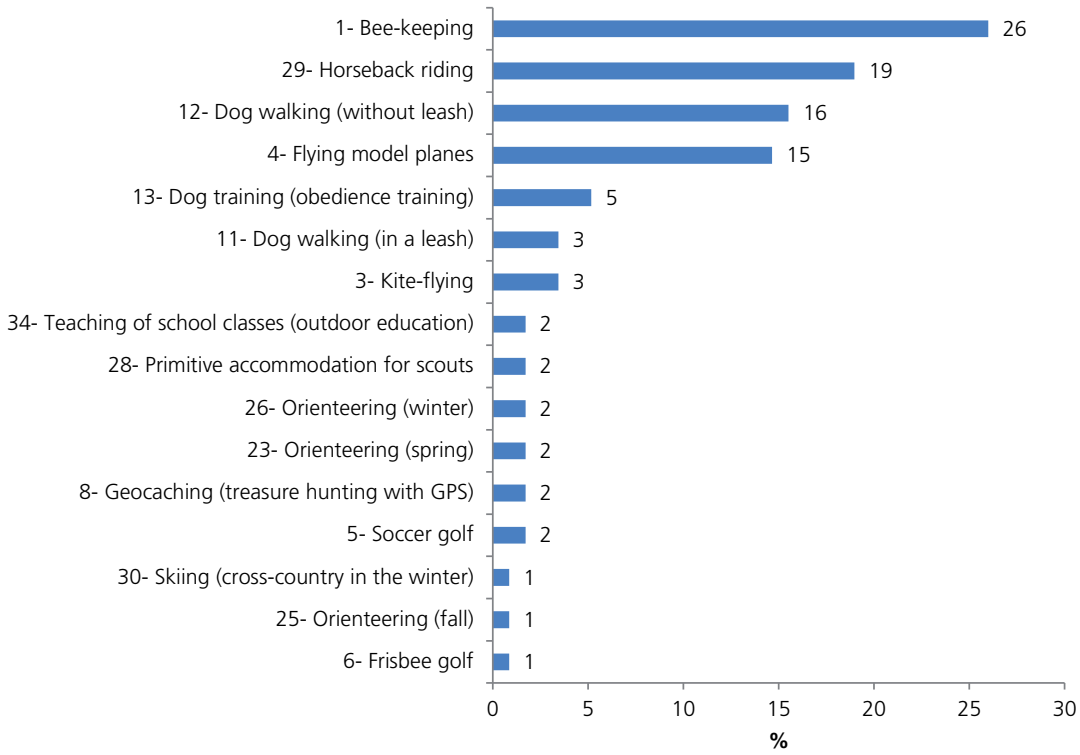


Figure N4: Distribution of responses to the question: "Which 3 of these 10 do you find worst suited to fit alongside the golf game?"

When asked to choose the three worst of the 10 worst suited activities, most respondents found bee-keeping worst suited, followed by horseback riding (Figure N4). As seen in Figure N3, only few respondents find orienteering and skiing among the worst suited – while relatively many find different dog activities among the worst suited.

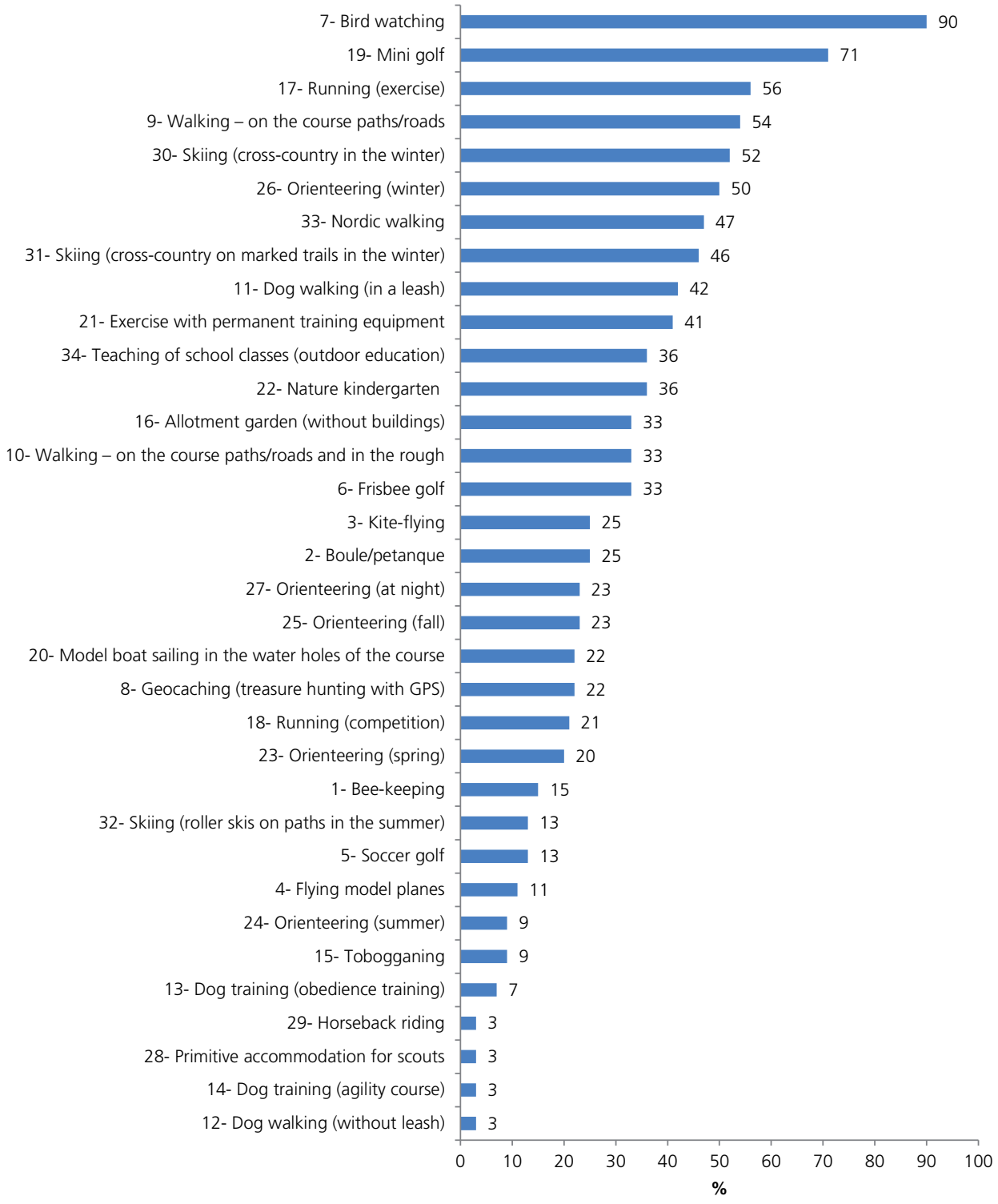


Figure N5: Distribution of responses to the question: "We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game."

Bird watching and mini golf are the two activities, most respondents think are among the best suited activities to fit alongside the golf game (Figure N5). Activities in the winter, as skiing or orienteering, are also among the activities, most respondents chose. At the other end of the scale are several activities with dogs that least respondents think are best suited. However, 42% of respondents chose dog walking (*with* leash) as one of the 10 best suited activities.

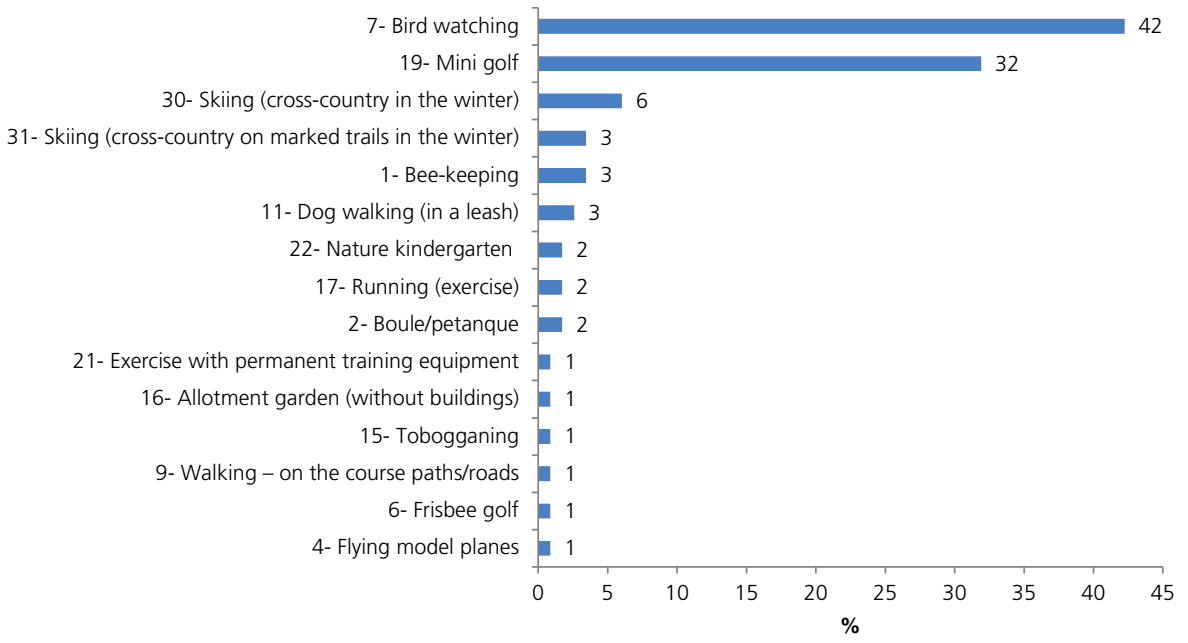


Figure N6: Distribution of responses to the question: "Which 3 of these 10 do you find best suited to fit alongside the golf game?"

When asked to choose the 3 best activities out of the 10 best, bird watching and mini-golf are the activities that most respondents find best suited (Figure N6). These two activities stand out from the other activities chosen, as 42% and 32%, respectively, of the respondents think they are among the three best suited activities, followed by 6% choosing cross-country skiing in the winter.

Table N4: Distribution of responses to the question: "Has meeting other guests within the previous year (2013) had any influence on your pleasure of playing golf at Ness Golf Club's course?"

	Have NOT met this type of guest	Reduced my pleasure a lot	Reduced my pleasure a little	Made no difference	Increased my pleasure a little	Increased my pleasure a lot
1. Bird watchers	(13)	4	3	43	16	21
2. Dog walkers	(8)	28	13	38	8	5
3. Nordic walkers	(31)	2	3	50	9	5
4. Joggers	(2)	5	9	61	14	9
5. Other walking guests	(2)	4	16	54	15	9
6. Mountain bike riders	(31)	4	5	44	13	3
7. Other cyclists	(14)	9	8	53	13	3
8. Horseback riders	(76)	4	3	16	1	0
9. Skiers	(76)	4	1	18	1	0
10. Other	(51)	7	3	34	3	2

Meeting other guests on the golf course does not generally seem to reduce respondents' pleasure of playing golf (Table N4). However, 41% of respondents answered, that dog walkers had reduced their pleasure a little or a lot, while meeting bird watchers increased the pleasure of playing golf a little or a lot for 37% of respondents.

The responses indicate that quite numerous other types of guests are seen at the course, as only horseback riders and skiers are not seen by many of the golf players at the course.

Table N5: Distribution of responses to the question: "Would your pleasure be reduced to the same degree if …" (This question was only forwarded to respondents that had a reduced pleasure of playing golf, cf. Table N4).

%	No – it would help a lot	No – it would help to some degree	Neither/nor – would not make a difference	Yes – it would not help	Don't know
… dog walkers only walked on specifically marked *paths*?	28	15	19	30	8
… dog walkers only stay in a separately marked *area*?	26	13	19	32	10
… Nordic walkers only walked on specifically marked paths?	40	20	20	20	0
… joggers only ran on specifically marked paths?	35	29	23	12	1
… mountain bike riders only cycled on specifically marked *paths*?	55	18	18	9	0
… mountain bike riders only cycled in a specifically marked *area*?	46	27	18	9	0
… cyclists only cycled on specifically marked paths?	35	20	40	5	0
… horseback riders only rode on specifically marked paths?	13	13	13	50	11
… skiers only skied on specifically marked routes?	33	17	0	17	33

The respondents, who had experienced a reduced pleasure of playing golf due to other guests, were asked, if their pleasure would be reduced to the same degree, if certain restrictions were put on the other guests' behaviour (Table N5). The general results show that if joggers, Nordic walkers, and mountain bike riders stayed on specifically marked paths or areas, they would not reduce the respondents' pleasure as much. Horseback riders and dog walkers on the other hand are still believed to cause reduced pleasure for around 50% of respondents, even if they were to stay in specific areas or paths.

Background information about respondents

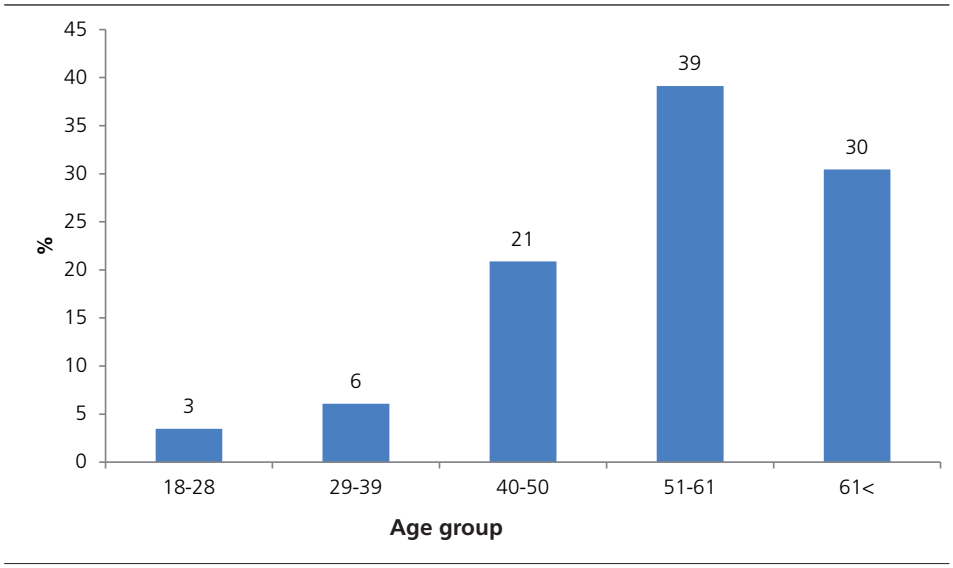


Figure N7. Distribution of responses to the question: "How old are you?"

The large majority of respondents are older than 40 years (Figure N7). 69% of respondents are older than 50 years, and 9% are in the age group 18-39 years

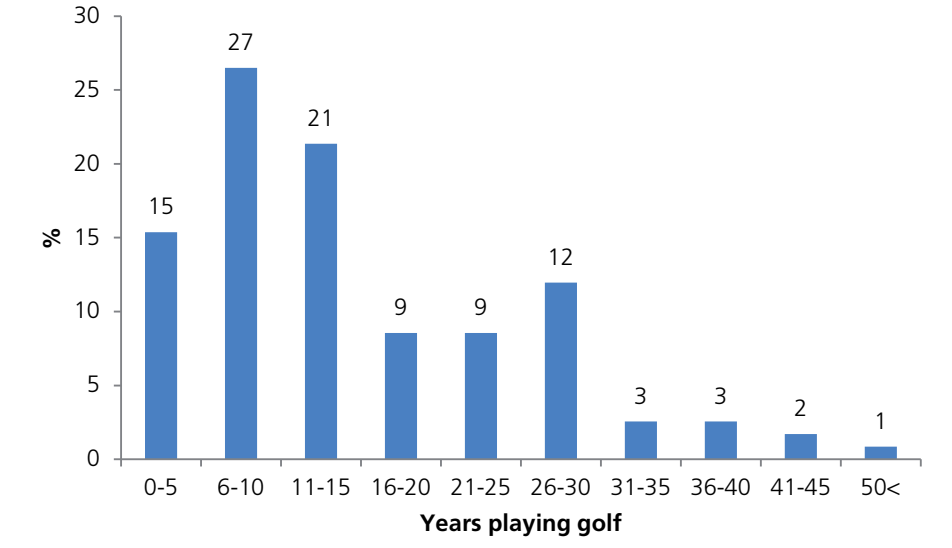


Figure N8: Distribution of responses to the question: "How many years have you been playing golf?"

Figure N8 shows the distribution of respondents according to how many years, they have been playing golf. More than 50% have been playing 15 years or less, and only 9% have been playing for longer than 30 years.

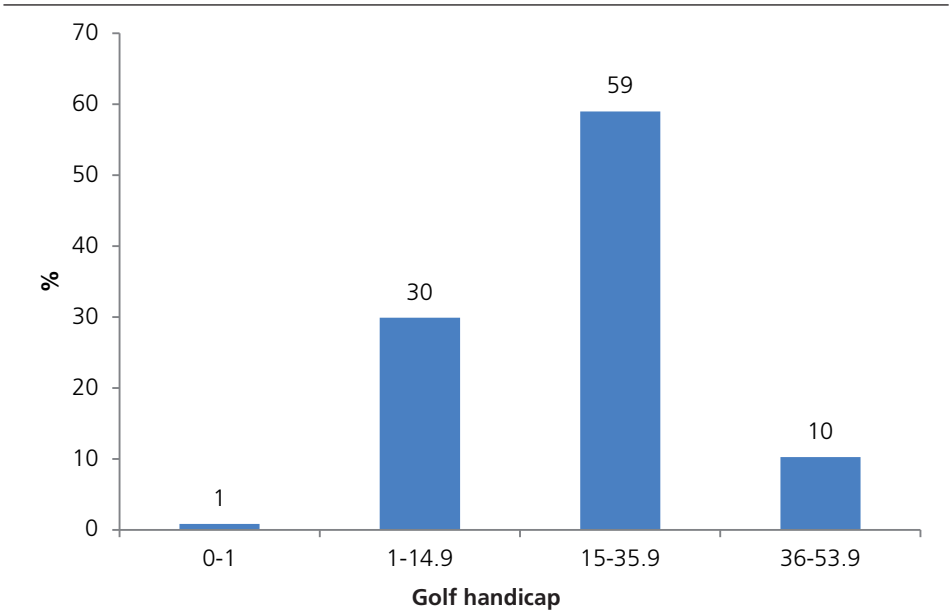


Figure N9: Distribution of responses to the question: "What is your golf handicap?"

More than half of respondents have a golf handicap between 15 and 35.9 (Figure N9). Relatively few have a handicap higher than 36 (10%)

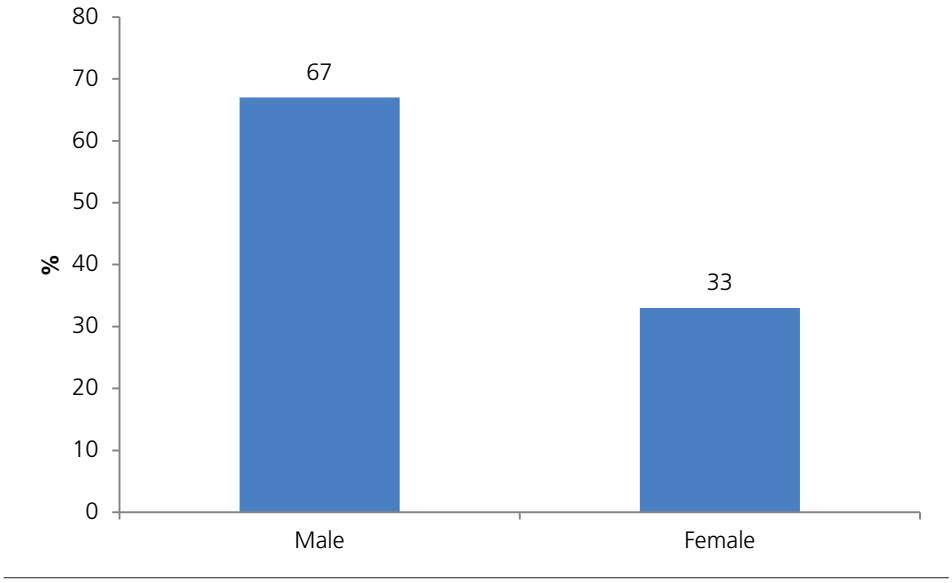


Figure N10: Distribution of responses to the question: "what is your gender?"

Figure N10 shows that 67% of respondents are male.

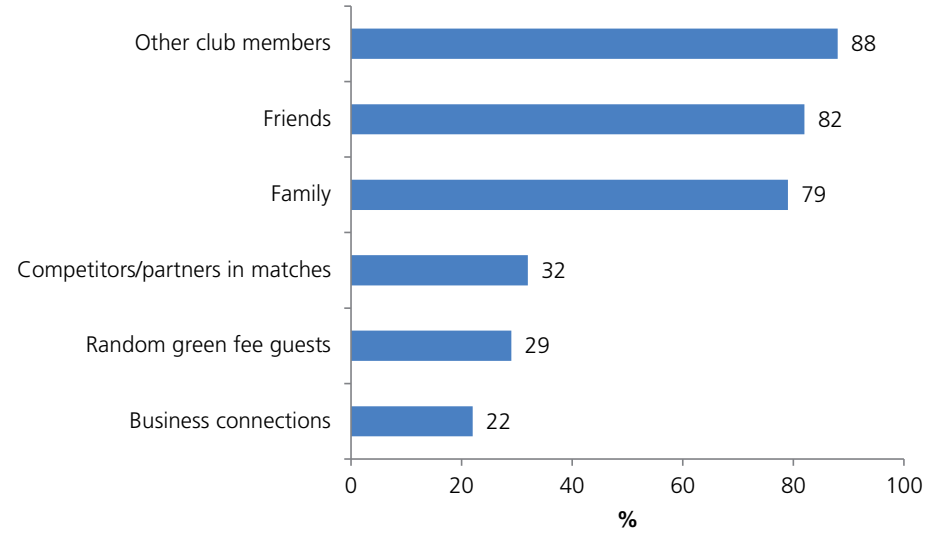


Figure N11: Distribution of responses to the question: "Who have you played golf with over the previous year (2013)?"

On average, respondents play with three different groups of players over the year (sum of percentages in Figure N11 is more than 300). More than 3 out of 4 respondents play with one of the three groups: other club members, friends, and family. When asked, who respondents most often play with, 41% say family, and only 1% plays mostly with random fee guests or competitors/partners in matches (Figure N12).

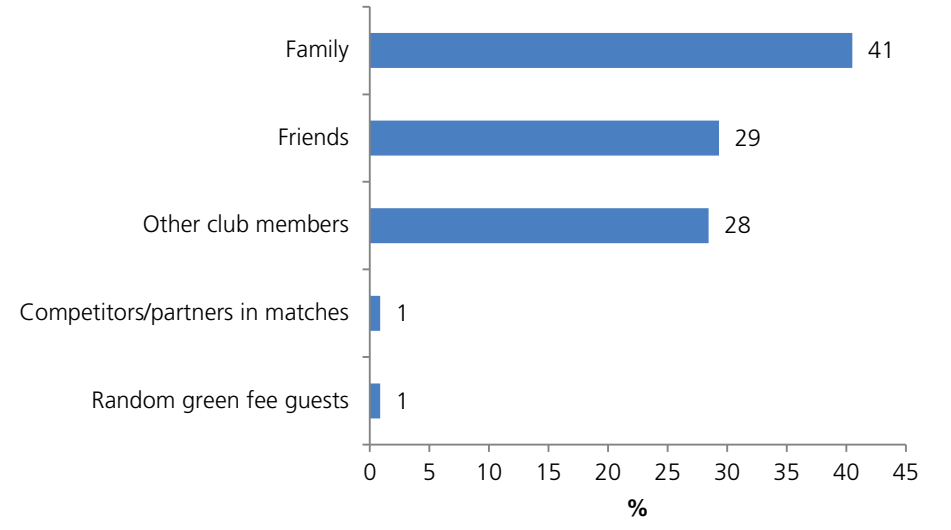


Figure N12: Distribution of responses to the question: "vWho did you play with most often?"

Table N6: Distribution of responses to the question: "How many times, approximately, have you played during the previous year (2013)?"

%	Several times per week	Once a week	2-3 times per month	Once a month	Less than once a month
Spring:	41	32	13	8	6
Summer:	72	12	12	3	1
Fall:	37	31	14	13	5
Winter:	2	0	9	7	82

In the summer, almost 3 out of 4 respondents play several times per week (Table N6). More than 50% play at least once a week in the spring, summer, and fall, whereas 82% play less than once a month in the winter.

Table N7: Distribution of responses to the question: "Approximately, how many rounds have you played in 2013?"

%	0	1-9	10-19	20-29	30-39	40-49	50 and more
Home course:	1	10	18	23	16	10	22
On other courses (Iceland and abroad):	4	28	31	16	10	4	7

In general, respondents – quite naturally – play more often on their home course than on other courses (Table N7).

Table N8: Distribution of responses to the question: "How important are the following six causes for you playing golf?"

%	Not important	Somewhat important	Important	Very important	Don't know
1- For the sake of competition	57	21	15	7	0
2- For the sake of exercise	3	7	24	66	0
3- Social interaction with family/ friends	2	6	19	73	0
4- Social interaction with other club members	9	23	36	31	1
5- To "network" (workwise)	53	15	18	12	2
6- To enjoy nature	0	3	14	82	1

Table N8 shows which causes are important for respondents playing golf. To enjoy nature is the cause that is very important for most respondents, followed by exercise and social interaction with family and friends. For the sake of competition and to "network" are not important to more than approx. 30% of respondents.

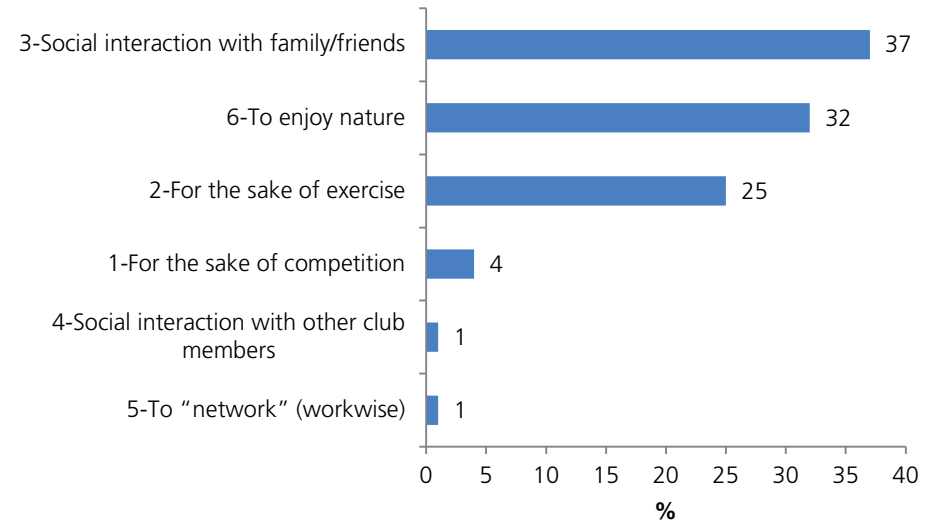


Figure N13: Distribution of responses to the question: "Which of these six causes is most important for you?"

When respondents were asked to choose the *most* important cause for playing golf, it became clear, that three causes stand out as the most important: social interaction with family and friends is the most important cause (37%), followed by enjoying nature (32%), and exercise (25%) (Figure N13). Hardly any respondents have chosen networking and social interaction with other club members as the most important cause for playing golf.

Sydsjællands golf Mogenstrup Zeeland

Figure 1. The course lay out of Sydsjællands golf course. The blue line at the of map indicate the stream Fladsåen.

The course and the club

Mogenstrup golf course is located at the outskirt of the small village of Mogenstrup in the southern part of Zeeland Denmark. The golf course was founded in 1974 has 11 employees, 1241 members includes a proshop and a restaurant with 4 employees. The course aims at being GEO certified (environmental certification) during the period 2016-2018. Additionally the golf course strive towards a multifunctional development which will include services and experiences directed towards the local society.

Figure 2. Sydsjællands golf course is located in beautiful natural surroundings 8 km from Næstved. Photo. Ole Hjorth Caspersen

The course geography and lay out

The golf course is located less than 8 km from the relatively large city of Næstved with 42 000 inhabitants. It is designed as a park course and is situated beside a small stream that mainly runs parallel to the course but also cross a few fairways. It is a 18 hole course and the total area is 57 ha which indicates that it is a relative compact course. There are a number of smaller roads at the course but only the main road indicated at figure 1 that runs through the area is open for visitors as hikers and cyclists.

In 2006 DGU (the Danish Golf Union) started to collect green accounting and since then, Sydsjællands golf coursef have produced a green accounting which should be considered as a step towards a more environmental friendly and sustainable management. During this process focus has been on the consumption of pesticides, fertilizer, water, fuel and electricity.

The landscape in this part of Denmark is dominated by hilly moraine. This landscape type includes very fertile soil which is why farming is the most prominent land use in the area. Single farms and smaller villages are scattered over the area and they are tied together of both smaller and larger roads. It is a landscape that offers many different views and experiences within relatively short distances. A number of old manors are situated in short distance from Mogenstrup. Some of these are open for the public. The golf course is situated right beside one of the largest eskers in Denmark. The esker starts in Næstved city and continues 10 km towards east and passes the golf course 8 km´s from Næstved. It is relative narrow and not broader than a couple of hundred meters.Although some parts are private owned the esker is open to the public and it constitutes an important green belt with protected nature areas as well as it also includes recreational trails of different sizes.

Figure 3. View form the Esker "Mogenstrup ås" nearby the Sydsjællands golf course. Photo: Ole Hjorth Caspersen

Wishes to a future development

Sydsjællands golf course aims to develop the management towards a higher level of sustainability. A major objective in the period 2016-2018 are different initiatives that will lead to a GEO certification (Golf Environment Organization) (http://www.golfenvironment.org/). The certification is expected to be of value to future branding of the golf course in the surrounding society and can also act as guidance for the future activities.

A GEO certification include a broad aspect of different topics, some of these are related to technical and administrative matters as education, working environment etc.. Other issues are aspects that relate to the landscape, ecology and the cultural heritage. Sydsjællands golf course has to deal with all issues in order to obtain the certification. However in this project the main focus is on a development that leads towards increased multifunctionality. A higher degree of multifunctionality involves, both environmental, ecological and recreational aspects and it is especially the recreational aspect and the related experiences that are in focus here. These aspects can be developed on the course as well as it can include the surrounding landscape.

At the course there are plans of an environmental renovation of the strongly regulated stream that runs through the golf course. Older maps from the 18th century illustrates the original uncontrolled stream that the golf course and the municipal in cooperation wishes to re-establishing by re-creating some of the former meanders. Locally on the golf course this will enhance the environmental quality as well as the recreational qualities for the players and the visitors.

In a more regional perspective the golf course is located geographically in a way that makes it possible to provide services both to the local society and to the citizens of Næstved. A former inn in the neighborhood is now closed and today the golf restaurant constitutes the only restaurant in the area. Presently the restaurant is mainly used by the members of the golf club.The economy of the restaurant would be much improved if visited more frequently by the customers/other visitors than golf players.

Næstved Municipality have developed a green plan that has been followed by an action plan (Grøn plan 2009 -21, 2009, Grøn aktivitetsplan 2011). When combined these plans defines how the municipality will develop and manage the green areas with respect to biodiversity, environment and recreation. The plans also designate a number of green corridors in the municipality. One of these is the area from the city of Næstved to the village Mogenstrup in which the golf course is situated. The overall aim of this plan is to provide better green and recreational services for the citizens in the municipality and this aim also includes measures to improve the biodiversity in the selected areas. Health aspects constitute a part of the background for this plan; too many citizens in the municipality suffer by overweight, high blood pressure and other life style related problems. The green plan aim to improve the overall green structure. The hope is that more citizens will use these areas actively and hereby reduce the number of life style related health problems.

Mapping of experience values

This project has mainly focused on how to develop the recreational experiences at the golf course. But due to its location this course could also be considered in a broader regional perspective. The golf course has the potential to be developed as a center for visits in the local area. This is why this description focuses on the regional recreational experiences. This was done by addressing the landscape that surrounds the golf course in a distance of approximately 3 km. Different data were available and due to the decision of focusing on the experiences in a regional perspective field work had to be supplemented by digital data that inform about landscape, landform, ecology etc.

These data are all available through the Danish Geodata Agency. Additional data about natural and recreational values that relate to the nearby esker were also included.

However the production of a map showing the recreational experiences has only been done for the golf course. In the following description both local and regional experiences are being described.

Pristine and untouched areas

This class is normally rather rare at intensively used areas as golf course.This is also the case with Sydsjællands golf course. But at the golf course there is a small forest and bog area that gives the visitor an experience of more pristine character. In a more regional perspective the 9 km² areas has a relatively large variation in the land cover. Farming dominates but it still possible to find several smaller refuges of more pristine and untouched character. This is most prominent along the esker especially the part NW of Mogenstrup.

Figure 4. The mapped experience values at Sydsjællands Golf course. Map made by Patrik Karlsson Nyed.

Figure 5. At the golf course a small forest and bog area gives the visitor an experience of a pristine and untuched landscape. Photo: Ole Hjorth Caspersen.

Figure 6. View to the nearby forest Stenskoven that is located on the esker next to the golf course. Photo: Ole Hjorth Caspersen.

Figure 7. A Group of Nordic walkers approaching the forest Stenskoven at Mogenstrup Esker for a short walk on the esker. Photo. Photo: Ole Hjorth Caspersen.

Figure 8. The design of the course gives the visitor a park like experience at several locations. Photo: Ole Hjorth Caspersen.

Figure 9. Commons can be found at several locations in the course. Photo: Ole Hjorth Caspersen.

Feeling of forest

Due to the park layout there are no forest on the golf course, however there is forest beside the golf course. This forest called Stenskoven (stone forest) is a private forest but there is access for visitors and there are several trails in the forest. In the region there are several smaller and a few larger forests. However relatively few has a size that facilitates an experience of being in a forest. The largest forest in the area is the one that covers the esker. The esker continues from the golf course to the city of Næstved and has a length of nearly 10 km. Marberg forest W of Mogenstrup is another large forest in the area. Within the 9 km^2 there are nearly 50 smaller forests and despite their small size they contribute to the visitor's experience of being in a varied and complex landscape. Most of the forests in the area are privately owned. Nonetheless there is public access to these forests if they are larger than 5 hectares.

Figure 10. The undulating terrain in the area and especially along the esker offers many scenic views. The photo illustrates one of the dry meadows at the esker. Photo: Ole Hjorth Caspersen.

Panoramic views, water and scenery

The park lay out of the golf course offers multiple views for both players and visitors at the golf course. The golf course follows the stream Fladså that runs

Figure 11. The many small ponds at the golf course are characterized by a high biodiversity. Photo: Ole Hjorth Caspersen.

parallel to the course and crosses the course by dividing into a number of smaller streams. Additionally there are a number of smaller ponds at the course which contributes to experience of being in a varied and diverse landscape. The golf course is located with the club house at the highest point and the course falls from this point. This location and this layout creates several scenic views. In the more regional perspective the area are poor on larger lakes and the streams that runs through the landscape are nearly all regulated due to the dominating agricultural land use. Nonetheless the landscape offer many scenic views and the visitor can follow smaller roads through the landscape that offer a greater scenic qualities and experience.

Biodiversity and land form

On the golf course there are a number of areas that are characterized by a more extensive maintenance. One of these areas is a larger area at the boundary between the golf course and the forest Stenskoven. Another area is a small combined forest and wetland area in the central part of the course. However due to the park lay out they are relatively small areas. The small ponds and lakes are characterized by clear water and several species thrives at these places. Parts of the nearby stream Fladsåen has been restored which have enhances its environmental and ecological quality. In a regional perspective there are several protected nature areas and due to the steep slopes and sandy soils that characterize the esker there are several dry meadows in the area, a relatively rare nature type in Denmark. The esker constitutes the most dominant landform, although at several places it is more or less removed due to excavation of gravel. However the area near the golf course is relatively unspoiled and it is possible to visit and study this very special landscape element. There are approximately 20 eskers in Denmark and Mogenstrup esker is one of the largest in the country.

Cultural history

The golf course is located at former farmland and older maps form the 17th century show the location of the former farm. Today there is nothing left of the former farm and there are no other historical relicts on the golf course. In the area around the golf course there are several remains from the prehistoric time such as burial mounds, but many of these remains are not visible. Old stone and earth dikes are seen at several places in the vicinity of the golf course. Mogenstrup church from 1297 is mostly known for a holy spring that still can be seen near the church as a small fountain.

Activity and challenge

Beside the traditional use as a golf course, Sydsjællands golf club has opened the central trail for visitors. This makes a crossing of the golf course possible and the visitor has the possibility to enjoy the scenic surroundings. The golf course has also been opened temporally for Nordic walkers and other exercisers. The area in relation to the par 3 course has potential for other use, for example in relation to the nearby school.

The surrounding landscape offers a number of challenges and possible activities. Some of these are related to the esker that runs from Næstved to Mogenstrup. A short nature trail starts at the esker and runs in the river valley of the stream Fladsåen. The area and especially the esker attract many exercisers as well as nature interested visitors. The landscape around the golf course also offers many challenges due to its undulating and hilly character, but presently

there are not many ongoing activities in the area. The regional bicycle roads (no. 54 and 88) crosses the area nearby the golf course.

Figure 12. Sydsjællands golf course has a number of different service facilities amongst these is the restaurant. Photo: Ole Hjorth Caspersen.

Service and gathering

The club house and the related buildings offer a number of facilities. The restaurant/cafe has a number of offers on the menu and can be reserved for larges parties up to 120 persons. Beside the restaurant the club house has a number of rooms that could perhaps be rented by local organizations for meeting activity as well as it has rest rooms and shower facilities. Additional toilets are located near hole 15. There a several benches at the course and near hole 10 there are table and benches.

The regional landscape is characterized by relative few service facilities. There are a number of bus stops around Mogenstrup and also different shops. There are also signs that illustrate the two regional bicycle routes. A quick look at the national outdoor web database (http://www.udinaturen.dk/) illustrates that there are only very few service oriented facilities in the regional landscape around the village of Mogenstrup.

Experience values in the area

Due to the park lay out the golf course constitutes a sharp contrast to the surrounding farming landscape and as such the park lay out will probably comply with the expectations that several visitors have to an easy and convenient open air experience. The golf course provides good trails and facilities such as a restaurant and toilets. Likewise are there benches that can be used at several places at the golf course.

The mapping of experience values on the course illustrates that at the golf course there are good possibilities to enjoy several of the 7 experience values that were included in the mapping process. There is even a small forest-wetland area that stands out with a relative pristine character but more abundant

are forest experiences, panoramic views and biodiversity. These experience values appeal to a lot of visitors. However there also are limitations for a broader use. One is the relatively few trails that can be used bynone golfers in the area. Another is the safety problem that relate to the first 200 meters of the large central trail that cuts the course in two. Here the trail runs next to the driving range which creates a large risk for the visitors of being hit by a golf ball.

The conclusion of the mapping process is that despite the relative compact layout of the golf course there is an unused potential for a further recreational development on the course. The major recommendation is to address this potential and include it in the forthcoming planning procedure for reestablishment of the stream that runs through the area. This will demand a close cooperation with the municipality. Likewise the par 3 course could be used to a greater extent and include other uses than golfers. The use of this course could serve as an active link toward the local society and not least the nearby school.
The course serves as natural point for gathering after the local inn has been closed: The golf club could develop this function even further than it is today. Due to the geographic location in the outskirt of the village Mogenstrup and the location less than 8 km from the larger city Næstved, it could be developed into a natural place for gathering and for visits in the local area. A development in this direction would comply very well with the green plan developed by the municipality.

The result of the regional analysis of experience values indicates that the regional landscape in the vicinity of the golf course only partly is developed from a recreational and leisure perspective. Nonetheless are there several localities in the regional landscape that carries a large recreational potential despite that the dominant land use is farming. The analysis indicates that the existing recreational facilities mainly can be found along and on the esker, whereas the landscape outside the esker presently only has a few facilities. The regional analysis also indicates that in this landscape there is the possibility to experience several different nature types and likewise are there several viewpoints and panoramic views. The many different biotopes, the soft undulating landscape combined with the panoramic views invites to bicycle trips in the area. As well as hiking trips along the esker. There are two regional bicycle roads nearby the golf course.

The “Green plan” of Næstved Municipality has designated a large part of this landscape as a future green area and the aim is that this landscape should be developed both from an environmental and a recreational perspective. Hence the potential experiences in the landscape and on the golf course combined with the aim of the Green plan create a well-defined frame for the future multifunctional development of the golf course and its relation to the surrounding landscape.

Suggestions for future multifunctional development

Sydsjællands golf course constitutes an important part of the local society but there are still much room for further improvement and integration. The location of the golf course combined with the esthetical park lay out could be utilized in a future development. This development could focus on providing

multifunctional services and functions. In the following part a number of suggestions and recommendations are given.

Figure 13. The boundary between the golf course and the stream Fladsåen, this part could be converted to a meandering stream and a small trail could connect with the existing trails making a roundtrip on the course possible. Photo: Ole Hjorth Caspersen.

Actions proposed at Sydsjællands golf course:

Based on the mapping analyses a number of recommendations for a future multifunctional development could be stated.

Local actions on the golf course

- A future restoration of the heavily regulated Fladså will probably demand a reconstruction of Hole 11, 12 and 13. This could be used as an opportunity to establish an extension of the existing trail system along the small stream that would make a 20 min round trip on the golf course possible for visitors.
- The restaurant should to a greater extent appeal to visitors and the local organizations as well as to golfers. Contact could be made to the organization of Nordic walkers and special offers could be made also to other groups in order to increase the number of users. The golf course also offers facilities as showers and toilets to be used by the organizations.
- The golf course could offer a location/office for common use for the local organizations in the area.
- Thematic tours for bird- and nature interested visitors could be arranged in the season and finish or start at the restaurant. In june there several nightingales at the golf course , and special nightingales tours could be arranged. The golf course is situated beside one of the largest eskers in Denmark which could appeal to the development of special guided tours with focus on geology and landform.
- Improved cooperation with the nearby school based on a recreational use of the par 3 golf course could be made. There are good possibilities for outdoor learning based on the school reform that started in summer 2014. Further this would comply with the municipal health policy (Sundheds politik 2014-2017).
- Contacts should be made to the municipality regarding a recreational link to the hiking and trail system at the esker. The golf course could be develo-

ped to act as a local center that includes the experiences at the esker. This development would comply with the aim and intention that characterize "The green plan". (Grøn Plan 2009)

Regional actions

- In order to act as a center for visits in a more regional perspective the golf course should develop and offer a number of special facilities.
- The main office could offer brochures and material that inform of the local area. This includes information of special bicycle roads in the area.
- A number of suggestions for hikes, tours and bicycle trips in the region should be developed and the material /maps should be made available at the golf course.
- The homepage could be developed to inform about multifunctional options and possibilities from a recreational perspective.
- It is suggested that the golf course invests in a number of bicycles for rental; some of these should be electric in order to appeal to different age groups. Rental could be combined with a special offer from the restaurant.
- In cooperation with the municipality a link should be made to the national bicycle route no 58 and 88. The golf course could serve as a place for a short stop and lunch point.

Figure 14. The rolling hills and the many small forests create several scenic views combined with the Peace full roads this creates ideal settings for bicycle trips in the region. Photo: Ole Hjorth Caspersen.

References

Danmarks kirker.
http://danmarkskirker.natmus.dk/praestoe/mogenstrup-kirke/

Grøn Plan 2009-21 (2009)
Næstved Municipality 84 p. www.naestved.dk/gronplan

Grøn Plan 2009-21 (2009) bilag.
Næstved Municipality 40 p.

Grøn aktivitets plan (2011).
Næstved Kommune. 29 p.

Sundheds politik 2014-2017 Næstved.
Næstved Kommune, 16 p.

Golf players in Denmark

Sydsjællands Golfklub Mogenstrup

To get the viewpoints of the golf players at Sydsjællands Golfklub regarding multifunctional initiatives, a web based questionnaire was developed. The questionnaire was identical for all five golf courses/clubs included in the project. However, specifically for Sydsjællands Golfklub an extra section regarding the viewpoints on a number of new concrete ideas for a wider utilization of the club house facilities were included.

Contact to the respondents was made through the homepage of the club/course, and in newsletters. During 2014 a total of 284 persons have opened the survey, and 183 have for sure read one or more of the questions. 105 respondents completed the questionnaire by answering all questions. The following analysis is based on these 105 respondents.

Summary of selected results – for the full, balanced results, please see the specific tables and figures following this brief overview:

- There are more positive than negative respondents towards other activities on the golf course than golfing itself – especially if it takes place in the winter time.
- A majority of the respondents find it important that the golf course is managed so it can contribute as habitat for the natural flora and fauna.
- Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 70% are positive/very positive, ad 11% are negative/very negative.
- Out of 34 different activities one could imagine taking place at a golf course, the ones that most respondents (50% or more) find best suited to fit alongside the golf game are: walking on the course paths/roads, bird watching, mini golf, boule/petanque, Nordic walking, and running (exercise) – and 50% or more found the following activities worst suited: Dog training (obedience training), flying model planes, cross-country skiing in the winter, dog training (agility course), exercise with permanent training equipment, tobogganing, kite-flying, and orienteering in the spring.
- Among the present guests at the golf course, dog walkers and joggers are the categories that most respondents find reducing the pleasure of playing golf.
- 2/3 of the respondents found that developing the club house into a local tourist office would be a good/very good idea – 1/6 found it a bad/very bad idea.
- The majority, approximately 3 out of 4 of the respondents partly or strongly agree in that new initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport – and thereby get more members.
- A short general characterization of the respondents: 67% are older than 50 years and 9% younger than 40 years; 82% are males; 62% have a handicap

between 16 and 35.9; 21% have played golf 5 years or less and 25% have played more than 15 years; social interaction with family and friends are the most important cause for playing golf for 46%, exercise is most important for 23%, social interaction with other club members is most important for 16%, the competition is most important for 13%, and finally enjoying nature is most important for 2%.

Table S1 shows the distribution of respondents' level of agreement with 9 statements about different aspects of multi-functionality in relation to golf courses. A large majority, app. 3 out of 4 respondents, partly or strongly agreed that initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport, and thereby get more members. However, using the golf course itself for this purpose had less support, as 43% of respondents partly or strongly disagreed with this being a good idea.

Table S1: Distribution of responses to the question: "Please state how much you disagree or agree with each of the following 9 statements. When you answer please think of the golf course you are most attached to – your home course."

%	Strongly disagree	Partly disagree	Neither /nor	Partly agree	Strongly agree	Don't know
1. If efforts were made to have more visitors and activities in the *club house*, it would be a good way to get more people in contact with the golf sport and thereby get more members.	9	8	5	33	44	1
2. If efforts were made to have more visitors and activities in the *club restaurant,* it would be a good way to get more people in contact with the golf sport and thereby get more members.	8	4	3	35	49	1
3. In general, I think it would be positive, if the social life is increased by the club house/restaurant being used by other people than golfers.	10	7	8	24	50	1
4. If efforts were made to have more visitors and activities on the *golf course itself*, it would be a good way to get more people in contact with the golf sport and thereby get more members.	17	26	10	26	19	2
5. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not affect *security*.	25	17	6	21	31	0
6. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not *disturb* my golf play.	21	19	6	22	30	2
7. More of my family, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	28	16	22	16	8	10
8. More of my friends, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	23	15	19	22	6	15
9. I myself would like to use the golf course for visiting nature and other activities than playing golf.	26	23	19	18	12	2

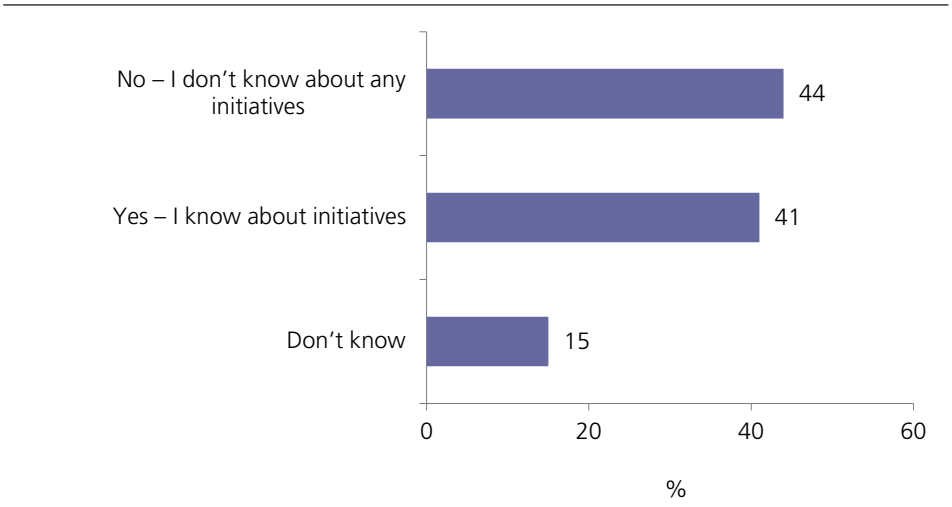


Figure S1: Distribution of responses to the question: "Do you know if any initiatives have been made on your home course that allows other people than golf players to use the course, club house and/or restaurant?."

44% of respondents didn't know of any initiatives on their home course that allowed other people than golf players to use the course, club house and/or restaurant (Figure S1). 41% knew about initiatives.

Table S2: Distribution of responses to the question: "What would your overall attitude be, if new initiatives towards other activities than golfing itself should become a reality on your home course?"

	Very negative	Negative	Neither /nor	Positive	Very positive	Don't know
Other activities, only in the *summer:*	16	20	14	36	12	2
Other activities, only in the *winter*:	5	5	18	43	30	1
Other activities, *all year:*	10	18	19	37	14	3

Most respondents had positive attitudes towards the possibility of new initiatives on their home course toward other activities than golfing (Table S2). The largest percentage of positive and very positive attitudes was in relation to activities only taking place in the winter.

Table S3 shows that a large majority of respondents believe it is important or very important that golf courses are designed and managed, so they can contribute as habitat for natural flora and fauna. More than half of the respondents found it important or very important that pesticides are no longer used on the golf course in five years.

Table S3: Distribution of responses to the question: "When talking about "multi-functional" golf courses, one often also thinks about the cultural, natural, and environmental conditions. When you answer, please think of the golf course you are most attached to – your home course."

%	Not important	Somewhat important	Important	Very important	Don't know
How important do you believe it is that …					
… an extra effort is made to improve living conditions for the natural **flora** on the golf course?	7	21	35	35	3
… an extra effort is made to improve living conditions for the natural **fauna** on the golf course?	6	17	33	42	3
… the golf course is **designed**, so it can contribute as habitat for the natural flora and fauna?	7	20	38	33	4
… the golf course is **managed**, so it can contribute as habitat for the natural flora and fauna?	6	19	41	32	4
… information is given about flora and fauna to other visitors?	15	19	31	28	7
… the golf course is managed in an environmentally friendly way?	5	15	38	40	3
… in five years, pesticides (weed, insect- and fungi control) are no longer used on the golf course?	10	18	29	32	11
… possible cultural or historic monuments are preserved on the golf course?	6	6	28	55	7
… information is given regarding possible cultural or historic monuments to other visitors?	11	17	33	36	3

Overall, a majority of respondents believe that "multi-functional" golf courses, including cultural, natural, and environmental conditions, are important to very important.

Seven out of ten respondents have an overall positive or very positive attitude towards potential new initiatives on their home course, with more focus on cultural, natural and environmental conditions (Figure S2).

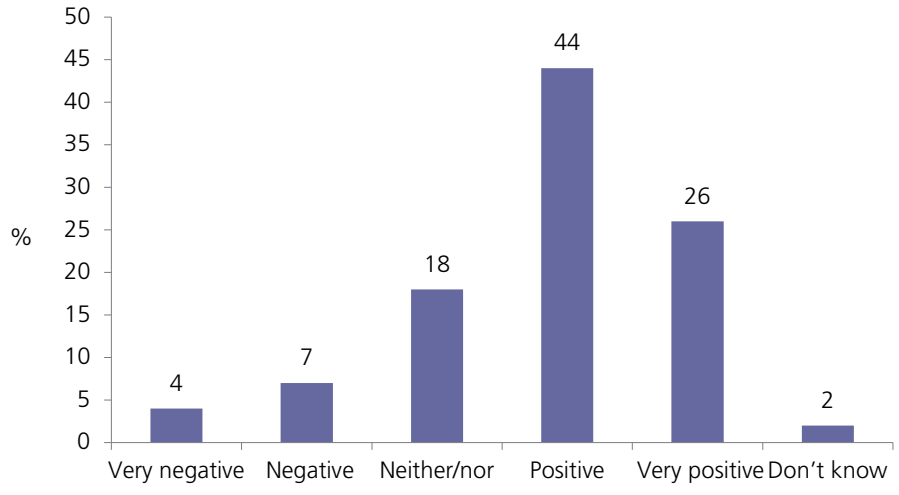


Figure S2: Distribution of responses to the question: "What will your overall attitude be, if new initiatives towards more focus on cultural, natural and environmental conditions would become a reality at your home course?."

When asked about which activities would be worst suited to fit alongside the golf game, dog training, flying model planes, skiing are the activities most respondents believed would be worst suited (Figure S3). Among the activities, least respondents chose, are walking, boule/petanque, and model boat sailing in water holes.

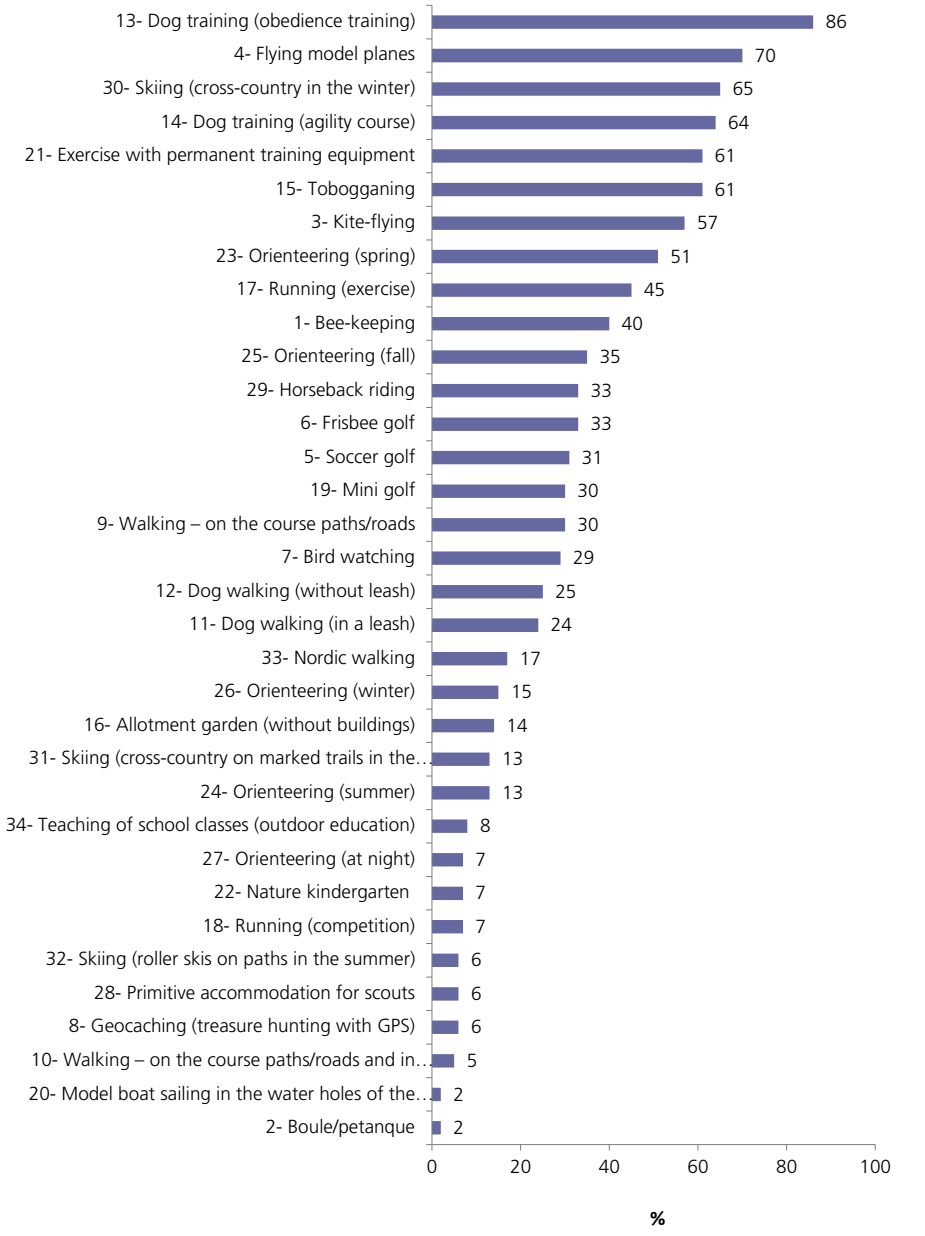


Figure S3: Distribution of responses to the question: "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing."

Figure S4 shows the distribution of answers, when respondents were asked to choose the three worst of the 10 worst suited activities. In this case, dog walking (without leash) is the activity that most respondents (20%) find worst suited to fit alongside the golf game, followed by horseback riding, flying model planes, and bee-keeping.

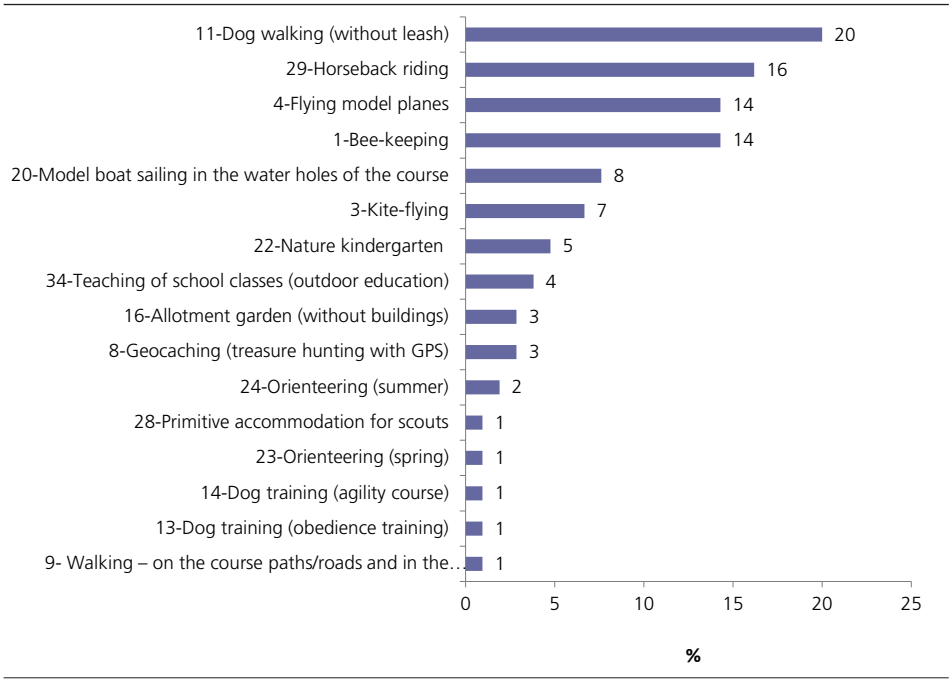


Figure S4: Distribution of responses to the question: "Which 3 of these 10 do you find worst suited to fit alongside the golf game?"

Walking on course paths and roads is the activity that most respondents choose, when asked about, which 10 activities are best suited to fit alongside the golf game (Figure S5). Bird watching is the next-best activity, and mini golf, boule/petanque and Nordic walking are also among the best suited, according to the respondents.

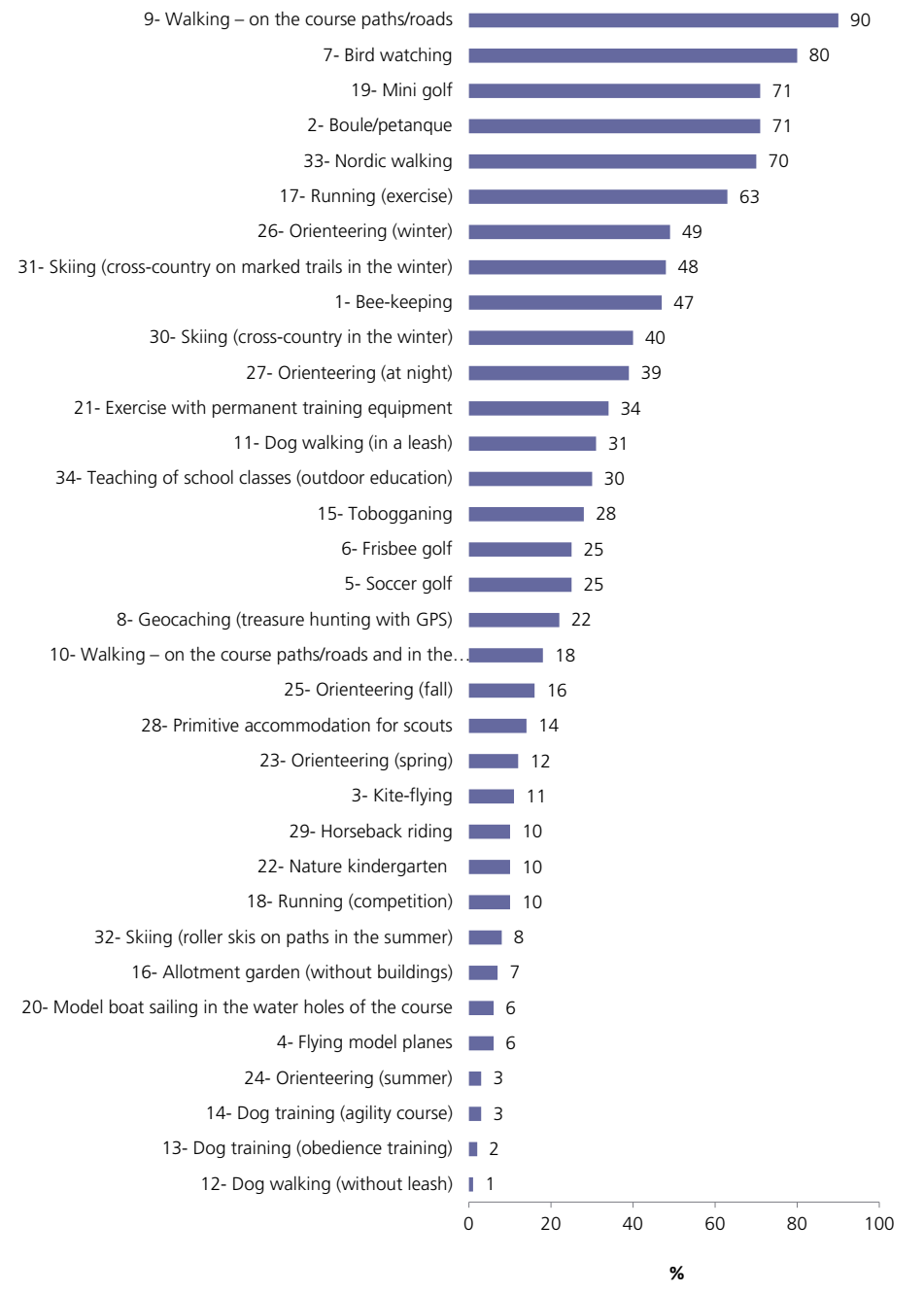


Figure S5: Distribution of responses to the question: "We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game".

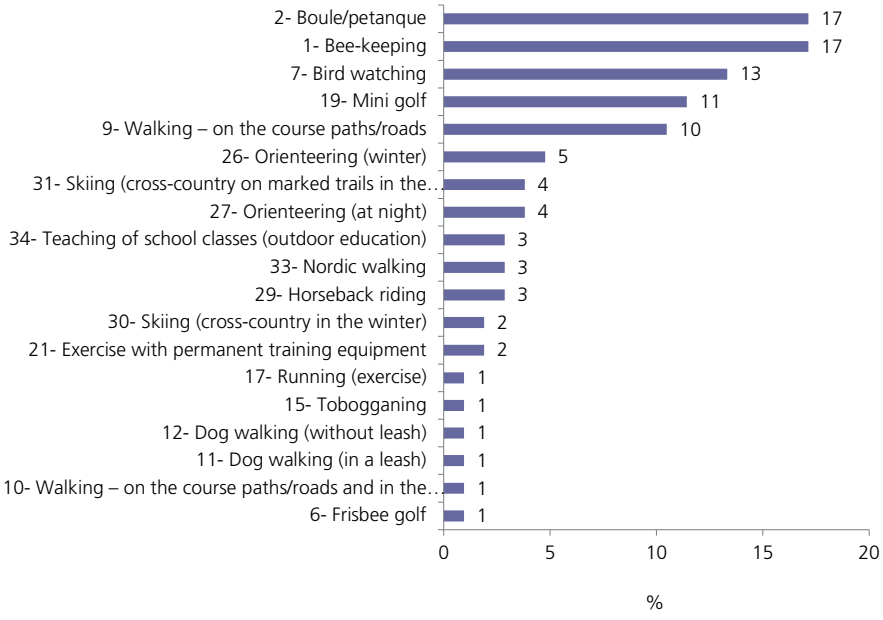


Figure S6: Distribution of responses to the question: "Which 3 of these 10 do you find best suited to fit alongside the golf game?"

When asked to choose the 3 best activities out of the 10 best, boule/petanque and bee-keeping are the activities that most respondents (17%) find best suited (Figure S6). The activities, fewest respondents find best suited – among the 10 best – are frisbee golf, dog walking and running, among others.

Table S4: Distribution of responses to the question: "Has meeting other guests within the previous year (2013) had any influence on your pleasure of playing golf at Sydsjælland Golf Club's course?"

	Have NOT met this type of guest	Reduced my pleasure a lot	Reduced my pleasure a little	Made no difference	Increased my pleasure a little	Increased my pleasure a lot	100
1. Bird watchers	(83)	2	0	12	2	1	100
2. Dog walkers	(52)	7	8	28	5	0	100
3. Nordic walkers	(52)	3	3	34	6	2	100
4. Joggers	(33)	8	7	45	4	3	100
5. Other walking guests	(20)	5	6	56	10	3	100
6. Mountain bike riders	(76)	4	6	13	0	1	100
7. Other cyclists	(56)	6	8	29	2	0	100
8. Horseback riders	(90)	4	2	4	0	0	100
9. Skiers	(91)	2	1	6	0	0	100

Meeting other guests on the golf course does not generally seem to reduce respondents' pleasure of playing golf (Table S4). The guests that have reduced respondents' pleasure the most are dog walkers and joggers, as 15% of respondents answered that dog walkers and joggers had reduced their pleasure a little or a lot. 13% of respondents answered that meeting other walking guests increased their pleasure a little or a lot.

Skiers are the type of guests that most respondents – quite naturally – have

not met (91%), followed by horseback riders (90%). Only 20% have not met other walking guests – figures that are important to have in mind, when evaluating the viewpoints of the responding golf players.

Table S5. Distribution of responses to the question: "Would your pleasure be reduced to the same degree if …" (This question was only forwarded to respondents that had a reduced pleasure of playing golf, cf. Table S4).

%	No – it would help a lot	No – it would help to some degree	Neither/nor – would not make a difference	Yes – it would not help	Don't know
… dog walkers only walked on specifically marked paths?	27	13	20	27	13
… dog walkers only stay in a separately marked area?	27	20	20	20	13
… Nordic walkers only walked on specifically marked paths?	17	0	33	33	17
… joggers only ran on specifically marked paths?	13	13	27	20	27
… mountain bike riders only cycled on specifically marked paths?	10	10	30	40	10
… mountain bike riders only cycled in a specifically marked area?	10	10	30	41	9
… cyclists only cycled on specifically marked paths?	21	7	29	21	22
… horseback riders only rode on specifically marked paths?	17	0	33	33	17
… skiers only skied on specifically marked routes?	0	0	33	33	34

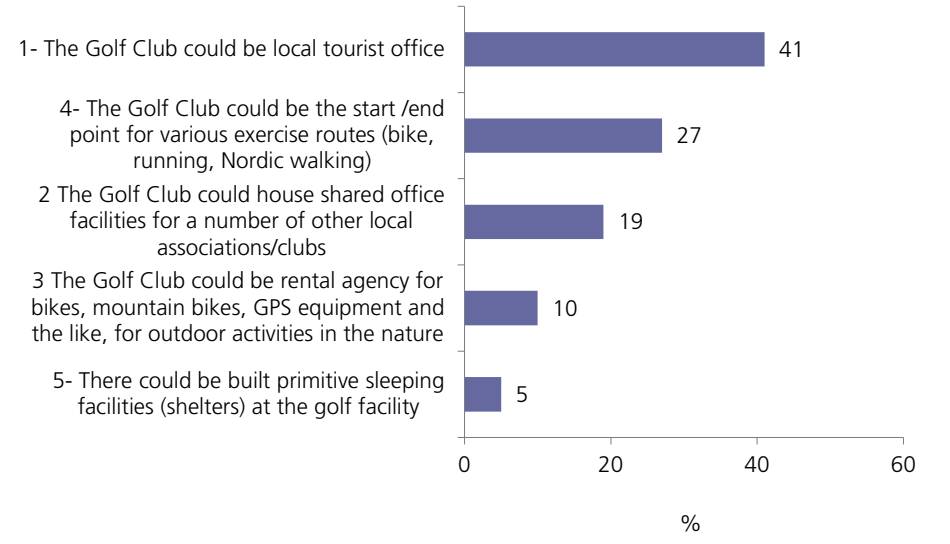
The respondents, who had experienced a reduced pleasure of playing golf due to other guests, were asked, if their pleasure would be reduced to the same degree, if certain restrictions were put on the other guests' behaviour (Table S5). The general pattern is that the suggested restrictions would not make a difference for the respondents. However, if dog walkers stayed in specifically marked areas or on specifically marked paths, they would not reduce some respondents' pleasure as much.

Table S6: Distribution of responses to the question: "One can imagine a variety of new activities in connection with a golf course where its club house facilities are utilized more widely than today. As a golfer in Sydsjællands Golfklub, what do you think of the following ideas?"

	Very bad idea	Bad idea	Neither/ nor	Good idea	Very good idea	Don't know
1- The golf club could be a local tourist office	10	6	16	49	17	2
2 The golf club could house shared office facilities for a number of other local associations/clubs	9	10	20	47	12	2
3 The golf club could be a rental agency for bikes, mountain bikes, GPS equipment and the like, for outdoor activities in nature	12	19	12	37	14	4
4- The golf club could be the start /end point for various exercise routes (bike, running, Nordic walking)	11	9	15	38	24	2
5- Primitive sleeping facilities (shelters) could be built at the golf facility	31	25	15	13	10	6

Table S6 shows that more than 50% of respondents believe it is a good or very good idea that the club house facilities could be used as a local tourist office, share office facilities for local associations/clubs, rental agency or start/end point for various exercise routes. At the other end of the scale, 50% believe that primitive sleeping facilities are a bad or very bad idea.

Figure S7: Distribution of responses to the question: "Which of these five possible activities do you think best of all could be accommodated at Sydsjællands Golf Club's facility?"



When asked, which of the five possible activities would be best suited at Sydsjællands Golf Club, the majority answered a local tourist office (Figure S7), and only 5% answered primitive sleeping facilities. When asked about which of the five possible activities would be worst, the responses are in line with what is shown in Figure S7 being best, as a majority of respondents find "primitive sleeping facilities" as the worst activity in connection with their home golf course (60%) and a minority (6%) finds hosting the "local tourist office" the worst idea.

Back ground information about respondents

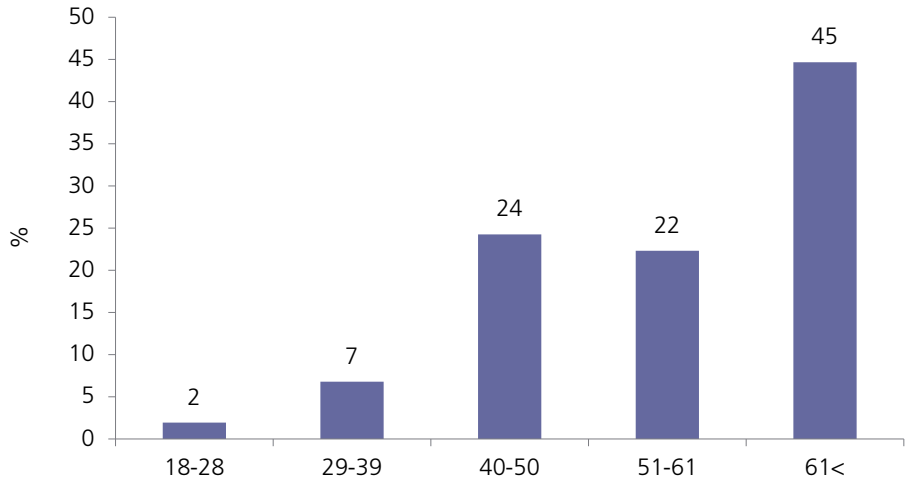


Figure S8: Distribution of responses to the question: "How old are you?"

Figure S8 shows that 91% of respondents are 40 years or older, and almost half of respondents are 61 years or older.

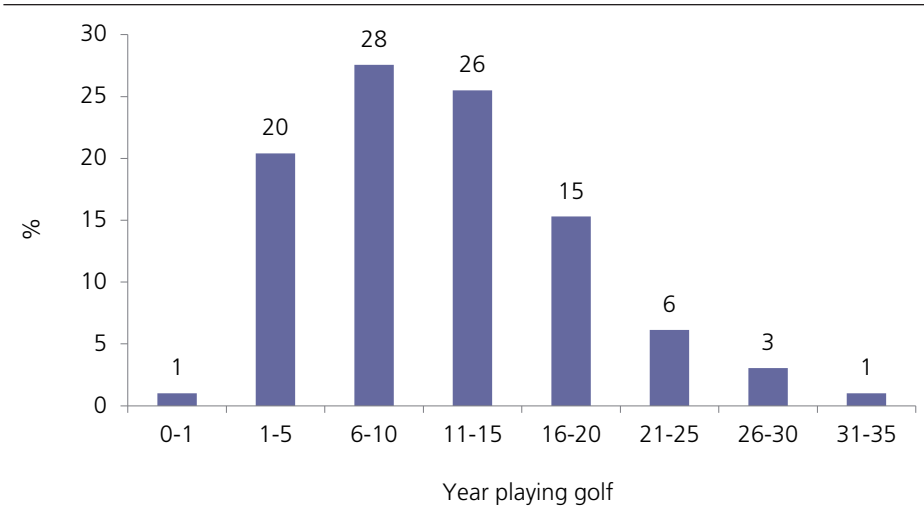


Figure S9: Distribution of responses to the question: "How many years have you been playing golf?"

More than half of the respondents have been playing golf between 6 and 15 years, and 20% have played less than five years (Figure S9).

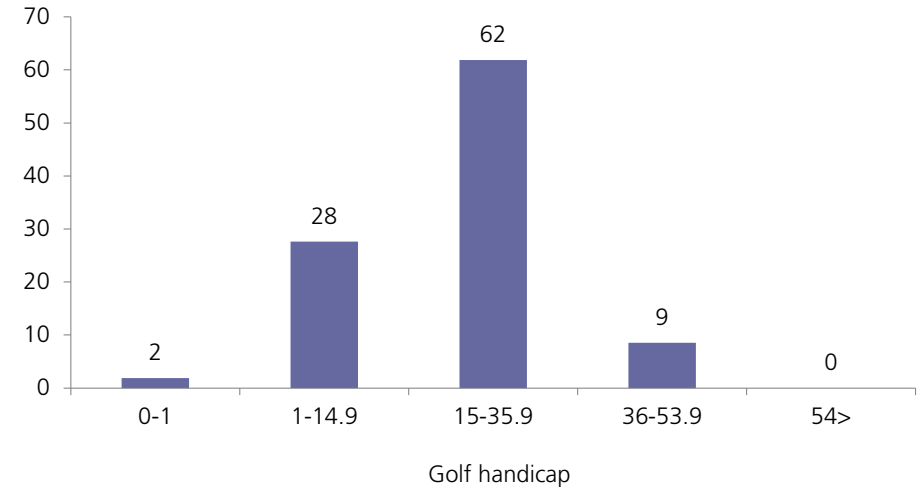
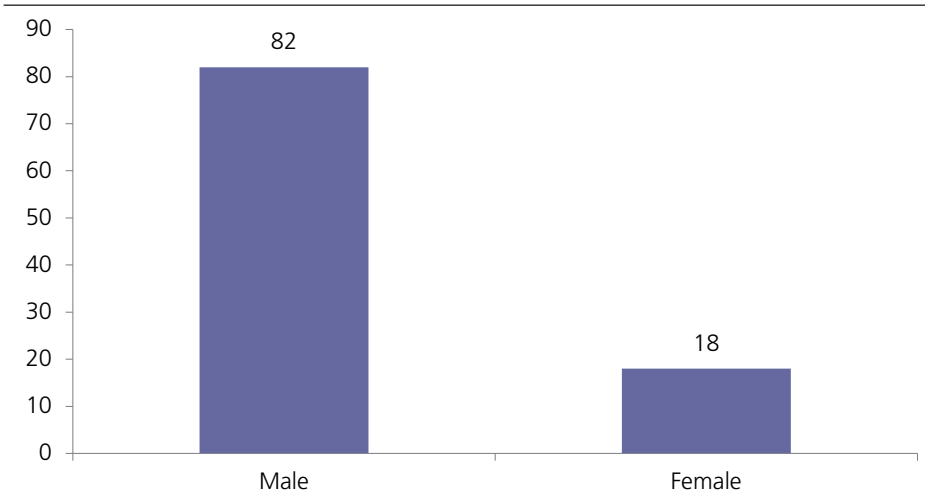


Figure S10: Distribution of responses to the question: "What is your golf handicap?"

Figure S10 shows that more than half of the respondents have a golf handicap somewhere between 15 and 35.9. Relatively few have a handicap higher than 36.

Figure S11: Distribution of responses to the question: "What is your gender?"



A large majority of respondents are male (Figure S11).

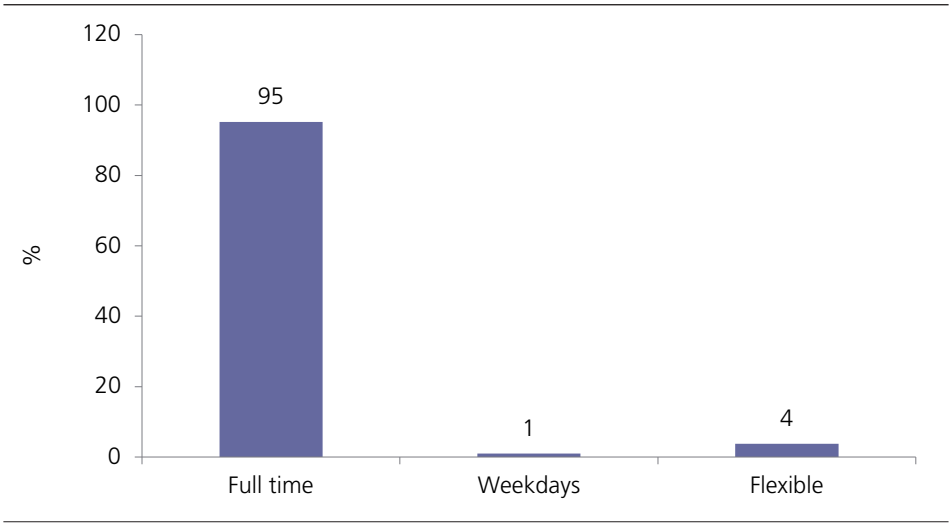


Figure S12: Distribution of responses to the question: "What kind of membership do you have in Sydsjælland Golf Club?"

Most respondents (95%) have a full time membership of Sydsjælland Golf Club (Figure S12).

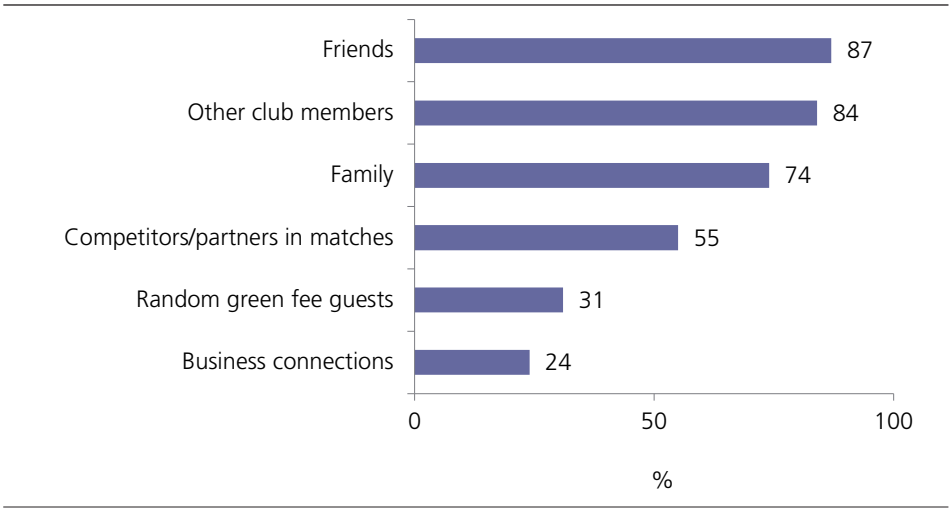


Figure S13: Distribution of responses to the question: "Who have you played golf with over the previous year (2013)?"

Figure S13 shows that most respondents play with friends, other club members and family. On average respondents play with three to four different groups of players over the year (sum of percentages in Figure S13 is 355). About one in four plays with business connections.

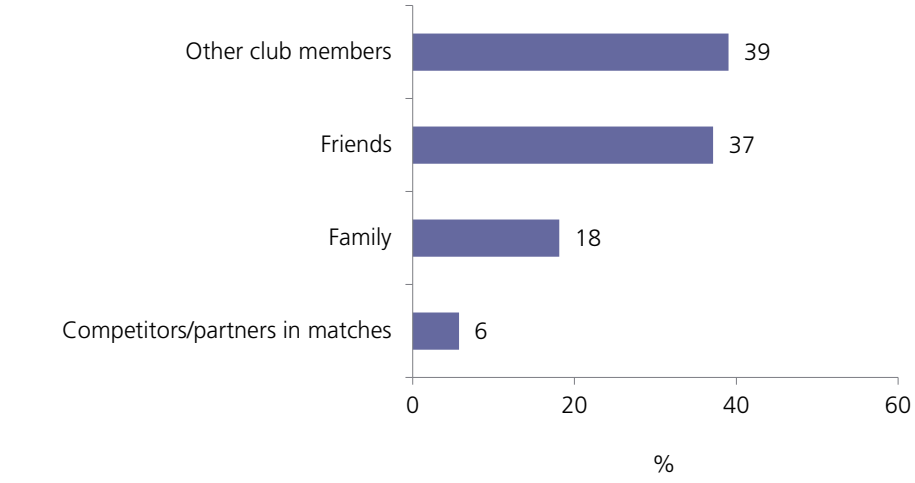


Figure S14: Distribution of responses to the question: "Who did you play with most often?"

When asked, who respondents most often play with, the majority answers other club members (39%) or friends (37%) (Figure S14).

Table S7: Distribution of responses to the question: "How many times, approximately, have you played during the previous year (2013)?"

%	Several times per week	Once a week	2-3 times per month	Once a month	Less than once a month
Spring:	54	24	18	2	1
Summer:	68	18	12	0	1
Fall:	52	23	17	6	1
Winter:	8	14	12	10	55

More than 50% of respondents play several times per week in the spring, summer, and fall, and less than once a month in the winter (Table S7). In the summer almost 7 out of 10 respondents play several times per week.

Table S8: Distribution of responses to the question: "Approximately, how many rounds have you played in 2013?"

%	0	1-9	10-19	20-29	30-39	40-49	50 and more
Home course:	0	3	14	21	20	14	28
On other courses (Denmark and abroad):	5	47	31	12	1	1	3

Table S8 shows that, in general, respondents – quite logical – play more often on their home course than on other courses. More than 60% of respondents have played 20 times or more on their home course in 2013, whereas 95% have played less than 20 times on other courses.

Table S9: Distribution of responses to the question: "How important are the following six causes for you playing golf?"

%	Not important	Somewhat important	Important	Very important	Don't know
1- For the sake of competition	21	36	28	15	0
2- For the sake of exercise	3	17	37	43	0
3- Social interaction with family/friends	2	8	30	60	1
4- Social interaction with other club members	3	18	38	41	0
5- To "network" (workwise)	59	24	11	4	2
6- To enjoy nature	6	30	44	20	1

Social interaction with friends and family is a very important cause for playing golf for 60% of respondents (Table S9). Exercise and social interaction with other club members are also considered important or very important causes for a majority of respondents. To "network" and for the sake of competition are considered not important or somewhat important for a majority of respondents.

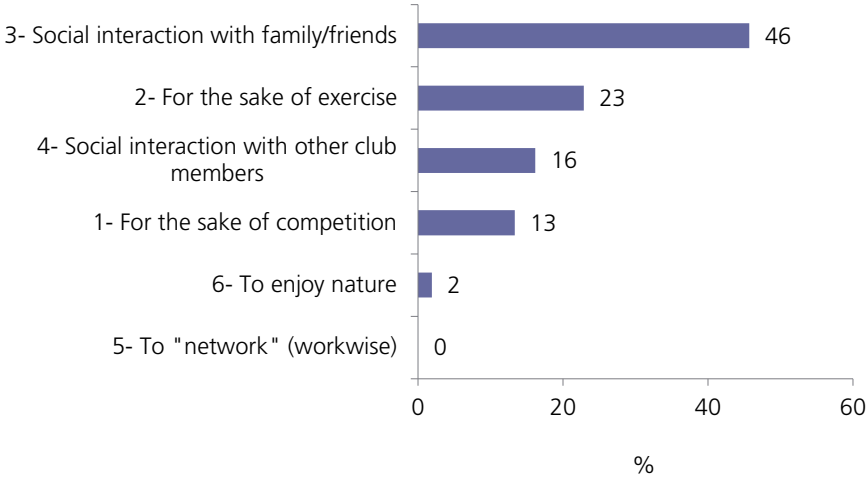


Figure S15: Distribution of responses to the question: "Which of these six causes is most important for you?"

When the respondents were asked to choose the *most* important cause for playing golf it became very clear, that social interaction with family and friends is the most important cause (46%) (Figure S15). Exercise is the most important cause for 23%, whereas no respondents have chosen networking as the most important cause for playing golf.

Gamle Frederikstads golfklub (Old Frederiksstads golf course)

The course and the club

Frederiksstad golf club is a privately owned club (Frederiksstads Golfpark AS) that was established in 2000. It has an 18 hole main course, a 9 hole pay and play course and a small course for fotboll or soccer golf. It is located just outside the fortified city of Frederiksstads that was founded the by the Danish king Frederik the II in 1567. In 2004 the municipality of Frederiksstad launched a plan called "Aktivitetsbyen Gamle Frederiksstad" (Old Frederiksstads activity city) and the golf course was a part of this plan. In 2005 Bøckmann Eiendom AS overtook the restaurant and became part owners of Frederiksstads Golfpark AS.

In 2008 the municipality provided the planning background for an enlargement of the golf course and they offered economic support to the course. However more economic support was necessary since it was not possible to attract local banks and finance institutes.Instead the project was supportet by Bøckmann Eiendom AS that took over the stock maority..

The course have thorugh It existence had a close cooperation with the municipality. This coorporation started when the course was founded. Frederiksstad municipality has a wish to develop the city to a center for activities which includes the golf course. This is why the approach for mapping of recreational

Figure 1. 14 ponds and lakes are located on the golf course. Photo: Pål Høyum

Figure 2. It is an open course with a forest on one side and Gamle Frederiksstad to the other side. Photo: Pål Høyum

Figure 3.Gamle Frederiksstad is an unique example of a historic fortified city and it is nearly untouched by modern development. It comprises several houses from the 17th and 18th century. Photo: Ole Hjorth Caspersen.

Figure 4. The fortified city is intact and the level of maintanace is very high and give the visitor a unique historical experiece. Photo: Ole Hjorth Caspersen.

facilities in the case of Gamle Frederiksstads golf course has adopted a regional perspective. Hence focus in this analysis is mainly on factilities and possible experiences in the region in which the golf course is located.

The idea for multifunctionel development departures in the wish of cooperation with other institutions and organisations in the area. The objective is to screen the possible experiences in a regional perspective and to complement an existing plan for multifunctional development that is being developed by the golf club. The main idea is that common branding of Gamle Frederiksstad as an activity center that includes the golf course also will attract more players to the golfcourse.

The course geography and lay out

The course is located on a relatively flat area with Frederiksstad on one side and a larger forest on an elevated area on the other side. It is an open course and only smaller plots with forest are located on the course as well as there are only few areas on the course with park character. On the other hand there are several meadows, streams and 14 smaller lakes and ponds. The location next to the fortified city of Frederiksstad is unique and this location makes the course easy available for many potential users.

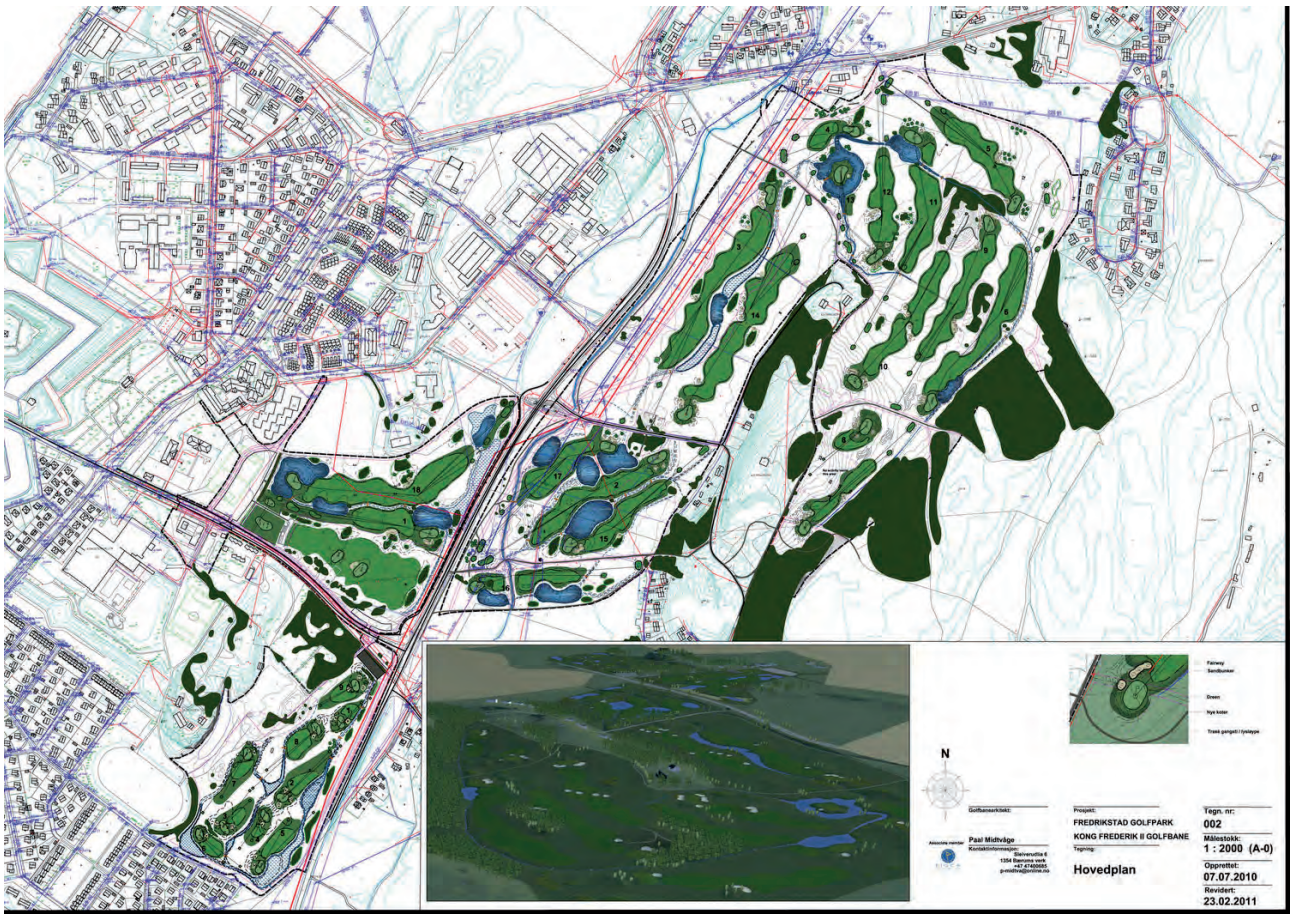


Figure 5. The course design.

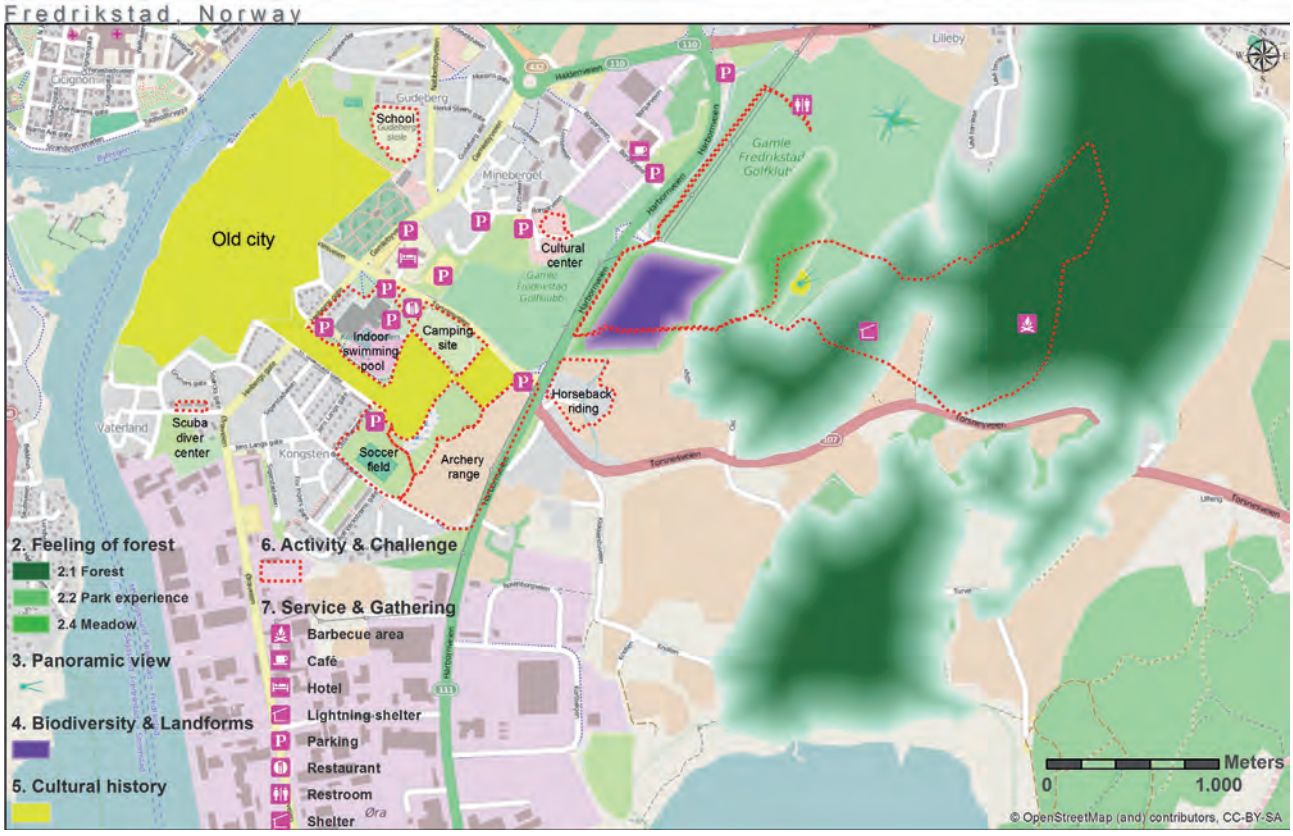


Figure 6. The course and recreational experiences in a regional perspective. (Map by Patrik Nyed Karlsson)

Mapping of experience values

The course is situated in the urban fringe of Fredriksstad and in this area there is a large number of institutions and associations which makes the mapping of the golf course in a regional perspective most relevant. Therefore it was decided that the mapping of the recreational experiences for Old Fredriksstad golf course first and foremost should focus on the regional aspect. This is due to the hypothesis that an overview of the leisure facilities in the area would be useful in the development of greater multifunctionality in the area. The golf course would benefit from such a development and its importance in the area would increase.

Pristine and untouched areas

The course is located relatively close to a large road and to a power line. Traffic noise and visual influence from the high voltage power line explains why there are no pristine and untouched areas on the course. But it is possible to find such areas relatively close to the course. The course is not far from the coast where such areas can be found and even in the nearby forest there are smaller plots that could be defined as relatively untouched.

Feeling of forest

The course is designed as an open course without many trees but the forest next to the course offers a possibility to experience the feeling of being in a forest. A trail leads through the forest and a number of clearings offer the visitor a chance to enjoy the forest in different ways.
Most of the course can be characterized as meadow although some areas enable the visitor to enjoy a park like experience.

Figure 7. A park like experience can be found a few places on the course. Photo: Pål Høyum.

Panoramic views, water and scenery

Due to a number of small hills on the course the visitor can get a panoramic view over the course at several places as illustrated in figure 1 and 2. This experience is also possible in the hilly terrain that surrounds the course. From the fortification next to the golf course the panoramic views are especially good.

Biodiversity and land form

The large number of ponds and lakes create an interesting habitat. Smaller streams run through the area and there is an interesting bird life. The biodiversity would probably be improved by further increase of the habitat quality.

Cultural history

The location of the course next to Old Fredriksstad town (Gamle Fredriksstad by) is outstanding. It is the best preserved fortified city in Scandinavia. The town was founded by the Nordwegian/Danish king Frederik the II in 1567. Until recently the town was used for millitary purposes and many of the houses were originally build in the 17th and 18th century. But due to the long military use there has been no modern development of the old city. A visit to this part of Frederiksstad will enable the visitor to have a unique experience of the present time depth of the area. From the golf course there is a spendid view to the old fortifications especially the Kongsten fort that are located in front of Old Frederiksstad. The fortified old city offer a large number of small shops and cafes and restaurants and the historical perspective is very visible here. On the course there are several historical remains, a military graveyard, the first brewery in Frederiksstad and the Kongsten Fort are some of the important historical remains on the course.

Figure 8. Part of the old city is charcterised by woodden houses from 17th and 18th century. Photo: Ole Hjorth Caspersen.

Figure 9. There is a good panoramic view over the nearby landscape from the fortified town. Photo: Ole Hjorth Caspersen.

Activity and challenge

There are an unusual large number of different activities available in the nearby area besides golf. Horse-riding, archery, diving, swimming, bicycling are all possible activities. Beside the facilities there are trails that are available to the visitors and they follow the fringe of the golf course and leads into the nearby forest and toward the old town.

Figure 10. Archery is taking place next to the course. Photo: Ole Hjorth Caspersen.

Figure 11. A riding school is located next to the golf course. Photo: Ole Hjorth Caspersen.

Figure 12. Soccer golf are one of the activities that the golf club offers to the visitors. Photo: Ole Hjorth Caspersen.

Figure 13. A number of small trails leads into the nearby forest that could be interesting for mointainbikers. Photo: Ole Hjorth Caspersen.

Service and gathering

The golf course has its own café, and in the vicinity to the course there are several cafes and restaurants which offer the visitors in the area many different experiences. A motel is also one of the included facilities at the golf course and there are several hotels in the nearby town. Places for barbecue can be found in the forest next to the golf course.

Figure 13. The golf motel at Gamle Frederiskstad golf course Photo: Ole Hjorth Caspersen.

Figure 14. The is a nice cafe in relation to the chub house and the motel. Photo: Ole Hjorth Caspersen.

Experience values in the area

Gamle Frederiksstads golf course offers a number of interesting experiences. At the course visitors can enjoy a nice walk along the course. With respect to habitat quality a plan exists for reshaping the stream Oldenborgbekken that runs through the golf course. In order to increase its value as habitat a more extensive management could be carried out and small ponds could be created in order to lower the pollution. It is expected that by this change the streams values as habitat would be much improved.

But the potential for future development becomes very clear when the experience mapping focuses on the regional landscape. Through the experience mapping the many different options and experiences suddenly become visible. And due to the location in the urban fringe the access to the area is relatively easy for large number of citizens and visitors. Hence in a regional perspective this part of Frederiksstad could be developed further as a powerful activity and leisure area. The experience map at figure 6 illustrates the many different recreational options that already exist in this area.

In the vicinity of the golf course there are trails for walking and bicycling. It is also close to the see and just next to the course there is a forest that includes different recreational facilities. The fortified city "Gamle Frederiksstad" is unique in a Scandinavian perspective. On the course thereare severalhistorical items that are present and to some extent they also are visible in the landscape but they could be conveyed better in order to increase the historical experience.

Frederiksstad is close by and offer other facilities as hotels, modern restaurants, shops, and recreational activities to old harbor. Hence there is a great potential for collective branding of these regional experiences in cooperation with other stakeholders as the municipality, organizations and associations in the area.

Suggestions for future multifunctional development

The questionary that was sent out to the members of Frederiksstad golf course was answered by 91 respondents. It seems that the large majority was positive for further multifunctional development. As a follow up on the cooperation with University of Copenhagen the course has developed a plan for further multifunctional development. This plan departure in the facilities on the golf course and includes 5 topics:

Presentation	History	Bicycle trail and rest areas	Bowles	Friendship clubs
From idea to a finished course.	Investigate the story of the historical remains on the course. Develop means to inform visitors on this.	Provide a map and develop a trail for bicycle. Inform visitors of already developed rest areas	Develop a place for Bowles	Establish contacts to potential friendship clubs

This plan is linked to a number of persons that are responsible for the five topics and the development of the multifunctional golf course is in good progress. The plan mostly addresses course features, possibilities and facilities and it complies with the recreational mapping of the course. Furthermore this progress plan is not in conflict with the members opinion when it is compared to the conducted questionary. It will expand the facilities and the related recreational experiences and it will contribute to attract more visitors and enhance their experiences when they visit the golf course.

However there are also new possibilities in order to benefit from a more regional development. The questionary indicate a large overweight of male players compared to female players (78/13) and most of these players has a full time membership. If the club wants to expand the number of players beyond the present number it can be done in several ways. One way is to try to enlarge the number of permanent memberships by providing better facilities and experiences on the course.

Another method could be to provide facilities and experiences that may appeal to the family. This method could use a regional approach and it may prove to have large potential for future development. The golf course could engage in a marketing campaign that may attract new users. This campaign could brand the golf course as one of several leisure facilities in Frederiksstad. This way of branding the golf course may attract golf players interested in other membership forms such as a long distance membership or a weekend memberships

This strategy departure in the regional experience mapping that illustrate that there are an unusual large number of possible experiences in the surrounding area (see figure 6). Several of the experiences could be considered as being family friendly activities (horse riding, swimming, archery, and bicycling, hiking possibilities).

Beside that is Old Frederiksstad city entailed with a long history. The fortified and well preserved city enables the visitor to investigate an old fortress in a condition that is next to none in Scandinavia. This aspect is important to include in the branding of the golf course.

If one departures in the experiences and service facilities that the golf course provide (motel and café) and combine these with the nearby services that Frederiksstad city provides (hotels, restaurants, cafés, museums, shopping) a visitor would have a broad offer of experiences that not only appeal to the male golfer but to the whole family. This recreational set up does not only appeal to domestic visitors but could be enlarged to appeal to visitors from Scandinavia as well as Germany.

A barrier for this development is that the marketing of the golf course as being a multifunctional golf course in a regional perspective can not only be carried out solely by the golf course. It complies with the municipal plan of developing Frederiksstad towards an activity center. But a plan for development of the golf course in this direction must include other stake holders. Some of these being the local tourist office and the municipality and associations in the neighborhood.

Golf players' viewpoints

Gamle Fredrikstad Golfklubb, Norway

To get the viewpoints of the golf players at Gamle Fredrikstad Golfklubb regarding multifunctional initiatives, a web based questionnaire was developed. The questionnaire was identical for all five golf courses/clubs included in the project.

Contact to the respondents was made through the homepage of the club/course, and in newsletters. During March 2014 – May 2014, a total of 233 persons have opened the survey, and 156 have for sure read one or more of the questions. 91 respondents completed the questionnaire by answering all questions. The following analysis is based on these *91 respondents*.

Summary of selected results – for the full, balanced results, please see the specific tables and figures following this brief overview:

- There are clearly more positive than negative respondents towards other activities on the golf course than golfing itself – especially if it takes place in the winter time.
- A majority of the respondents find it important that the golf course is managed so it can contribute as habitat for the natural flora and fauna.
- Regarding the overall attitude to new initiatives focusing on cultural, natural and environmental conditions at the home course, 75% are positive/very positive, ad 9% are negative/very negative.
- Out of 34 different activities one could imagine taking place at a golf course, the ones that most respondents (50% or more) find *best* suited to fit alongside the golf game are: walking on the course paths/roads, skiing (cross-country in the winter), skiing (cross-country on marked trails in the winter), soccer golf, bird watching, running (exercise), mini golf, Frisbee golf, and orienteering (winter) – and 50% or more found the following activities *worst* suited: Dog walking (without a leash), flying model planes, horseback riding, dog training (agility course), kite-flying, nature kindergarten, dog training (obedience training), model boat sailing in the water holes of the golf course, and orienteering (summer).
- Among the present guests at the golf course, horseback riders and dog walkers are the categories that most respondents find reducing the pleasure of playing golf.
- The majority, approximately 4 out of 5 of the respondents partly or strongly agree in that new initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport – and thereby get more members.
- A short general characterization of the respondents: 50% are older than 50 years and 18% younger than 40 years; 78% are males; 58% have a handicap between 15 and 35.9; 15% have played golf 5 years or less and 30% have played more than 15 years; social interaction with family and friends are the most important cause for playing golf for 54%, exercise is most important

for 24%, the competition is most important for 12%, social interaction with other club members is most important for 8%, and finally enjoying nature is most important for 2%.

Table F1: Distribution of responses to the question: "Please state how much you disagree or agree with each of the following 9 statements. When you answer please think of the golf course you are most attached to – your home course."

%	**Strongly disagree**	**Partly disagree**	**Neither /nor**	**Partly agree**	**Strongly agree**	**Don"t know**
1. If efforts were made to have more visitors and activities in the **club house**, it would be a good way to get more people in contact with the golf sport and thereby get more members.	3	4	6	21	66	0
2. If efforts were made to have more visitors and activities in the **club restaurant**, it would be a good way to get more people in contact with the golf sport and thereby get more members.	3	8	6	26	57	0
3. In general, I think it would be positive, if the social life is increased by the club house/ restaurant being used by other people than golfers.	3	8	6	18	64	1
4. If efforts were made to have more visitors and activities on the ***golf course itself***, it would be a good way to get more people in contact with the golf sport and thereby get more members.	13	10	8	40	29	0
5. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not affect ***security***.	18	14	6	32	30	0
6. It is acceptable to have visitors on the golf course who are carrying out other activities than playing golf – as long as it does not ***disturb*** my golf play.	15	4	7	29	44	1
7. More of my family, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	20	9	25	23	18	5
8. More of my friends, who do not play golf, would join me on the course if it was possible to do other activities than golf, and if there were other people than golfers on the course.	13	11	30	25	13	8
9. I myself would like to use the golf course for visiting nature and other activities than playing golf.	22	15	18	21	23	1

Table F1 shows the distribution of respondents' level of agreement with 9 statements about different aspects of multi-functionality in relation to golf courses. A large majority of respondents agreed that initiatives and activities in the club house and club restaurant would be good ways to get more people in contact with the golf sport, and thereby get more members. A distinct smaller majority of respondents agreed that using the golf course itself for this purpose would be a good idea.

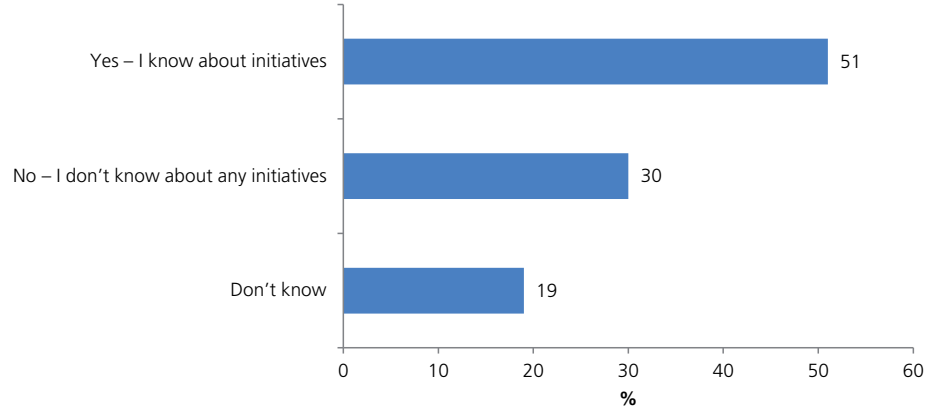


Figure F1: Distribution of responses to the question: "Do you know if any initiatives have been made on your home course that allows other people than golf players to use the course, club house and/or restaurant?"

About half of the respondents knew about initiatives on their home course that allowed other people than golf players to use the course, club house and/or restaurant (Figure F1).

Table F2: Distribution of responses to the question: "What would your overall attitude be, if new initiatives towards other activities than golfing itself should become a reality on your home course?"

%	Very negative	Nega-tive	Neither /nor	Positive	Very positive	Don't know
Other activities, only in the ***summer***:	13	12	13	44	14	4
Other activities, only in the ***winter***:	4	0	6	21	67	2
Other activities, ***all year:***	8	8	16	44	19	5

More than 50% of respondents had a positive or very positive attitude to new initiatives towards other activities taking place on the golf course, especially if these activities take place only in the winter (Table F2). 25% of respondents had a negative attitude towards this, if the activities were to take place only in the summer.

Table F3: Distribution of responses to the question: "When talking about "multi-functional" golf courses, one often also thinks about the cultural, natural, and environmental conditions. When you answer, please think of the golf course you are most attached to – your home course."

%	Not important	Somewhat important	Important	Very important	Don't know
How important do you believe it is that …					
… an extra effort is made to improve living conditions for the natural **flora** on the golf course?	6	11	35	47	1
… an extra effort is made to improve living conditions for the natural **fauna** on the golf course?	5	11	34	49	1
… the golf course is **designed**, so it can contribute as habitat for the natural flora and fauna?	4	9	32	55	0
… the golf course is **managed**, so it can contribute as habitat for the natural flora and fauna?	3	10	34	52	1
… information is given about flora and fauna to other visitors?	8	18	29	41	4
… the golf course is managed in an environmentally friendly way?	2	7	37	52	2
… in five years, pesticides (weed, insect- and fungi control) are no longer used on the golf course?	7	27	19	33	14
… possible cultural or historic monuments are preserved on the golf course?	7	7	33	50	3
… information is given regarding possible cultural or historic monuments to other visitors?	3	12	37	45	3

Table F3 shows that a large majority (up to 89%) of respondents believe it is important or very important that golf courses are designed and managed, so they can contribute as habitat for natural flora and fauna. When it comes to using pesticides on golf courses, only 52% believe it is important or very important, that pesticides are no longer used in five years – and 34% found the initiative not or somewhat important (the highest number of not/somewhat important responses among the nine efforts/initiatives surveyed). 14% answered "don't know" to this specific question about pesticides, whereas between 0% and 4% answered "don't know" to the remaining questions in Table F3.

Figure F2 shows that three out of four respondents have a positive or very positive overall attitude towards new initiatives with focus on cultural, natural, and environmental conditions on their home course.

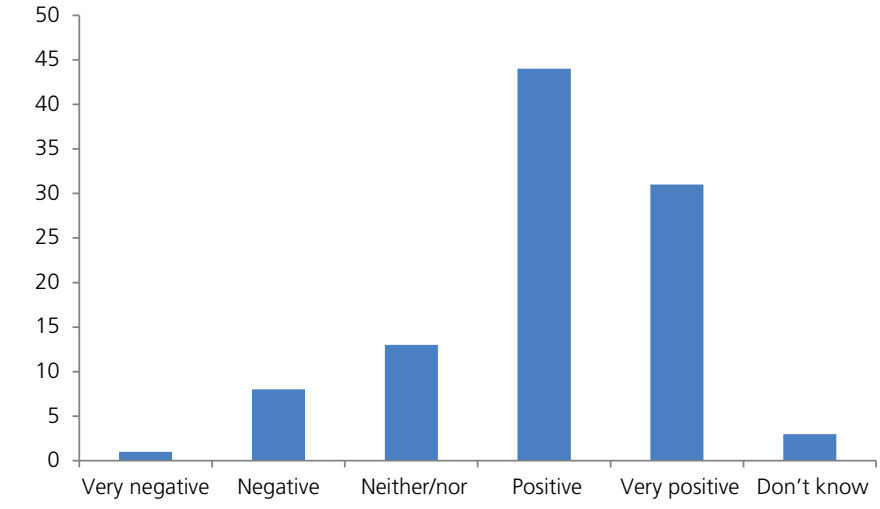


Figure F2: Distribution of responses to the question: "What will your overall attitude be, if new initiatives towards more focus on cultural, natural, and environmental conditions would become a reality at your home course?"

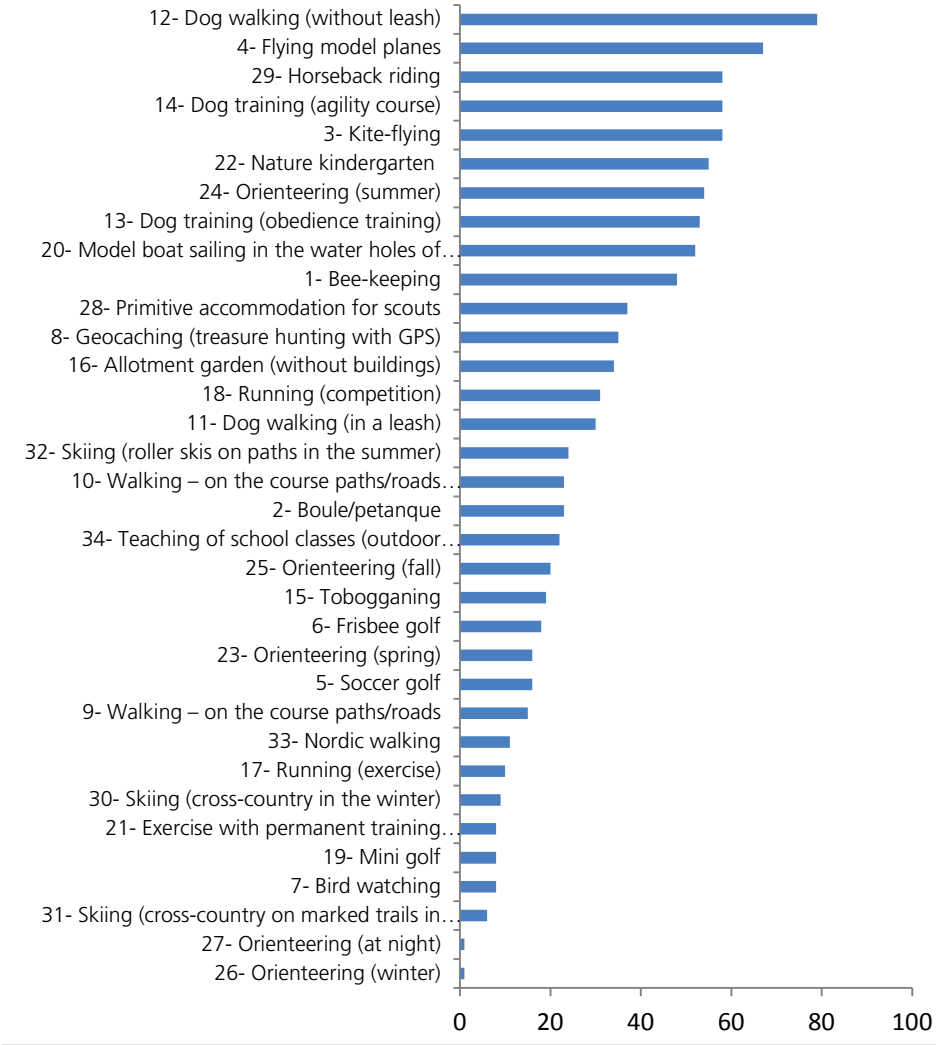


Figure F3: Distribution of responses to the question: "Aside from the golf game itself, there are a number of activities one could imagine taking place on a golf course – or parts of the course. – Which 10 activities would you think would be worst suited to fit alongside the golf game? Please note: These are only thought examples – there are no plans of these activities being carried out on any of the golf courses, where you are playing."

When asked about which activities would be worst suited to fit alongside the golf game, "dog walking (without leash)" is the activity that most respondents believed would be worst suited (Figure F3). Overall, activities including dogs, as well as kites and model planes are the activities worst suited, according to the respondents. Winter-activities, such as skiing and orienteering in the winter, as well as running and bird watching are among those activities, which least respondents consider among the worst suited.

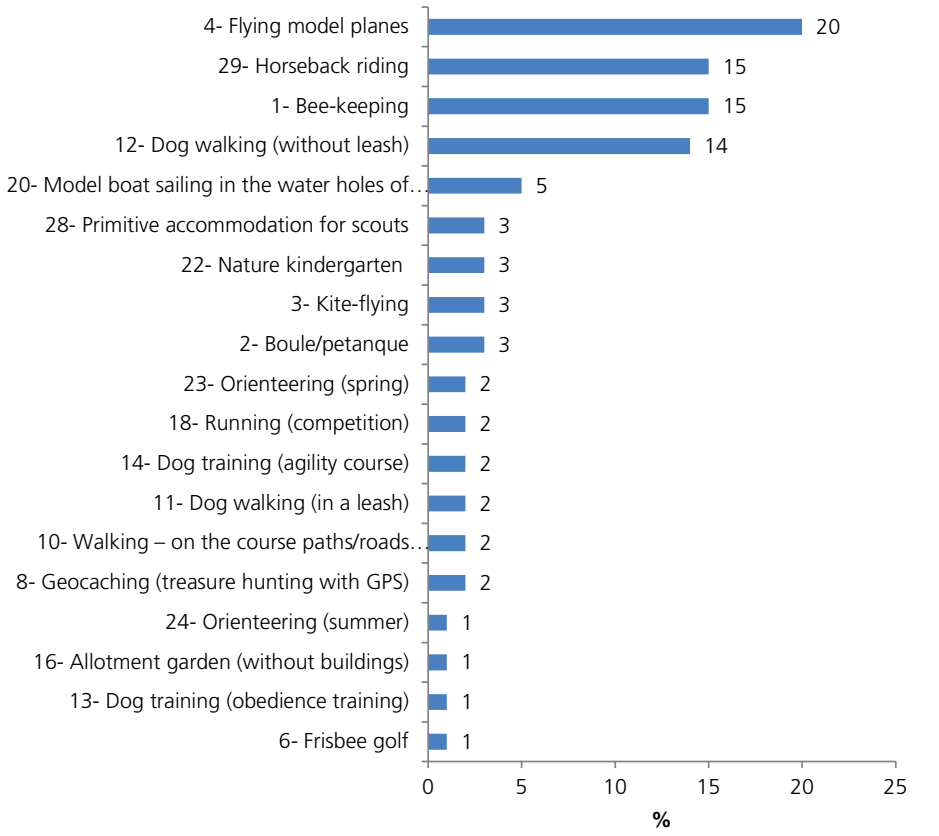


Figure F4: Distribution of responses to the question: "Which 3 of these 10 do you find worst suited to fit alongside the golf game?"

Figure F4 shows the distribution of answers, when respondents were asked to choose the three worst of the 10 worst suited activities. In this case, flying model planes is the activity that most respondents (20%) find worst suited to fit alongside the golf game, followed by horseback riding, bee-keeping, and dog walking (without leash).

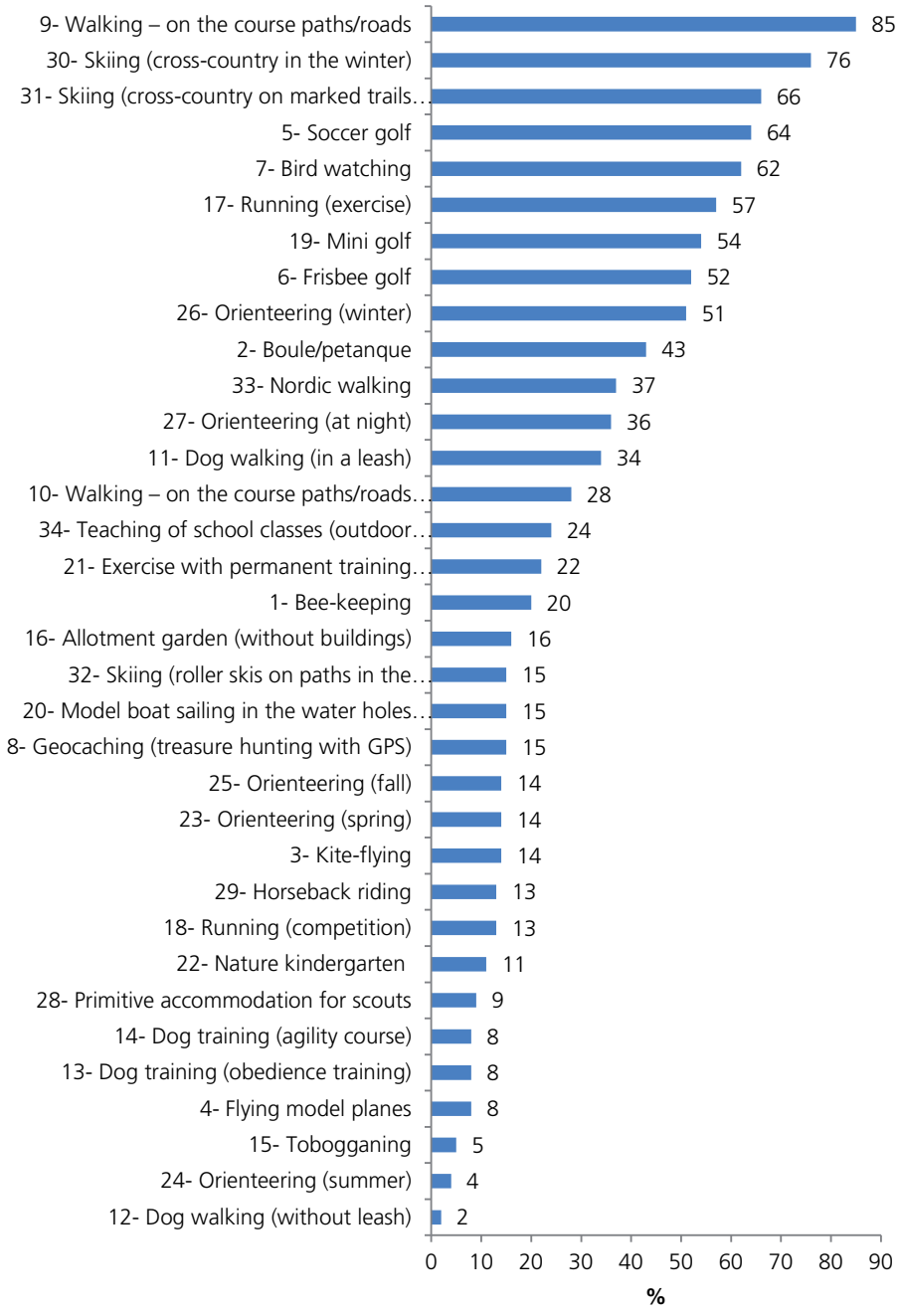


Figure F5: Distribution of responses to the question: "We would like to ask you to choose the 10 activities that you think are best suited to fit alongside the golf game."

Walking on course paths and roads is the activity that most respondents choose, when asked about, which 10 activities are best suited to fit alongside the golf game (Figure F5). Cross-country skiing is among the best suited, according the respondents. Dog walking without leash is the activity fewest respondents believe to be best suited to fit alongside the golf game. This corresponds well with the results from Figure F4.

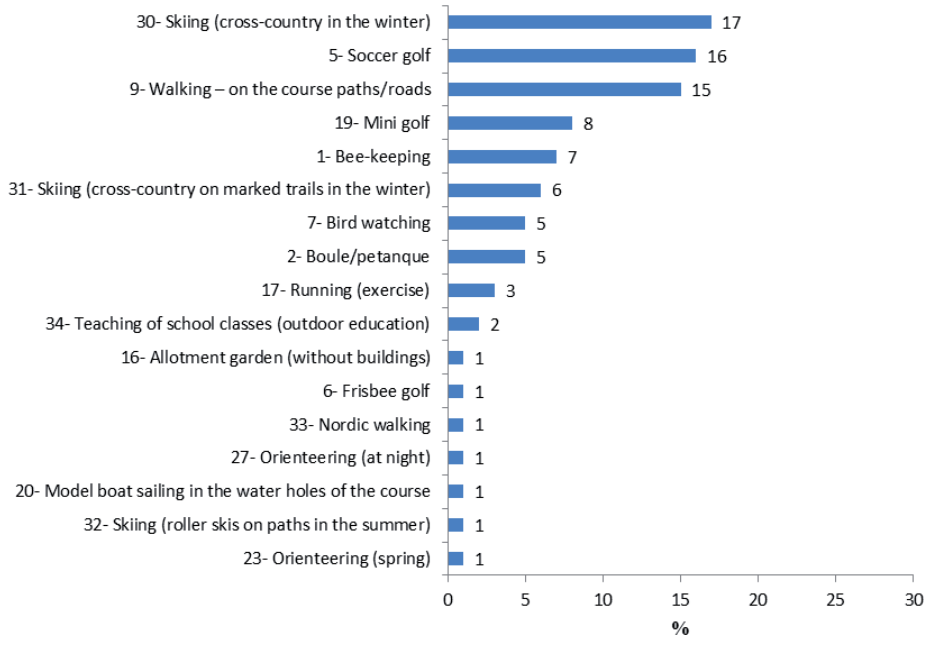


Figure F6: Distribution of responses to the question: "Which 3 of these 10 do you find best suited to fit alongside the golf game?"

When asked to choose the 3 best activities out of the 10 best, cross-country skiing in the winter is the activity that most respondents (20%) find best suited (Figure F6). Soccer golf and walking on the course paths and roads are also among the best suited activities, with 16% and 15%, respectively.

Table F4: Distribution of responses to the question: "Has meeting other guests within the previous year (2013) had any influence on your pleasure of playing golf course?"

%	Have NOT met this type of guest	Reduced my pleasure a lot	Reduced my pleasure a little	Made no difference	Increased my pleasure a little	Increased my pleasure a lot
1. Bird watchers	(93)	0	1	6	0	0
2. Dog walkers	(36)	5	13	38	7	1
3. Nordic walkers	(58)	2	1	34	3	2
4. Joggers	(25)	3	3	56	10	2
5. Other walking guests	(16)	1	7	57	15	4
6. Mountainbike riders	(68)	4	5	19	2	1
7. Other cyclists	(57)	3	7	28	2	3
8. Horseback riders	(51)	8	11	23	5	2
9. Skiers	(68)	1	0	23	1	7
10. Others	(63)	0	0	36	1	0

Meeting other guests on the golf course does not generally seem to reduce respondents' pleasure of playing golf (Table F4). The guests that have reduced respondents' pleasure the most are horseback riders and dog walkers, as 19% of respondents answered, that horseback riders had reduced their pleasure a little or a lot, and 18% answered the same with regards to dog walkers. However, 8% of respondents expressed that meeting dog walkers increased their pleasure a little or a lot, and for 38% it made no difference.

At the other end of the spectrum, 19% of respondents answered that meeting other walking guests increased their pleasure a little or a lot. Bird watchers are the type of guests that most respondents have not met (93%), whereas only 16% of respondents have not met other walking guests – figures that are important to have in mind, when evaluating the viewpoints of the responding golf players.

Table F5: Distribution of responses to the question: "Would your pleasure be reduced to the same degree if …" (This question was only forwarded to respondents that had a reduced pleasure of playing golf, cf. Table F4).

%	No – it would help a lot	No – it would help to some degree	Neither/nor – would not make a difference	Yes – it would not help	Don't know
… dog walkers only walked on specifically marked paths?	32	42	7	19	0
… dog walkers only stay in a separately marked area?	35	47	0	12	6
… Nordic walkers only walked on specifically marked paths?	66	34	0	0	0
… joggers only ran on specifically marked paths?	67	17	16	0	0
… mountainbike riders only cycled on specifically marked paths?	33	0	22	45	0
… mountainbike riders only cycled in a specifically marked area?	33	0	22	45	0
… cyclists only cycled on specifically marked paths?	11	11	33	45	0
… horseback riders only rode on specifically marked paths?	29	29	7	35	0
… skiers only skied on specifically marked routes?	100	0	0	0	0

The respondents, who had experienced a reduced pleasure of playing golf due to other guests, were asked, if their pleasure would be reduced to the same degree, if certain restrictions were put on the other guests' behaviour (Table F5). The general result shows that if dog walkers, joggers and Nordic walkers stayed on specifically marked paths or areas, they would not reduce the respondents' pleasure as much. Bike riders on the other hand, would still cause reduced pleasure, even if they were to cycle in specific areas or paths.

Background information about respondents

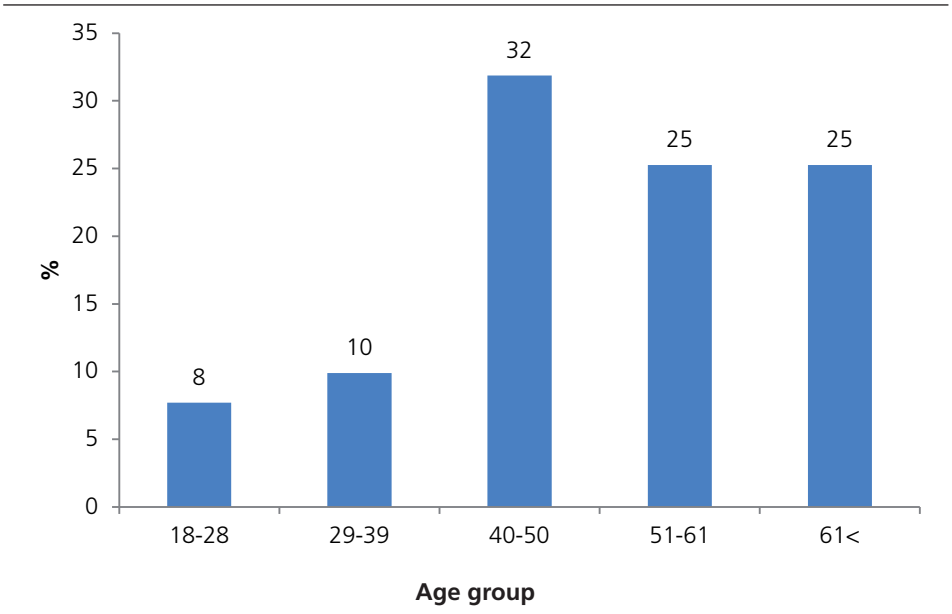


*Figure F7: Distribution of responses to the question: **"How old are you?"***

More than 4 out of 5 respondents are older than 40 years (Figure F7).

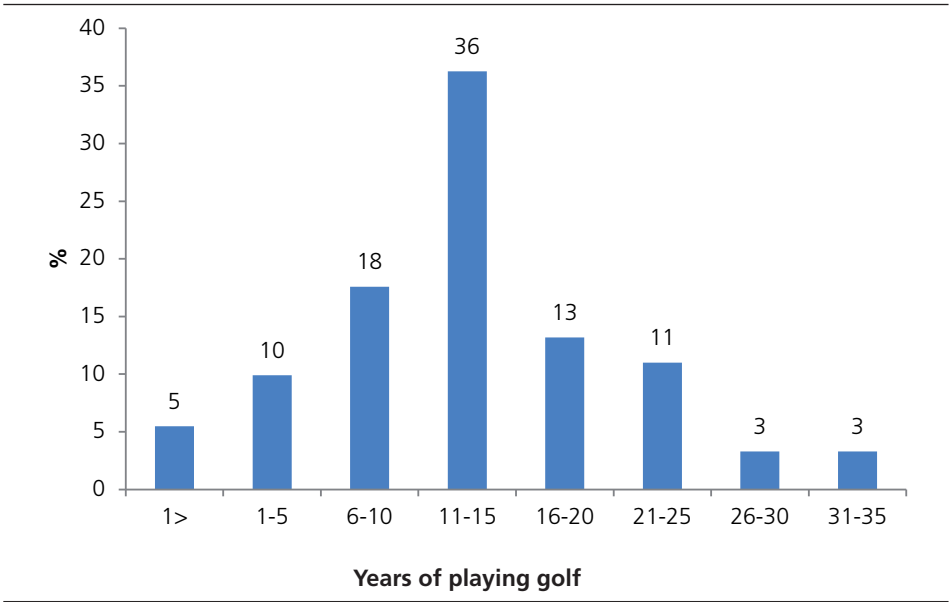


*Figure F8: Distribution of responses to the question: **"How many years have you been playing golf?"***

About 1 out of 3 has been playing golf in 11-15 years, and the two other thirds have benne playing less than 11 years and more than 15 years, respectively (Figure F8).

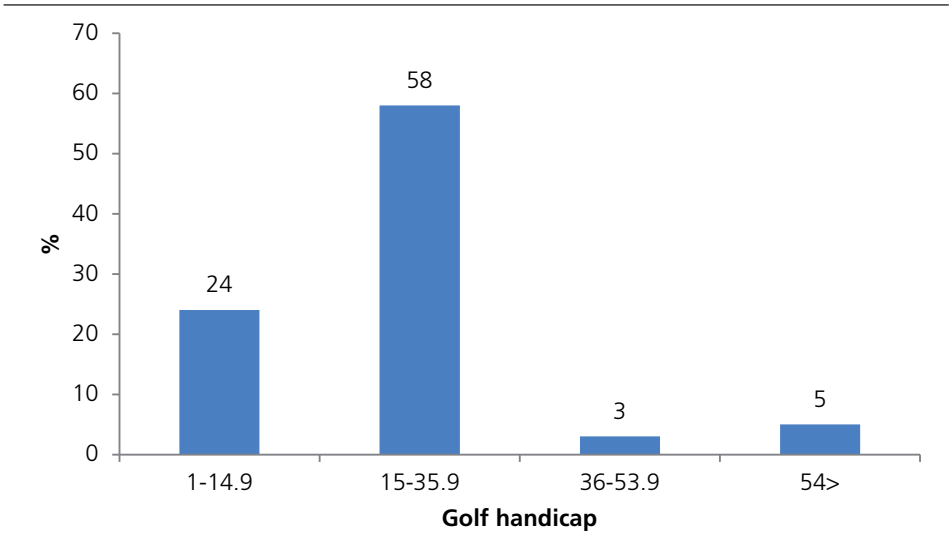


*Figure F9: Distribution of responses to the question: "**What is your golf handicap?**"*

Figure F9 shows that more than half of the respondents have a golf handicap somewhere between 15 and 35.9. Relatively few have a handicap higher than 36 (8%), which corresponds well with the fact that also few (5%) have been playing golf less than 1 year (Figure F8).

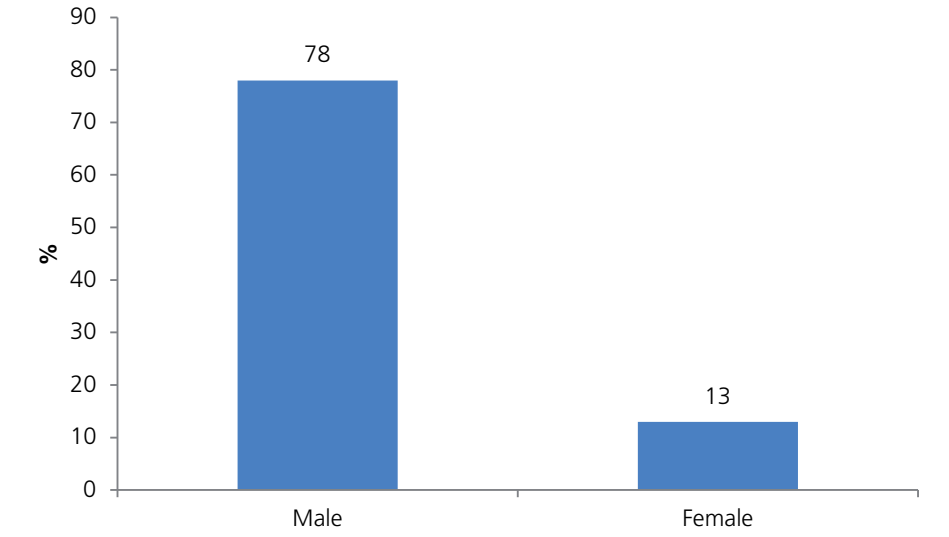


*Figure F10: Distribution of responses to the question: **"What is your gender?"***

A large majority of respondents are male (Figure F10).

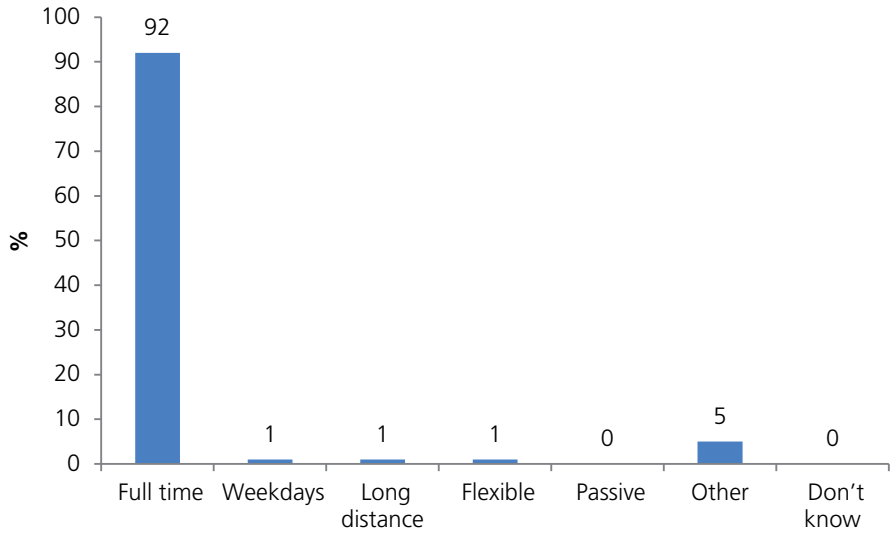


*Figure F11: Distribution of responses to the question: "**What kind of membership do you have?**"*

More than 9 out of 10 respondents have a full time membership of their golf club (Figure F11).

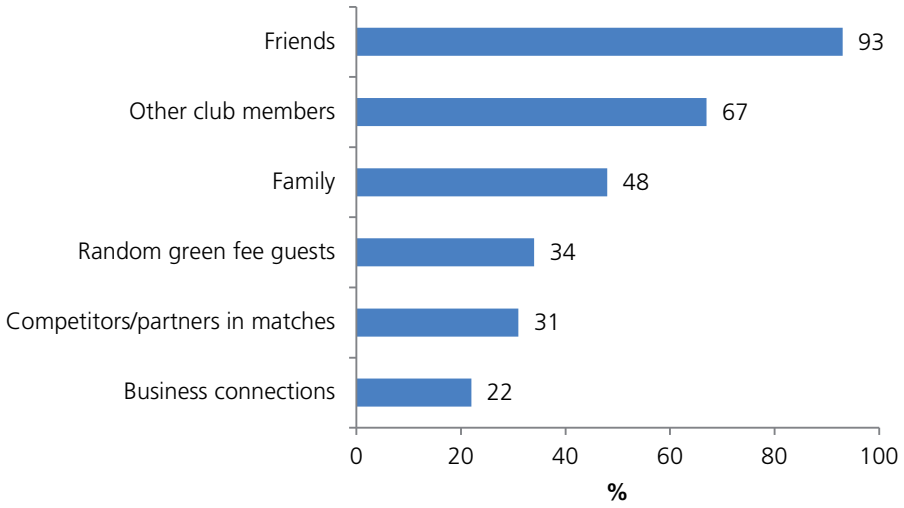


Figure F12: Distribution of responses to the question: "Who have you played golf with over the previous year (2013)?"

Based on the results in Figure F12, respondents on average play with three different groups of players over the year (sum of percentages in Figure F12 is close to 300). More than 9 out of 10 play with friends, whereas only 22% have played with business connections. When asked, who respondents most often play with, the majority answers friends (65%), followed by family and other club members (Figure F13).

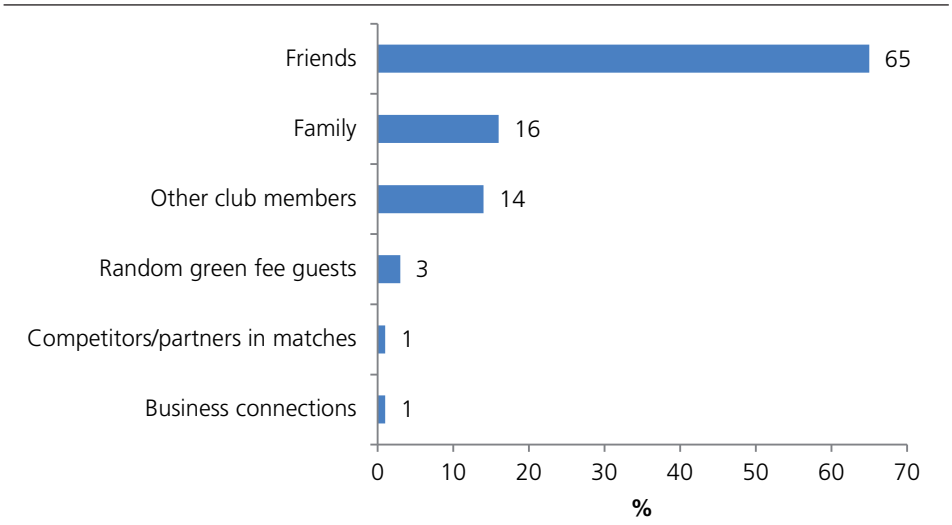


Figure F13: Distribution of responses to the question: ***"Who did you play with most often?"***

Table F6: Distribution of responses to the question: ***'How many times, approximately, have you played during the previous year (2013)?'***

%	Several times per week	Once a week	2-3 times per month	Once a month	Less than once a month
Spring:	27	32	20	13	8
Summer:	47	22	16	10	5
Fall:	34	29	20	11	6
Winter:	6	15	13	9	57

More than 50% of respondents play at least once a week in the spring, summer, and fall, whereas more than 50% play less than once a month in the winter (Table F6).

Table F7: Distribution of responses to the question: "Approximately, how many rounds have you played in 2013?"

%	0	1-9	10-19	20-29	30-39	40-49	50 and above
Home course:	3	21	31	16	17	5	7
On other courses (Norway and abroad):	9	42	27	10	8	2	2

Table F7 shows that respondents in general play more rounds on their home course, than they do on other courses – which make sense.

Table F8: Distribution of responses to the question: "How important are the following six causes for you playing golf?"

%	Not important	Somewhat important	Important	Very important	Don't know
1- For the sake of competition	31	41	19	9	0
2- For the sake of exercise	4	18	34	44	0
3- Social interaction with family/friends	0	7	24	68	1
4- Social interaction with other club members	14	30	22	34	0
5- To "network" (workwise)	47	34	10	8	1
6- To enjoy nature	7	26	44	23	0

Among the most important causes for playing golf are social interaction with family and friends and exercise (Table F8). Neither to "network" nor for the sake of competition is important to most respondents.

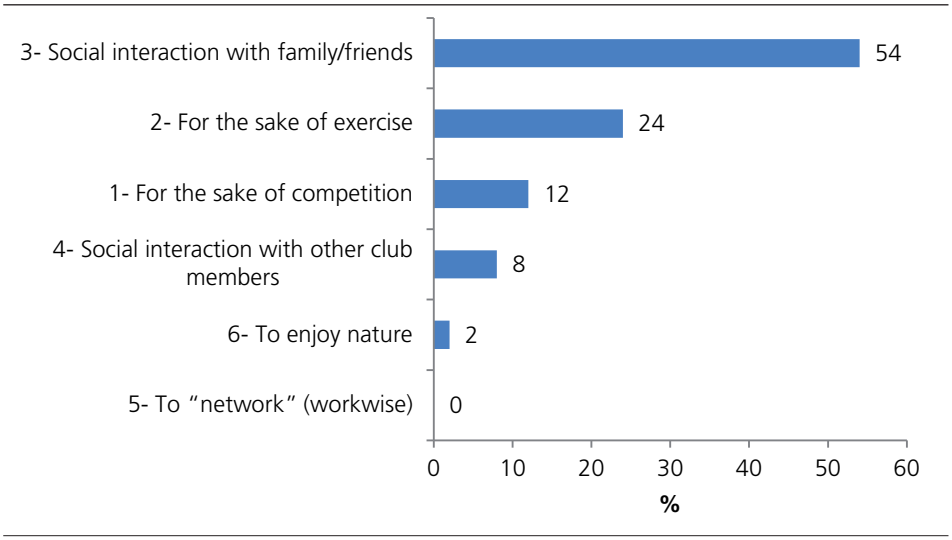


Figure F14: Distribution of responses to the question: "Which of these six causes is most important for you?"

When the respondents were asked to choose the most important cause for playing golf it became very clear, that social interaction with family and friends is the most important cause (54%) (Figure F14). Exercise is the most important cause for 24%, whereas no respondents have chosen networking as the most important cause for playing golf.

DEPARTMENT OF GEOSCIENCES AND
NATURAL RESOURCE MANAGEMENT

UNIVERSITY OF COPENHAGEN

ROLIGHEDSVEJ 23
DK 1958 FREDERIKSBERG

TEL. +45 353 315 00
IGN@IGN.KU.DK
WWW.IGN.KU.DK