

MS – Thesis

October 2008

Planning and Management of Recreation in Icelandic Forests

Developing infrastructure (input) strategies based
on preference and benefit (output) analysis

Sherry Curl



Landbúnaðarháskóli Íslands
Agricultural University of Iceland

Faculty of Environmental Sciences

MS – Thesis

October 2008

Planning and Management of Recreation in Icelandic Forests

Developing infrastructure (input) strategies based on preference and
benefit (output) analysis

Sherry Curl

Advisors:

Dr. Bjarni D. Sigurdsson
Agricultural University of Iceland
Faculty of Environmental Sciences
and

Dr. Paul Roscoe
University of Maine, Orono
Climate Change Institute

Clarification of contribution

The recruitment of volunteers for participation in the survey used in this study was done by the employees of the Icelandic Forest Service and the Forestry Associations of Reykjavik and Eyjafjörður. Returned questionnaires were recorded by an employee of the Icelandic Forest Service. All other aspects of the following thesis were done by me the undersigned and are based on my own design and observations and the text written by me. No part of this work has been previously submitted in pursuit of a higher degree.

Sherry L. Curl kt. 270757-7829

Bjarni D. Sigurdsson, advisor

Date

Abstract

Opportunities for forest recreation are relatively new in Iceland, as are the forests. No framework for planning and management exists for recreational forests in Iceland and data necessary for constructing such a framework are lacking. In order to provide the necessary data, a self-administered mail-in survey was designed to answer the following questions: 1) Are there distinct user groups? 2) If such groups exist, are the differences between them significant enough to form the basis of a framework? 3) What benefits (outcomes) are being sought by forest users? 4) Is the Importance-performance estimate a useful tool for monitoring the quality of recreational forests in Iceland? Survey respondents were recruited from two day-use and two overnight-use forests. ANOVAs were performed on the data using three categories: social groups, benefit groups and forest types, i.e. day-use and overnight-use. The data were also used in an Importance-performance analysis for each of the forests. Preference differences for infrastructure and management among social and benefit groups were insufficient for a planning and management framework. However, there were sufficient differences found between day-users and overnight-users to construct such a framework, with overnight-users placing a greater emphasis on security, access to water, nearness to shops and other things related to the duration of their stay. There were also clear differences in types of benefits (outputs) accruing to recreationists, with respondents in all forests mostly emphasizing restorative benefits, learning, social ties and spiritual benefits. User preferences were used to construct priority indices for use in selecting new areas for recreational development and improving existing recreational forests. The Importance-performance estimate proved to be a useful tool in gauging the quality of recreational infrastructures in the forests. It should also provide a method for evaluating the efficacy of improvement efforts and be a basis for formulating quality standards for use by forest staff.

Key words: forest recreation, zoning, user priorities, importance-performance estimate, input, infrastructure, output, benefits, quality standards, quality monitoring

Samantekt

Áætlanagerð og rekstur íslenskra skóga í þágu útivistar: Þróun uppbyggingar á aðstöðu með tilliti til greiningar á væntingum og ábata notenda.

Nýting skóga til útivistar er að mestu nýlegt fyrirbæri hér á landi, svipað og skógarnir sjálfir. Engin umgjörð er til staðar um áætlanagerð og rekstur útivistarskóga á Íslandi og nauðsynlegar upplýsingar til að skapa slíka umgjörð vantar. Til að bæta úr þeim upplýsingaskorti var póstkönnun hönnuð og framkvæmd þar sem reynt var að fá svör við eftirtöldum spurningum: 1) Eru mismunandi notendahópar sem nýta skóga til útivistar? 2) Ef svo er, er munurinn á þeim nægur til að byggja umgjörð um áætlanagerð og rekstur á? 3) Hvaða ábata sækjast notendur skóganna eftir? 4) Er mikilvægis-frammistöðumat nothæft til að fylgjast með gæðum útivistarskóga á Íslandi? Tilvönandi svarendur voru skráðir í tveimur dagdvalarskógum (Kjarnaskógi og Heiðmörk) og tveimur skógum með tjaldsvæðum (Hallormsstaðaskógi og Vaglaskógi). Fervikagreining var framkvæmd á svörum miðað við þrennskonar flokkun: eftir félagslegum hópum, eftir ábata sem fólk taldi sig fá og eftir tegund skógar, þ.e. dagdvalar eða með tjaldsvæði. Svörin voru einnig notuð við mikilvægis-frammistöðumat á hverjum skógi fyrir sig. Munur á væntingum um aðstöðu og rekstur eftir félagshópum og ábata reyndist of lítill til að byggja umgjörð um áætlanagerð og rekstur á. Hins vegar var nægur munur á væntingum dagdvalargesta og tjaldsvæðagesta til að byggja slíka umgjörð á, þar sem tjaldsvæðagestir lögðu meiri áherslu á öryggi, aðgang að vatni, nálægt við verslanir og fleiri atriði tengd lengd dvalarinnar. Einnig kom fram skýr munur milli tegunda ábata sem fólk taldi sig fá og taldi fólk sig einkum njóta endurnæringar, lærdóms, félagslegra tengsla og andlegrar upplifunar í öllum skógunum. Væntingar skógargesta voru notaðar til að búa til forgangslista sem nota má við val á nýjum svæðum til útivistar og ákvarðanatöku um úrbætur á núverandi útivistarsvæðum. Mikilvægis-frammistöðumat reyndist vel við að meta gæði aðstöðu til útivistar í skógunum. Það ætti einnig að nýtast við mat á útkomu aðgerða til að bæta aðstöðu og við gerð gæðastaðla um útivistaraðstöðu sem nota má í skógum landsins.

Lykilorð: útivist í skógum, svæðisskipting, forgangsöröðun neytenda, mikilvægis-frammistöðumat, innviðir, ábati, gæðastaðlar, gæðamat.

Acknowledgements

A project of this type is not possible without the assistance of many individuals. I would like to take this opportunity to thank all those involved. My special thanks go to my advisors Dr. Bjarni D. Sigurdsson and Dr. Paul Roscoe for all their help and comments. I would also like to thank Laufey Steingrimsdottir for acting as proctor for this thesis. For the use of staff to recruit volunteers, I would like to thank forest wardens Helgi Gislason, Johan Holst, Sigurdur Skulason and Thor Thorfinnsson. I would also like to thank the Icelandic Forest Service for their financial support and for giving me the opportunity to complete this project. I would like to thank the staff of Heradsskogar and the Icelandic Forest Service for their help in piloting the survey and especially Adalheidur Bergfoss for help in photocopying, mailing and keeping track of the questionnaires. I would like to especially thank Throstur Eysteinnsson for all he has done to allow me to complete this work. However this survey could never have taken place without the cooperation of the guests of Hallormsstadur, Vaglir, Heidmörk and Kjarni Forests, therefore I would like to thank all those persons who gave so generously of their time.

Table of Contents

Clarification of contribution	i
Abstract.....	ii
Samantekt	iii
Acknowledgements	iv
Table of Contents	v
List of Tables.....	viii
List of Figures.....	ix
Introduction	1
Review of the literature	2
1.1 Tourism authorities exclude Icelanders and forest recreation.....	2
1.2 Visitors to forests.....	5
1.3 Development of recreation management theories	11
1.4 Psychological processes	22
Materials and methods.....	27
2.1 Study areas.....	27
2.1.1 Day-use forests	27
2.1.2 Overnight forests	28
2.2 Questionnaire.....	30
2.2.1 Development.....	30
2.2.2 Volunteer recruitment.....	33
2.3 Data analysis.....	34
2.4 Miscellaneous questions	35
2.5 Statistical analysis	35
Results	37
3.1 Demographics.....	37
3.2 Analysis of desired infrastructure and attributes by groups	58
3.2.1 Analysis by social groups	58
3.2.2 Analysis by benefit groups	61
3.2.3 Analysis by forest	70
3.3 Questions tested for correlation.....	87
3.4 Priority indices.....	89
3.4.1 Priority indices for day-use forests.....	89

3.4.2 Priority indices for overnight forests	91
3.5 Importance-performance analysis.....	93
3.5.1 Importance-performance analysis for Hallormsstadur Forest	95
3.5.2 Importance-performance analysis for Vaglir Forest.....	96
3.5.3 Importance-performance analysis for Heidmörk Forest.....	97
3.5.4 Importance-performance analysis for Kjarni Forest.....	98
3.6 Questions not used for analysis	99
Discussion.....	100
4.1 Methodological issues	100
4.2 Demographics	101
4.3 Travel patterns	104
4.4 Miscellaneous Questions	105
4.5 Identifying meaningful categories	106
4.5.1 Social groups	107
4.5.2 Benefits.....	107
4.5.3 Forests.....	108
4.6 Implications for zoning and management of forests for recreation.....	109
4.6.1 Zoning recreational use of forests	109
4.6.2 Priority rankings for management actions.....	111
4.6.3 Possible conflicts of management actions.....	112
4.7 The Importance-performance estimate as a management tool	112
Conclusions	115
References	119
Appendix A: Questionnaires	131
Appendix B: English translation of the questionnaires	157
Appendix C: Correspondence.....	173
Appendix D: ANOVA Tables	182
Appendix E: Priority Indices	243

List of Tables

Table 1-1 Number of guest nights per 1000 Icelanders in Hallormsstadur and Vaglir National Forests.....	7
Table 1-2 Known studies of recreational use of Icelandic forests.....	10
Table 1-3 Comparison of Limits of Acceptable Change and Visitor Experience and Environmental Protection frameworks.....	18
Table 2-1 Return rate for 2007 survey of visitors in four Icelandic forests	34
Table 2-2 Code letters for forests	34
Table 3-1 Cities of Residency of volunteers from Heidmörk and Kjarni Forests.....	47
Table 3-2 Cities of Residency of volunteers from Hallormsstadur and Vaglir Forests ..	47
Table 3-3 Reasons given for choice of forest for recreational visit.....	54
Table 3-4 Specific recreation activities reported by respondents in 2007 survey	55
Table 3-5 Code letters for social groups.....	59
Table 3-6 ANOVA results for question HL/V 24 by social group.....	60
Table 3-7 Questions included in individuals benefit and colour code for benefit classes	62
Table 3-8 ANOVA results for question HL/V 21 by benefit classes	63
Table 3-9 ANOVA results for question HL/V 24 by benefit classes	64
Table 3-10 ANOVA results for question HL/V 26 by benefit classes	65
Table 3-11 ANOVA results for question HL/V 43 by benefit classes	67
Table 3-12 ANOVA results for question HL/V 56 by benefit classes	68
Table 3-13 ANOVA results for question HL/V 67 by benefit classes	69
Table 3-14 Percent of respondents intending to re-visit the forest.....	88
Table 3-15 Overall satisfaction rating of forest visit.....	88
Table 3-16 Priority index of site attributes for day-use forests	90
Table 3-17 Priority index of preferences for management actions in day-use forests	90
Table 3-18 Possible conflict areas in day-use forests.....	91
Table 3-19 Priority index of site attributes for overnight forests	91
Table 3-20 Priority index of preferences for management actions in overnight forests	92
Table 3-21 Possible conflict areas in overnight forests.....	93
Table 3-22 Policy preferences for overnight forests	93
Table 3-23 Importance-performance question pairs for overnight forests.....	94
Table 3-24 Importance-performance question pairs for day-use forests.....	94

List of Figures

Figure 1-1 Fuelling factors for Icelandic forest recreation.....	13
Figure 1-2 Determining recreational carrying capacity.....	14
Figure 1-3 Unplanned social path in Thorsmörk.....	20
Figure 3-1 Gender distribution of respondents to 2007 survey.....	37
Figure 3-2 Mean and medium age of respondents to 2007 survey.....	38
Figure 3-3 Educational level of respondents to 2007 survey.....	39
Figure 3-4 Age classes of persons in the respondents' social groups.....	40
Figure 3-5 Percent of repeat and new visitors among respondents to 2007 survey.....	41
Figure 3-6 Frequency of visits per year among respondents from Heidmörk and Kjarni Forests.....	42
Figure 3-7 Total number of visits reported by respondents to 2007 survey for Hallormsstadur and Vaglir National Forests.....	43
Figure 3-8 Time of week respondents reported visiting the forest in the 2007 survey.....	44
Figure 3-9 Duration of visits to Heidmörk and Kjarni forests reported in 2007 survey.....	45
Figure 3-10 Mean and median duration of visits to Hallormsstadur and Vaglir National Forests reported in 2007 survey.....	46
Figure 3-11 Travel times reported in 2007 survey to Heidmörk and Kjarni Forests.....	48
Figure 3-12 Times respondents to 2007 survey are willing to spend travelling to forests.....	49
Figure 3-13 Number of respondents reporting Hallormsstadur or Vaglir National Forests as the main/final destination of their trips in the 2007 survey.....	50
Figure 3-14 Number of respondents from Hallormsstadur or Vaglir National Forests who reported camping at other campsites in the same trip from the 2007 survey.....	51
Figure 3-15 Types of camping accommodations reported by respondents to the 2007 survey from Hallormsstadur or Vaglir National Forests.....	52
Figure 3-16 Percent of respondents of 2007 survey from Hallormsstadur or Vaglir National forests who reported taking day trips during their stay at the forest.....	53
Figure 3-17 Percent of respondents of the 2007 survey specifically naming walking during their trip to the forests.....	56
Figure 3-18 Percent of respondents to the 2007 survey from Heidmörk and Kjarni Forest reporting special trips to harvest non-timber forest resources.....	57

Figure 3-19 Types of non-timber forest resources reported harvested by respondents to 2007 survey from Heidmörk Forest	57
Figure 3-20 Types of non-timber forest resources reported harvested by respondents to 2007 survey from Kjarni Forest	58
Figure 3-21 Distribution of Social Groups reported by respondents of 2007 survey by forest	59
Figure 3-22 Distribution of benefit classes reported by respondents of 2007 survey by forest	59
Figure 3-23 ANOVA results for question 18 of 2007 survey by forest	70
Figure 3-24 ANOVA results for question 19 of 2007 survey by forest	71
Figure 3-25 ANOVA results for question 21 of 2007 survey by forest	72
Figure 3-26 ANOVA results for question 23 of 2007 survey by forest	73
Figure 3-27 ANOVA results for question 24 of 2007 survey by forest	74
Figure 3-28 ANOVA results for question 25 of 2007 survey by forest	75
Figure 3-29 ANOVA results for question 26 of 2007 survey by forest	76
Figure 3-30 ANOVA results for question 33 of 2007 survey by forest	77
Figure 3-31 ANOVA results for question 34 of 2007 survey by forest	78
Figure 3-32 ANOVA results for question 37 of 2007 survey by forest	79
Figure 3-33 ANOVA results for question 39 of 2007 survey by forest	80
Figure 3-34 ANOVA results for question 41 of 2007 survey by forest	81
Figure 3-35 ANOVA results for question 43 of 2007 survey by forest	82
Figure 3-36 ANOVA results for question 50 of 2007 survey by forest	83
Figure 3-37 ANOVA results for question 51 of 2007 survey by forest	84
Figure 3-38 ANOVA results for question 57 of 2007 survey by forest	85
Figure 3-39 ANOVA results for question 59 of 2007 survey by forest	86
Figure 3-40 ANOVA results for question 68 of 2007 survey by forest	87
Figure 3-41 Importance-performance analysis for Hallormsstadur National Forest.....	95
Figure 3-42 Importance-performance analysis for Vaglir National Forest	96
Figure 3-43 Importance-performance analysis for Heidmörk Forest	97
Figure 3-44 Importance-performance analysis for Kjarni Forest	98

Introduction

The first forestry act in Iceland was enacted in 1907, leading to the formation of the Iceland Forest Service (IFS; Eysteinnsson, 2004). Protection of forest remnants and afforestation have been the major objectives of the IFS for most of its history and the greater part of forestry efforts were concentrated on researching silvacultural issues, establishing new forests and, in recent years, promoting the formation and growth of the Regional Afforestation Projects (Blöndal *et al.*, 1986; Blöndal, 1993; Blöndal and Gunnarson, 1999; Eysteinnsson, 2004). As a result a strong framework for afforestation was developed, the Afforestation Projects were firmly established, and many new forests were planted, but the development of a management planning framework for existing forests was necessarily neglected. It is only in recent years that the IFS and the Icelandic Forestry Association (IFA) have been able to direct substantial efforts to the many aspects of managing older forests, including recreational resources (Eysteinnsson, 2004).

With little new forest land for developing recreation areas, limited funding and an increasing demand for forest recreation opportunities, providers of such areas must maximize the use of existing recreational forests and identify forest areas with potential for recreational development and use. Management of outdoor recreation areas is complex and includes not only the management of biological aspects of the forest, but also management of the reciprocal relationships between the environment and visitor, between visitors and the management of various services (Hammit and Cole, 1998; Clark *et al.*; Pigram and Jenkins, 1999; Hendee and Dawson, 2002). Efforts are being made by the Forest Service to develop management plans for older forests addressing these issues. However these efforts are severely hampered by a lack of knowledge regarding recreationists and recreational use of Icelandic forests and the absence of a framework for developing recreational plans. This study examines the preferences and use patterns of Icelandic forest recreationists and attempts to incorporate this information into a practical method for developing new forests for recreation as well as managing and improving existing recreational facilities.

Review of the Literature

1.1 Tourism authorities exclude Icelanders and forest recreation

Throughout Western Europe and North America recreational use of forests is extremely popular (Hammit and Cole, 1998; Clark *et al.*, 1984; Pigram and Jenkins, 1999; Hendee and Dawson, 2002; Natural Resources Canada, 1996; Rametsteiner and Kraxner, 2003). It is tempting to explain this popularity by simply citing tradition and the presence of relatively large and accessible forested areas. However this connection becomes problematic in areas like Scotland where there was severe deforestation and existing forest areas are largely the result of afforestation and preservation efforts after the Second World War (Scottish Forest Alliance, 2002). Despite the relative newness of these forests and the lack of a tradition for their use for public recreation, forests have become an important source of recreational opportunities and revenue in the Scottish nature based tourism sector (Martin, 2005). What role, if any, do forests play in nature tourism and outdoor recreation in Iceland, the country that has the least forest cover of any other country in Europe?

Tourism is an important source of revenue for Iceland, accounting for 5.1% of the GDP for 2005 and 72% of it is nature based (Icelandic Tourist Board, n.d.). The remark “Tourists do not want to see trees in Iceland” is one all too familiar to those involved in forestry and afforestation in Iceland (Eysteinnsson and Curl 2007). This argument is used to justify the exclusion of those providing recreational facilities in forested areas from research, co-operative marketing efforts and funding¹ for improvements to recreational infrastructure. Some have gone so far as to use this statement as justification for efforts to hinder continuing afforestation in Iceland (Eysteinnsson and Curl, 2007). However, in contrast to this attitude, those providing recreational opportunities in forested areas report a sharp increase in the use of forests for recreation in recent years (Curl and Johannesdottir, 2005). The question then becomes; is the provision of recreational opportunities in forests a waste of time and money since tourists do not want to see trees in Iceland or is provision of recreational opportunities in forests justified because tourists actually want to visit forests?

¹ Of the 419 grants provided for improvement and provision of outdoor recreational areas by the Icelandic Tourist Board from 1995 to 2007 only 8, or less than 2% went to areas with forests (Ferdamalastofa, n.d.c).

The Icelandic Tourist Board was established in 1936 (Gíslason Elías, email, 4 Oct. 2007). It is their responsibility to promote tourism in Iceland, support research, disseminate information about tourism in Iceland and approve applications for government grants for provision and improvement of tourist facilities. They are the leading agency for tourism research in Iceland. Their web-site provides access to a total of 95 research publications and surveys done under their auspices. Only four of these publications are devoted to Icelandic tourists (Ferdamalastofa, n.d.a). The only other document on their web-site mentioning Icelandic tourists is “Marketing Strategies for Icelandic Tourism” from 1997 (Hagvangur hf, 1997). This report includes a 78 page section containing detailed market analyses for several countries. Less than one full page of these 78 is devoted to Icelandic tourists and it begins by stating, “Little attention has been given to domestic tourists in recent years, despite their importance to the tourism sector in Iceland” (Hagvangur hf, 1997, 96) (translation mine). The Icelandic Tourist Board published a leaflet called “Tourism in Iceland in Figures” presenting tourism statistics for 2005. The leaflet includes general information about the country such as climate, the distribution of tourists across different sections of the country and various other data. It also includes a demographic breakdown of “overseas travelers to Iceland” (Icelandic Tourist Board, n.d.). There is no mention of domestic tourists in the leaflet indicating that the lack of attention to Icelandic tourists mentioned in 1997 (Hagvangur hf) continues. It is obvious when the word tourist is used in the tourism sector, it means foreign tourist.

In 1996, a survey was conducted to gather information regarding the opinions of foreign visitors concerning nature and environmental issues in Iceland (Bjarnason *et al.*, 1996). The survey was conducted in 11 popular nature areas from early July to mid August and a total of 1,200 persons responded. The survey consisted of 32 questions utilizing a combination of open ended and scaled responses. Only three questions, all open ended, prompted responses about vegetation. Of the answers to the first question, “What do you find most interesting in Iceland?”, surveyors received a total of 1,538 responses². Vegetation is mentioned 61 times, or in 4%³ of total responses. The number of times vegetation is mentioned in the second question, “What aspect of the highlands did you like best?” was 3% of total responses. There is no information in the text indicating what aspect of the vegetation respondents found interesting. The third question eliciting a

² All three of these questions elicited more than one response from at least some of the respondents.

³ The percentages in the original report were recalculated to reflect valid means of responses.

response regarding vegetation was, “What did you find most disappointing about the highlands?” Of those responses naming a specific disappointing feature, lack of vegetation was 11% of total responses (Bjarnason *et al.*, 1996). Perhaps it is more useful to rephrase the original statement, “Tourists do not want to see trees in Iceland” (Eysteinnsson and Curl, 2007). Based on the seeming indifference of foreign tourists towards Icelandic vegetation, a more suitable form of the statement might be “Vegetation is not an issue for most foreign tourists. They come to Iceland to see those natural features such as glaciers, lava fields and vast highlands that have been marketed as being unique to Iceland.”

Based on personal experience at the IFS, there has been almost no active marketing of forests as recreational areas in Iceland. What has been done was directed to the domestic market. Foreign tourists receive less than 30% of their pre-trip information about Iceland from friends and relatives who have visited the country (Icelandic Tourist Board, n.d.). This means 70% receive their information from the internet, brochures, guide books and other venues actively marketing Iceland. In a study by Bo Holm Kristensen (2005) on the marketing of Icelandic forests and availability of information about forests in Iceland, he found there was virtually no information available to foreign tourist about Icelandic forests in any media. Kristensen (2005) goes on to quote a Danish colleague as saying, “When you think of Iceland, you think of geysers and a windy, rockbound landscape. Maybe this is because brochures on Iceland don’t show anything else”.

Whether the majority of foreign tourists do not choose forested areas in Iceland for recreation because of a lack of interest or lack knowledge is unknown. However the statement “Tourists do not want to see trees in Iceland” places all tourists into one homogeneous group. As pointed out by the British Tourist Authority (Pigram and Jenkins, 1999) and Shafer (1969) there is no average recreational person whose preferences may be taken as typical of the whole. While it is impractical to provide recreational opportunities on an individual level, placing tourists into one group limits the provision of recreational experiences, and ignores potentially significant markets. It is therefore necessary to examine the domestic market to determine if there is a significant demand for provision of recreational opportunities in forests.

1.2 Visitors to forests

The total number of leisure tourists in Iceland for 2003 was 436,543 (IMG Gallup, 2003). Of these, 20% were domestic tourists. While this group is underrepresented in tourist research, it is a sizable market and one deserving closer attention by those providing leisure opportunities in Iceland. Because of the lack of research it is impossible to give accurate figures for domestic tourism patterns and numbers that would provide an insight into the importance of forests for recreation to these tourists. The following statistics were compiled by using a variety of surveys and other resources. While they are not complete, they do provide a reasonable representation of the use of camping facilities in rural forests and day-use in peri-urban forests.

In 2003, 81% of Icelanders between the ages of 18 and 80 took trips within Iceland, 41.7% of these were leisure trips (IMG Gallup, 2003). The average number of nights spent away from home on leisure trips was 12 and 24% of those surveyed reported they stayed in tents, tent trailers or caravans. Most trips were taken in June, July and August. Combining these percentages with the number of people within this age category (Hagstofa Islands, n.d.), there were just over 39,800 Icelanders camping in 2003. In the same year 4,367 Icelanders camped in Hallormsstadur National Forest.⁴ This means 11% of all Icelanders camping during the 2003 season did so in Hallormsstadur Forest. Another forest with opportunities for camping and for which figures are available, Vaglir National Forest, in the north, had an additional 7% during the same year. The Icelandic Tourist Board lists the names and locations of campgrounds submitted to them by regional tourist information centers on their website. The only criterion for being listed is that campgrounds must meet minimum standards set by the health department (Visiticeland, email, 29 Sept. 2007). There are 91 campgrounds listed outside the Reykjavik area (Visiticeland.com, n.d.). Therefore the total number of campers in these two national forests represents a substantial share of the market, indicating a preference for forested areas by many Icelandic campers.

For peri-urban (day-use) forests in Iceland, there are only two with any use level figures. These are Heidmork near Reykjavik and Kjarni close to Akureyri. The Parks Department of the city of Reykjavik conducted a survey in 2005 to gauge the use of three of its parks

⁴ This number represents the total number of visitor nights for Icelanders reported by forest staff divided by the average number of nights individuals reported spending in Hallormsstadur National Forest during interviews conducted in 2005 (n=131)(Curl, unpublished data).

by residents of Reykjavik. It indicated that 67% of those surveyed had visited Heidmork during the past 12 months with an average number of visits of 4 per year. If those visiting Heidmork as part of a driving trip are subtracted, this represents 189,700 visits (IMG Gallup, 2005).⁵ Figures from Kjarni indicate there were 120,000 visitors in 2001 (Thorsson, n.d.). While there are no newer figures for Kjarni and it is not possible to use these figures to calculate the percent of people living in Akureyri who visited Kjarni for recreation, the population of Akureyri in 2001 was 15,635 (Hagstofa Islands, n.d.) indicating a relatively high percent of the total population visited Kjarni forest during the year.

Table 1-1 shows the number of guest-nights per 1,000 persons of the Icelandic population, for Hallormstadir and Vagfir National Forests for the years 1993 to 2006. The table shows the increase in guest-nights in these forests can not be adequately explained by the increase in the Icelandic population. While comparable figures are unavailable for the day-use forests of Heidmork and Kjarni, there is no reason to assume use rates for these areas have not increased in a similar manner.

There is no mandate for provision of outdoor recreation areas in Icelandic law. The only mention of recreational areas is found in a Nature Conservation Act (Stjornarrad Islands, 1999) giving the Environment and Food Agency and the Iceland Forest Service joint supervisory responsibility for the protection of recreational forests. What is meant by supervisory responsibility is not explained. Local governments are also given permission to take measures facilitating recreational use of lands in their jurisdiction (Stjornarrad Islands, 1999). Despite the lack of a legal mandate, the Iceland Forest Service has long considered provision of recreational opportunities in nationally owned forests as one of its four main goals (Blondal, 1991). The first mention found of outdoor recreational use of National Forests was in a letter written in 1950 by Hakon Bjarnason, then director of the Iceland Forest Service, where he writes:

⁵ These Figures are artificially low because the survey was limited to residents of Reykjavik and does not take into consideration surrounding population centres such as Kopavogur, Gardabaer and Hafnafjörður all of which are in the catchment area of Heidmork.

“The first forestry act was passed in 1907. Its purpose was to ensure that afforestation and protection efforts would begin, and in reality most large enclosures placed around forests and some eroded areas have become a kind of national park, that people frequently visit while traveling. The reason is partly because picturesque forest areas are rare here in Iceland and therefore attractive as camping areas for tourists, and also because other particular natural beauty is found in some of the areas. In 1928 and 1940 the forestry act was reviewed and revised. However nothing was added to the act that designates these as special national parks, even though in reality they are.”
 (Letter written as a response to an unnamed source, 27 March 1950, on file in the main office of the IFS; translation mine.)

Table 1-1: Number of guest nights per 1000 Icelanders for the period from 1993 to 2003 for the camping areas in Hallormsstadur and Vaglir National Forests.

	Hallormsstadur		Vaglir	
Year	Guest nights	GN/1000 persons	Guest nights	GN/1000 persons
1993	1938	7,34	5780	21,89
1994	8164	30,69	10148	38,15
1995	10116	37,89	10046	37,63
1996	10130	37,66	9220	34,28
1997	11456	42,27	12562	46,35
1998	5500	20,07	5809	21,20
1999	11056	39,91	12235	44,17
2000	15147	53,90	12994	46,24
2001	11441	40,14	8964	31,45
2002	17383	60,36	11534	40,05
2003	10918	37,78	9495	32,85
2004	11045	37,70	13072	44,61
2005	11634	39,30	9601	32,44
2006	15823	52,05	16917	55,65

Local forestry societies, non-government organizations under the umbrella of the Icelandic Forestry Association, also provide recreational opportunities in the forests they supervise. Provision of recreational areas is one of the Association's goals and can be found in the bylaws of its affiliates (Icelandic Forestry Association, n.d.). These areas are usually close to population centers and designated for day-use, whereas the Iceland Forest Service provides both day-use and camp grounds in the National Forests. However, the area of forested land under the supervision of IFS and IFA is limited and demand for forest recreation is increasing. It is not known if the amount of forested land these organizations are able to set aside specifically for recreational purposes will increase substantially in the near future.

Since 1996, the majority of new plantations in Iceland were established on private lands, mainly farms with grants from the Regional Afforestation Projects (Petursson, 1998; 1999). Only one (of several hundred) of the afforestation plans done for these new plantations has recreational use as its main goal. This is for an area in the West fjords designed as a future golf course (Jonsson, Bjorn B., email, 17 Sept. 2007; Asgeirsson, Sigvaldi, email, 17 Sept. 2007; Olafsdottir, Arnlin, email, 20 Sept. 2007; Jonsdottir, Valgerdur, personal communication, 3 Oct. 2007). This is not to say that these areas will have no recreational value, but it does indicate limited interest by private forest owners in providing recreational areas. Provision of such areas has a very low profit margin. Despite the popularity and relatively heavy use of the campground in Hallormsstadur and Vaglir National Forests, the combined profits average 795,342 Icelandic crowns per year (Gunnlaugur Gudjonsson, email, 24 Sept. 2007). This is only around 13,000 U.S. dollars which is a very low return rate. In addition to the financial aspects there are legislative constraints regarding liability that severely limit the attractiveness of recreational forestry for private entrepreneurs (Mitchell-Banks *et al.*, 2006). Fees are not taken in day-use areas and it is unlikely they would be accepted by the Icelandic public (Rametsteiner and Kraxner, 2003; Mitchell-Banks *et al.*, 2006). Not only is there no tradition for fees in such areas, but the existence of every-man's right of access to undeveloped land (Stjornarrad Islands, 1999) makes their collection problematic. In this atmosphere, provision of recreational facilities will undoubtedly continue as a public service provided by the Iceland Forest Service and forestry societies.

On lands supervised by the Iceland Forest Service, recreational planning and development was traditionally done by the head forest warden for the region. Individual regional managers made decisions regarding what, where, how and when management actions were taken based on their opinions of visitor preferences. This led to many attractive developments in the forests, but there were also mistakes. This is a well known problem in recreation management. In a study conducted by Hendee and Harris (1970) to test how well foresters' perceptions of user attitudes and preferences matched actual preferences, foresters were able to predict their visitors' preferences 75% of the time. While this is a seemingly high figure, it leaves 25% of cases where foresters were unable to predict actual visitor preferences. When the goal is maximizing scarce resources this is an unacceptably high number. Hendee and Harris (1970) found foresters' perceptions biased by vocal groups and the fact that foresters see and explain the forest in different ways than recreational users, depending heavily on what he calls selective perceptions,

“...men see what they look for and observe what they expect to see.” (Hendee and Harris, 1970, 762).

Similar results were found among Danish foresters, who were unable to predict preferences in 30% of cases (Jensen, 1993). There is some evidence suggesting this is the case in Iceland as well. Foresters have mentioned visitors' preferences for tidy forests, where deadwood is removed from the forest floor (Thor Thorfinsson, personal communication, 2003; Hreinn Oskarson, personal communication, 2003). However in a survey conducted for the Iceland Forest Service, respondents were asked to name one thing that makes a forest attractive for recreational use. Only 1.8% of those responding named tidiness (IMG Gallup, 2004, 41).

As in many other areas development of recreational infrastructures in Icelandic forests has been for the most part reactive rather than proactive. The lack of management plans for recreation areas leads to management by reacting to immediate problems rather than working towards specific goals. To date, intuition is the only tool available for planners and managers attempting to provide recreational facilities in Icelandic forest lands. A search for research and surveys of recreational use of Icelandic forests produced a total of seven⁶. These are listed in Table 1-2. Most of these are descriptive in nature and do little

⁶ Another study was done by the Forestry Association of Reykjavik in 1998, called *Aning i skjoli skoga*. However this was an unpublished paper and no copy of it is known to exist (Sigrudsson, Bjarni D., email, 9 June 2008). Therefore it is not included in this list.

more than indicate that forests are popular areas for recreation. While this is important, it provides little information useful for planning.

These issues are not limited to Iceland. Managers and planners throughout the industrialized world are faced with optimizing the use of limited funds and forest resources and a lack of research which would help them to provide a range of quality recreational opportunities (Hendee and Dawson, 2002; Pigram and Jenkins, 1999; Seabrooke and Miles, 1993). Because all sites and user groups are unique, a planner would ideally base decisions on in-depth studies of the site and its present and potential users. However given the logistical and financial restraints placed on the providing agencies, this is unrealistic in practice.

Table 1-2: List of studies found regarding recreational use of Icelandic forests.

Study name	Author	Year	Type of study
Forest recreation in Iceland	Sigurdur Blöndal	1991	Review article
Attitudes of the guests of Kjarni forest	Bergsveinn Thorsson	2001	Survey of the guests of Kjarni Forest
Travel patterns in Iceland 2003	IMG Gallup	2003	Survey of domestic travel, done on a national level
Attitudes towards Forestry	IMG Gallup	2004	Survey done on a national level
Survey of the guests of Hallormsstadur Forest	Sherry Curl	2005	Unpublished survey
Reykjavik	IMG Gallup	2005	Survey on recreation in Reykjavik
Survey of the guests of Heidmörk Forest 2005-2006	Herdis Fridridsdottir	2006	Survey of the guests of Heidmörk Forest

1.3 Development of recreation management theories

“Common sense is often a curious predictor of the truth; it causes us to suspect something is true long before science proves it to be so. Einstein understood this. So did Thoreau, Jung and Wright. They believed that an important connection existed-beyond learning, beyond culture-between the natural world and human beings. Their theories, some proven and some still debated, began with their own experiences and observations, and grew into concepts that have changed our views of life. Today, a growing number of scientists, educators, architects, designers and environmental thinkers are working from that same source of common sense, producing theories and scientific evidence that could be the most significant body of knowledge the design profession will consider for the next few years. This body of knowledge yields a compelling, if controversial, premise: that human beings have an innate or hereditary need to experience and affiliate with nature and this need for nature is an important determinant of our requirements for and responses to our environments.”
(Stewart-Pollack, 1996)

Recreation in natural settings has long been pursued by the upper classes with access to summer homes with extensive gardens and forest parks. Increased urbanization and developments resulting from the industrial revolution, made the importance of access to natural settings and recreational opportunities for the well being of the general public increasingly apparent. This is voiced in the writings of such authors as Thoreau (1851) and Marshall (1930). Olmsted (1865) wrote:

“There is a special reason why the reinvigoration of those parts which are stirred into conscious activity by natural scenery is more effective upon the general development and health than that of any other...The establishment by government of great public grounds for the free enjoyment of the people under certain circumstances, is thus justified and enforced as a political duty.”

While not founded in scientific investigations acceptable by modern standards, the benefits realized by spending time in natural environments were not unknown. This realization led to early efforts in Europe and North America to provide access for the general public to natural settings and what was known as the Parks Movement (Lambert, 2005). The first urban public park was opened in 1847 in Birkenhead, close to Liverpool in England (Wirral, 2007), followed by Central Park in New York City. Yosemite in California was the first park established for public use in a rural area and was designated in 1864, followed by Yellowstone in 1872 (Hendee and Dawson, 2002). Because of the early provision of recreational areas, much of the seminal research and theories regarding this subject was done in the U.S. It was not until the mid 1960's that research in this area began in earnest in the rest of the western world and the influence from North America

continues (Bell *et al.*, 2007). From this early work, five major theories emerged and remain the basis of current recreational planning and management (McCool *et al.*, 2007). These are: 1) Recreational Carrying Capacity, 2) Recreational Opportunity Spectrum, 3) Limits of Acceptable Change, 4) Visitor Experience and Resource Protection and 5) Benefits Approach to Leisure.

It is useful to review these concepts, their underlying assumptions and the lessons learned during their formation and application to recreational planning and management.

Early efforts to provide the public with benefits from recreation in natural areas were based on the assumption that realization of these benefits was dependent upon the contrast of natural areas to the crowded, highly developed environments of urban areas (Nash, 1976). This resulted in the emphasis on absence of other people and signs of human intervention on the landscape in recreation provision, in other words solitude and naturalness.

Emphasis on these two factors is found throughout the literature and is fundamental in a large part of nature recreation theory (Hendee and Dawson, 2002; Borrie and Roggenbuck, 1996; Hollenhorst and Jones, 2001; Pigram and Jenkins, 1999; Hammitt and Cole, 1998 and others).

During the late 19th and early 20th centuries these attributes were safeguarded by limited access of the general public to undeveloped lands. This situation changed with efforts begun in 1916 to provide greater access to forests and other undeveloped areas by improving the road systems both to and within parks (Hendee and Dawson, 2002). Despite the relatively small number of visitors in the early years, negative impacts to both the environmental and social values of these areas were a cause of concern. By 1936 this concern was being voiced by people like Lowell Sumner, a regional wildlife technician, who asked: “how large a crowd can be turned loose in a wilderness without destroying its essential qualities?” (Hendee and Dawson, 2002, 38). Both the number of visitors and concerns about their impacts increased steadily and in 1942 the terms *carrying capacity* and *recreational saturation point* were first used (Hendee and Dawson, 2002). By the 1950’s the numbers of visitors had risen into the millions (Carr, 2000). This rapid increase is attributed to what Clawson (1985) termed the four fueling factors: leisure time, income, access and population. As each of these factors increases there is a corresponding increase in visitor numbers in rural recreational areas. Although increases in these “fueling factors” took place in Iceland decades later, the same trend can be seen when kilometers of paved

roads and the number of camping trailers and recreational vehicles is compared with the combined number of guest nights for Hallormsstadur and Vaglir National Forests for the years 1995 to 2005 (Figure 1-1).

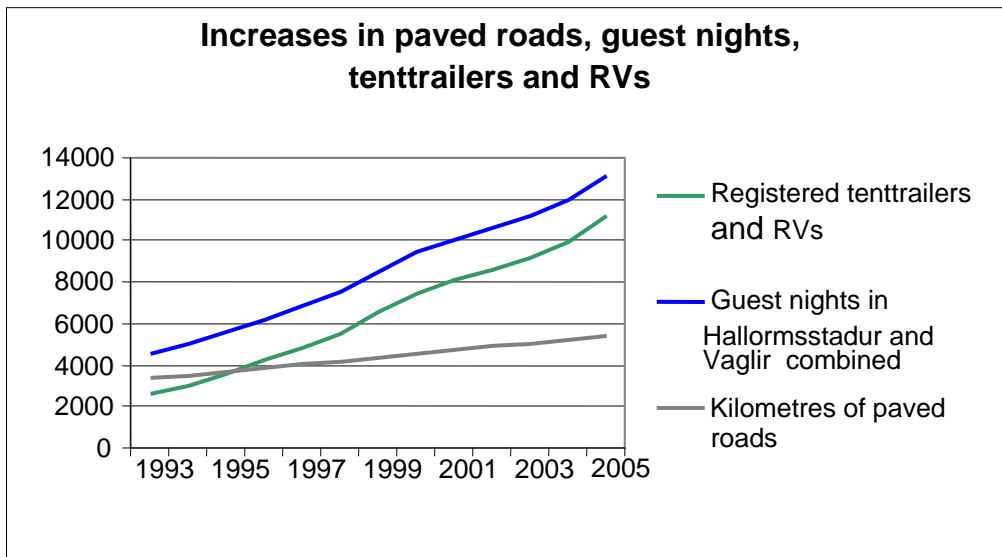


Figure 1- 1: Fueling factors for recreational use: increased guest nights at Hallormsstadur and Vaglir forests accompanying increases in paved roads and registered leisure vehicles (Vegagerd rikisins, 2006; Curl, unpublished data; Hagastofa Islands, 2006).

The possible usefulness of carrying capacity as a planning and management tool mentioned by Sumner in 1942 (Hendee and Dawson, 2002) was reiterated by Dana in a problem analysis done in 1957 (Lucas, 1987). The application of carrying capacity seemed to be the logical answer to the perceived problem of overuse. Odum's (1959) theory of carrying capacity was a fundamental concept in natural resource management. He defined carrying capacity as the maximum use an area can sustain beyond which limits no major increase can occur without resulting in severe resource damage. Although this theory was intended to explain biological phenomena, forest managers educated in biological resource management attempted to apply it to recreational management. Based on this theory, researchers and planners assumed linear relationships existed between the amount of use, negative impacts on natural resources and user satisfaction (Figure 1-2). Frissell and Stankey (1972) proposed that if use limits were set before the lines on the graph intersect, that point would represent the optimal number of people who could use a given recreational area before social and environmental impacts became serious and reduced users' satisfaction.

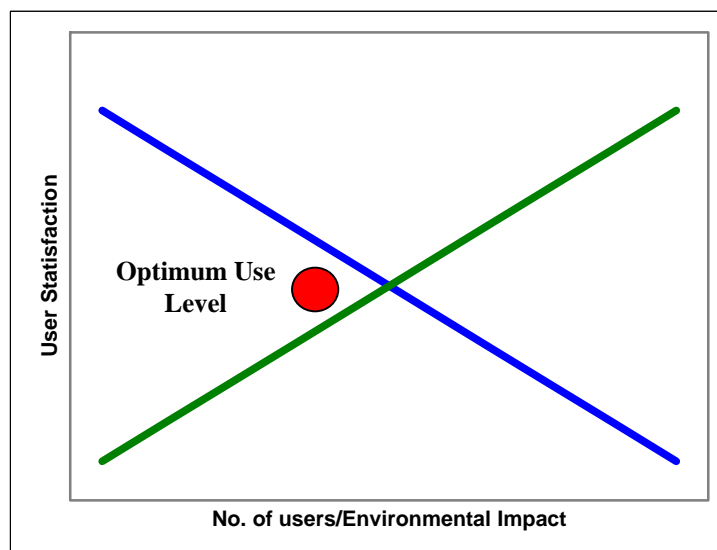


Figure 1-2: Determining use limits for recreation. The blue line represents user satisfaction and the green line represents negative environmental impact. The red dot represents the recreational carrying capacity. (Adapted from Hendee and Dawson, 2002.)

It was not long after the first theories regarding application of carrying capacity to recreation in the late 1950's that the research began to show that it did not adequately address the *recreational* carrying capacity of an area and that the basic assumptions were flawed. The assumption that negative environmental impacts occur in a linear manner was shown to be incorrect (Lime and Stankey, 1971). Kuss (1986) showed negative environmental impacts vary from one site to another based on ecosystem type. In fragile ecosystems negative environmental impacts occur rapidly with little use and taper off as use increases. Also, other factors such as type of use, time of use and user behaviour all have greater effects on the amount of impact than do number of users. The second assumption that recreationist satisfaction decreases as number of users increases also proved faulty; despite reporting encounters with more people in an area than they would prefer, users still rated their satisfaction with their recreational experience highly (Hollenhorst *et al.*, 1994). The relationship between the amount of environmental impact to an area and amount of satisfaction is also non-linear (McCool *et al.*, 2007). Visitors rated the amount of environmental impact consistently lower than forest managers. The amount of negative environmental impacts necessary to lower user satisfaction also varied from one area to another. In high density use areas, impacts had a smaller effect on user satisfaction than in low density use areas. As pointed out by Wagar (1964) and

demonstrated in subsequent research, a myriad of factors had greater effect on visitor satisfaction.

McCool *et al.* (2007) state:

“The experience of recreational carrying capacity in resolving the complex and often contentious issues associated with recreation and tourism development on public land is uniformly a failure” (38).

They go on to point out that even in cases where use limits were imposed; they often failed to solve the problem that caused their imposition (McCool *et al.*, 2007). Despite the inherent problems with recreational carrying capacity and use limits, they drew attention to the complexity of recreational land use management and helped identify aspects of recreation otherwise ignored by managing agencies. They also brought to light the high value placed on natural areas for recreation by the general public, and legitimised providing what was previously seen as an insignificant, non-commodity output from public lands (Lucas, 1987).

Problems encountered with recreational carrying capacity led managers and researchers to search for new planning and management theories and frameworks, resulting in the development of the Recreational Opportunity Spectrum (Clark and Stankey, 1979). Research undertaken during attempts to establish recreation carrying capacities showed that users react differently to different environments and choose to participate in a spectrum of recreational pursuits in a variety of settings. Planners were aware of the necessity of providing a variety of outdoor recreational opportunities. This awareness is demonstrated in the early writings of Olmsted, Carhart, Leopold and Marshall (Hammit and Cole, 1998). In 1951, Wagar, a professor of forestry, called for the provision of outdoor recreational opportunities spanning “the flower pot at the window to the wilderness” to appeal to varying abilities. The importance of a wide range of opportunities was well documented by Shafer (1969) who declared “the average camper does not exist” and that management plans based on serving this mythical recreationist will fail to serve the needs of the great majority or recreationists.

The underlying goal of the Recreational Opportunity Spectrum is to define a continuum of recreational settings, each capable of providing specific recreational opportunities. This is done by defining broad classes of opportunities, identifying indicators for the desired or

necessary setting attributes for the various opportunities and setting standards to demarcate them. This allows recreational areas to be planned in a manner optimising the potential number of opportunities provided in a given area. The three factors included in the Recreational Opportunity Spectrum are: activities, settings and experiences (Hammitt and Cole, 1998). Earlier work had shown it useful to define three different aspects of settings. These are: 1) biophysical resources, cultural-historical resources and relatively permanent recent human constructions, 2) social settings include the number of people present, their behaviour and type of recreational use, and 3) the managerial setting referring to the amount of management infrastructure, presence, service, rules and regulations. These three factors are used to inventory an area and compare its attributes to the opportunity classes, giving planners an idea of what type of opportunities can be offered in the area.

The Recreational Opportunity Spectrum was developed for the U.S. Forest Service (McCool *et al.*, 2007). The framework consists of six opportunity classes ranging from primitive with little or no human structures and management actions to urban allowing for significant human presence and environmental manipulation. It was first applied as a planning framework in 1976 and has since been applied to recreational and other planning situations around the world. It is the main planning framework used in Australia and New Zealand (McCool *et al.*, 2007). By inventorying an area to map appropriate opportunity classes and matching these to the desired recreational activities, it is relatively easy to divide an area into prescriptive management zones (Hendee and Dawson, 2002). Conceptually there is no reason for adhering to those classes defined by the U.S. Forest Service. The classes used as well as the indicators for their demarcation can be redefined to fit the user's planning objectives. The only requirement for implementing the Recreational Opportunity Spectrum is that attributes used as indicators must be: 1) observable and measurable, 2) related to recreational preferences and site choice, 3) under management control and 4) a range of attributes must exist (Clark and Stankey, 1979).

There has been little criticism of the Recreational Opportunity Spectrum. It is however felt by some to be difficult to use and it requires the collection and integration of biophysical and social information. Many recreation and forest planners are not familiar with the complex social issues and argue for "areas of responsibility". However, lack of integration of biophysical and social aspects of recreation results in a type of planning "approaching operationalism" (LaPage, 1963, 32). There has also been a tendency for planners to use

the original classes and ignore the possibilities of developing a spectrum specific to their planning requirements (Moore *et al.*, 2003; Nilsen and Taylor, 1998). However, perhaps the biggest problem in utilising the Recreational Opportunity Spectrum is that while it is well suited to informing planners what types of recreation they can supply in their area, it does not provide an answer to what type of recreation they should provide.

In the absence of alternative frameworks for planning and managing recreational areas and because of growing concern over the protection of both biophysical and social resources, recreational use limits based on recreational carrying capacity were first put in place in 1972 despite the contradictions and inadequacies of this system (McCool *et al.*, 2007). Use limits were subsequently implemented in other areas and made a requirement for General Management Plans of the U.S. Parks Department in 1978 (McCool *et al.*, 2007). User limits met with great public dissatisfaction and proved impossible to implement in many areas. Researchers, who were well aware of the problems inherent to user limits, attempted to formulate a more effective framework for planning and management.

These attempts led to several independent research projects and new planning frameworks. Among these were the Limits of Acceptable Change (Stankey *et al.*, 1985), Visitor Impact Management (Graefe *et al.*, 1990), Carrying Capacity Assessment Process (Shelby and Heberlein, 1986) and Visitor Experience and Resource Protection (Manning *et al.*, 1995). Although these are similar in general terms, it is the Limits of Acceptable Change and the Visitor Experiences and Resource Protection frameworks that gained prominence and are most widely used (McCool *et al.*, 2007).

Of these the best known is the Limits of Acceptable Change (McCool *et al.*, 2007). Whereas recreational carrying capacity focuses on the question of how much use is too much, and equates use to negative environmental and social impacts, the Limits of Acceptable Change approach focuses on defining the desired conditions for the area. Changes in an area are inevitable, but there is point at which the amount of difference from desired conditions becomes unacceptable and management actions must be taken to reduce it. This framework is especially useful in areas of multiple-use with the potential for conflicts. An example of this is the harvesting of Christmas trees in an area where the main objective is recreation. While recreational users may prefer that no trees are harvested from the area, there may be a certain number of trees that can be removed

without impacting the area's recreational values. This is the limit of acceptable change. The primary objective, in this case recreation, is compromised to the acceptable limit at which point the secondary objective, harvesting trees, is compromised to allow the continued realisation of the primary objective.

The Limits of Acceptable Change approach is built upon a nine step procedure (Table 1-3) and its authors emphasise that for the planning framework to succeed, the steps must be taken in the correct order and none omitted (Stankey *et al.*, 1985).

This framework proved to be very useful and is now used in many countries outside the United States, including Australia, Malaysia and Belize (McCool *et al.*, 2007). It has also been utilised in other land planning situations (Brunson, 1998; Cole and McCool, 1998). However there are situations in which it can not be applied. These are:

- 1) When there are no conflicts between goals
- 2) When there is a conflict between goals, but one of the goals can not be compromised
- 3) When the planners cannot establish a hierarchy of goals
- 4) When it is not possible to write measurable and attainable standards (Cole and McCool, 1998).

Table 1-3: Comparison of planning processes used in the Limit of Acceptable Change and the Visitor Experience and Resource Protection frameworks.

Limits of Acceptable Change process:	Visitor Experience and Resource Protection process:
1. Identify area concerns and issues	1. Assemble the planning team
2. Define and describe opportunity classes	2. Define objectives
3. Select indicators of resource and social conditions	3. Map and analyse resources and visitor experiences
4. Inventory resource and social conditions	4. Establish a spectrum of desired resources and social conditions (basis for use zones)
5. Specify standards for resource and social indicators	5. Use zones to identify land use areas and alternatives
6. Identify alternative opportunity class allocations	6. Select indicators of resource and social conditions
7. Identify management actions for each alternative	7. Compare desired and current conditions
8. Evaluate and select an alternative	8. Identify probable causes of discrepancies between desired and existing conditions
9. Implement actions and monitor conditions	9. Develop and refine management strategies to address discrepancies
(Stankey, 1985)	(Manning, 1995)

While all the major planning frameworks are similar, Hof and Lime (1998), developers of the Visitor Experience and Resource Protection framework, describe the difference in the Limits of Acceptable Change and the Visitor Experience and Resource Protection processes as being issue-driven and goal-driven planning techniques where the driver is defined by the steps involved and the order they are carried out. The difference is subtle, but it changes planning emphasis. Because the Visitor Experience and Resource Protection planning framework is based on setting and working towards goals for an area rather than assuming conflicts exist, it is more resilient. The steps used in both the Limits of Acceptable Change and Visitor Experience and Resource Protection frameworks are shown in Table 1-3.

While there is no universally accepted planning and management framework for forest recreation, there is a consensus that setting objectives for an area is the key factor for successful planning (Hendee and Dawson, 2002). Without clearly defined objectives, management becomes reactive rather than proactive and may lead to areas slowly evolving in unexpected and undesirable directions. A popular example of this type of development was provided by Clark and Stankey (1979) where a series of unplanned management actions to address perceived demand and mitigate environmental impacts changed what was a pristine alpine lake with the ability to provide primitive recreational experiences into a highly developed camping facility offering a radically different type of recreation opportunity. The desirability of these types of changes in the area was never determined. Persons desiring primitive recreational opportunities were displaced. If an alternative area with primitive attributes does not exist, one type of recreational opportunity will have been lost.

In reactive management, it is the users who effectively make management decisions, for example where to locate trails and campsites. Provision of recreation areas without objectives and planning and little thought to location, attraction or logistics has been widespread (LaPage, 1963). While it is necessary to take users' preferences into consideration, recreational use of forestlands and other natural areas is only one of the many aspects that must be taken into consideration. Other factors such as area objectives including other uses, environmental and social impacts and economics must also be taken into account when allocating funding and forest resources for recreation (Cordell, 1976; Wagar, 1951).

It is not necessary to look outside Iceland to find examples of reactive management. Atlavik in Hallormsstadur Forest was traditionally a popular recreation area for day-use by local families. However increases in the number of persons from other areas of the country camping in Atlavik effectively displaced local people who no longer felt comfortable using the area (Local residents, personal communications, 2003-2006). Whether or not this change was desirable is not being questioned here, it is only being used to illustrate potential consequences of management actions taken without the existence of clear objectives.

There has been a tendency to discount the potential for negative environmental impacts in Iceland on the grounds that recreational areas in forests receive limited use (Eysteinnsson, Throstur, personal communication, 2006). Figure 1-3 shows an unplanned trail originally formed by the trampling of hikers resulting in soil erosion. The poorly constructed steps were a *post hoc*, reactive attempt to control the erosion problem. However, because of the practically unusable steps, hikers have formed a new trail beside them and opened another area to erosion. In its current location, erosion problems will only worsen on this trail. Instead of allowing the public to decide where the trail should be, management should have relocated the trail to a more resilient area and designed it to minimise erosion. Problems of this type will only increase with increased use of the forests.

Despite the realised importance of objectives in recreational planning, they are often lacking or overly general. Objectives such as “provide recreational opportunities” give managers no information regarding the amount or type of recreation to provide. Even objectives that seem somewhat clearer such as “provide a system of footpaths” leaves those planning and constructing the footpaths with insufficient information. Footpaths can range from physically demanding hiking to trails for all-abilities use each of which provides a different type of experience for recreationists and different challenges for planners.



Figure 1-3: Thorsmörk in southern Iceland (Throstur Eysteinnsson, 2006).

All of the recreational planning and management concepts described above address particular aspects of recreational provision. The only one listing goals or objectives is the Visitor Experience and Resource Protection model. Although establishing objectives is close to the top of the list, it does not supply a method for defining objectives. Therefore while it is possible to integrate the strong points of the various processes to form a useful planning tool, a method of defining objectives must be found. The first and most important question for recreational planners, regarding what types of recreational opportunities should be provided, remains.

Most recreational research and provision has been activity based (Clark and Stankey, 1979; Hammitt, 2004; Roggenbuck and Driver, 2000; Tarrant *et al.*, 1999; LaPage, 1963; Nilsen and Tayler, 1998). Research has shown a strong connection between preferred activity and settings, which is the basis for the Recreational Opportunity Spectrum. However Clark and Stankey (1979), developers of the spectrum, do not feel it is a complete planning system. They feel:

“The opportunity spectrum does not offer a prescribed formula for providing outdoor recreation opportunities. It does provide a systematic framework for looking at the actual distribution of opportunities and a logical procedure of assessing possible management actions” (Clark and Stankey, 1979,18).

Work done by Driver and Brown (1978) indicates four levels of recreational demands. These are 1) demands for activities, 2) situation attributes or settings facilitating these activities, 3) specific psychological outcomes beneficial to the individual and 4) economic and social benefits resulting from the benefits gained in level three. Clark and Stankey (1979) concur with Driver and Brown (1978) that level two demands do not exist independently of levels three and four, but are a prerequisite for attaining the higher levels. Therefore in order to define the objectives of recreational provision and better define the types of attributes or settings to best facilitate achievement of these benefits, it is necessary to link types of activities, facilities and settings and psychological benefits effectively combining input and output approaches. This combination would provide the type of realistic, relevant data necessary for defining area objectives in a meaningful manner.

According to the 2004 survey done for the Iceland Forest Service, forests are popular recreational areas for Icelanders (IMG Gallup, 2004). Figures showed 83% of Icelanders visited a forest in 2003. Less than 6% of those answering cited consumptive or involuntary

reasons such as work as their reason for visiting the forest. While the physical benefits of outdoor recreation are well documented, the same benefits can be gained in other environments and therefore do not explain the choice of forests as a venue for recreation. This indicates an underlying reason for the popularity of spending leisure time in forests. Early proponents for the provision of recreational opportunities in forests and other natural areas were intuitively aware of the unique opportunities of these environments for providing psychological as well as physical benefits as shown in the words of Olmsted (1865) at the beginning of this section. These early insights are now supported by research done by psychologists including Bargh and Chartrand (1999), Herzog *et al.* (1997), Kaplan (1995) and others dealing with stimulus monitoring, voluntary and involuntary attention and their psychological and physiological effects. There is also an increasing understanding of the beneficial effects and attributes of restorative environments (Herzog *et al.*, 2003; Berto, 2005). Aspects of this research provide insights into ways of facilitating realisation of many physical and psychological benefits in forested recreational areas.

1.4 Psychological processes

There is a long standing debate among professionals regarding the degree to which psychological functions are predetermined, commonly referred to as the nature *vs.* nurture question. While most professionals now agree that some functions are predetermined and others acquired (Roscoe, Paul, personal communication, 2008), there are still many unanswered questions regarding which of these are learned and to what extent environment influences them. However, there is agreement that some basic mental processes are predetermined (Young and Persell, 2000). Among the most important of these processes is the ability to process external stimuli on multiple levels and to use schemata to readily classify various elements in the environment to provide a basis for appropriate reactions. These mental processes are the result of countless years of evolution in forested and other natural environments and are therefore common to all people. Industrialized, human environments challenge and often overtax these innate mental resources (Wohlwill, 1974).

It is impossible for humans to monitor all external stimuli on a conscious level. Stimuli are therefore first monitored on a pre-conscious level and only those pertinent are transferred to

the conscious level. In order to attend to a given task, transfer of extraneous information from a pre-conscious to a conscious level must be inhibited, requiring both discipline and effort (Velmans, 1991). Conditions found in developed environments often increase the amount of stimuli that must be monitored at any given time and subsequent attempts to suppress the transfer of large amounts of these stimuli to a conscious level makes directing attention or concentrating on a task difficult, tiring or even impossible (Vanderburg, 2000).

William James put forth the theory of “voluntary attention” as early as 1892 (Kaplan, 1995). He used this term to describe the type of attention employed when the subject at hand is not interesting, but must be attended. James was aware that this required effort, but did not suggest the process could result in fatigue. Based on James’ work, Kaplan (1995) developed the theory of directed attention fatigue, a type of mental exhaustion. Directed attention fatigue is caused by prolonged, voluntarily inhibition of stimulus irrelevant to the task at hand. It does not matter if the task is enjoyable, any task requiring intense concentration pursued for long periods of time causes directed attention fatigue. The results of directed attention fatigue are inability to solve problems, high distractibility and irritability. It also makes behavior more short term oriented, prevents reflection and is a key factor in ineffectiveness and human error.

Restoration of the ability to direct attention is achieved by utilizing an alternative mode of attending that rests voluntary suppression of stimuli or directed attention. This can be done by attending to stimuli not requiring problem solving that are readily processed on an involuntarily level. The environment is therefore of critical importance for restoration of attention. According to Kaplan (1995), there are four attributes necessary for an environment to be restorative:

- 1) Being away from the environment that demands use of directed attention. This prevents the direction of attention to old unresolved problems by trigger stimuli.
- 2) The environment should be whole. An unrelated collection of stimuli or incongruent stimuli invites problem solving.
- 3) There should be compatibility between the environment and what a person wants to do, requiring little or no monitoring of one’s own behavior or that of others.
- 4) There should be stimuli in the environment that are fascinating but that do not require the use of directed attention.

The problems caused by directed attention fatigue are uncannily similar to the deleterious effects of developed environments and the benefits derived from recreation in more natural environments such as forested areas described by the early proponents discussed earlier in this paper. This is described very well in the early writings of wilderness proponents such as this by Robert Marshall (1930):

“...due to the fact that original ideas require an objectivity and perspective seldom possible in the distracting propinquity of one’s fellow man...Another mental value of an opposite sort is concerned not with incitement but with repose. In a civilization which requires most lives to be passed amid inordinate dissonance, pressure and intrusion, the chance of retiring now and then to the quietude and privacy of sylvan haunts becomes for some people a psychic necessity. It is only the possibility of convalescing in the wilderness which saves them from being destroyed by the terrible neural tension of modern existence.”
(Marshall 1930, 124)

Although specific mention of the restorative properties of natural environments is relatively recent in recreation and management literature, earlier work emphasized many of the same characteristics. For example, Hollenhorst *et al.* (1994) stated that solitude produces many outcomes including creativity and expression, awareness, self-actualization, retreat, escape, meditation and prayer. In the "primal hypotheses" White and Hendee (2000) list development of self, development of community and spiritual development as benefits derived from natural environments. All of these benefits are easily placed within the framework of Kaplan’s work as processes requiring reflection with limited monitoring of disruptive external stimuli demanding attention on a conscious level. This suggests a process or series of phases that can take place in such environments. First the recovery of directed attention and then a later phase of inward thinking, or problem solving leading to the benefits listed above. Although the research did not directly measure the process discussed here, the existence of similar phases of attention restoration during wilderness experiences were documented by Borrie and Birzell (2001).

The Benefits Approach to Leisure places emphasis on the third (psychological benefits) and fourth (social and economic benefits) levels of recreation demand mentioned by Driver and Brown (1978). Other planning frameworks are essentially activity-based, emphasizing the supply side of recreational provision (input) whereas benefits-based approaches concentrate on the demand side (output) (Borrie and Roggenbeck, 1995). Although there are no

definitive processes for planners to use, this approach has gained considerable attention in the literature. Hammitt (2004) has proposed a restorative rather than a recreational definition for leisure activities in forested and other natural environments. Borrie and Roggenbuck (1995) describe recreational use of natural environments as an antidote to the problems and pressures of everyday life.

The vital first step in recreational planning, defining objectives for an area, cannot be achieved until there is an understanding of what benefits (output) people are seeking from recreation in the forests. By identifying the benefits Icelandic forest visitors desire, clearer objectives can be defined for Icelandic planners. Not only does this approach offer a way of setting meaningful objectives for recreational forestry, it may indicate a means by which recreational land use can be justified in economic terms and ultimately protect forested land from being appropriated for other land uses, especially in peri-urban areas.

It is extremely important that those supplying recreational opportunities do so in a manner that not only optimizes use of limited funding and forest resources but also supplies the Icelandic people with quality recreational opportunities. The key to success of providing any type of service is an intimate knowledge of the customer. However, the type of data that would enable a recreational planner to determine, based on the attributes of a forest, what type of recreationist is likely to use the area and what they are ultimately seeking are lacking in Iceland. This study attempts to provide forest planners with an increased knowledge of the recreational demands of Icelandic forest visitors in rural and peri-urban forests. These data can be used to develop a revised form of the Recreational Opportunity Spectrum allowing planners to classify or zone the recreational potential of Icelandic forest lands by the attributes of specific forests.

In order to provide quality recreation, several factors must be taken into consideration when setting criteria for zoning. Among these are economics, the physical and ecological attributes of an area and the desires of recreationists. While it is relatively easy to predict the economic feasibility of developing and maintaining recreational infrastructures in an area, there is little information describing the desires of recreationists and therefore no basis for judging the physical or ecological suitability of an area for recreational development.

While the planning paradigms discussed above could supply a basis for developing such a classification or zoning system, all the paradigms are based on knowledge of the recreationists and differences in their preferences. This study is designed to try to identify the preferences of Icelandic forest recreationists and groups that can serve as a meaningful basis for developing a classification system for use in planning new recreational areas and managing existing areas to maximize resources and provide opportunities for quality recreational experiences. The Importance-performance estimate is a method of rating the quality of intangible services developed by Martilla and James (1977). This study also incorporates the Importance-performance Estimate model to gauge the level of current user satisfaction and as a guide for needed management actions. This estimate can also serve as a baseline for developing quality standards for recreational forests.

Materials and methods

To identify differences that may exist among Icelandic recreationists, an analysis of the preferred infrastructure level, environmental setting, desired benefits and standards was conducted. The first steps in this study were to develop and administer a user survey to provide relevant data.

2.1 The study areas

Two large recreational user groups in Iceland are day-users of forested peri-urban areas and overnight users of rural forestlands. Forest use by these groups is heaviest during June to August (Unpublished forest wardens' reports, on file at IFS main office). Therefore the summer guests of these two types of forests are the groups of interest for this study.

Several forests in Iceland provide these opportunities. However because of logistics (the presence of summer staff for recruiting volunteers), the day-use forests chosen were Heidmörk near Reykjavík and Kjarni near Akureyri. The forests with overnight facilities chosen were Hallormsstadur in eastern Iceland and Vaglir in northern Iceland. This provides a two by two pairing for the study.⁷

2.1.1 Day-use forests

Heidmörk

Heidmörk is located about 10 km ENE of the center of Reykjavík. This makes it easily accessible from Reykjavík as well as the townships of Hafnafjörður, Gardabaer and Kopavogur. In 1949, 1,350 hectares of land were set aside to establish Heidmörk as a recreation area for the people of Reykjavík. Since that time additional land has been added and the holdings are now between 3,000 and 3,200 hectares. Of this, about 800 hectares are forested. Natural birch woods and exotic conifers are almost equally represented, 21% and 20% of the total area respectively (Skograektafelag Reykjavíkur, n.d.). Most of the plantation areas are close to roads and trails giving the impression of a large exotic component. The landscape of Heidmörk is generally flat with a few low hills. The land is

⁷ An attempt was made to include another pair of forests, Selskogur near Egilsstadiur in eastern Iceland and Þorsmörk in southern Iceland. This however proved impossible. The number of visitors to Selskogur was too low to be useful for analysis and the survey volunteer lists for Þorsmörk were misplaced.

owned by the city of Reykjavik and administered by the Forestry Association of Reykjavik.

There is a moderate amount of recreational infrastructure in Heidmörk including extensive trails (Skograektafelag Reykjavikur, n.d.), picnic facilities, restrooms and parking areas. Heidmörk is a popular area for outdoor recreation during all seasons. A survey done in 2005 indicated that 32% of the population of Reykjavik visit Heidmörk each year (IMG Gallup, 2005).

Kjarni

Kjarni is located about 4 km south of Akureyri in northern Iceland. Kjarni Forest was established with the protection of 14 hectares of land in 1946. Since that time, land has been added to the forest and presently Kjarni is approximately 800 hectares (Indridason and Sigfusson, 2000). The land is owned by the city of Akureyri and administered by the Forestry Association of Eyjafjordur. The forest itself is composed of both planted native birch and exotic conifers with a ratio of approximately 40% birch and 60% exotic conifers (Indridason, Hallgrimur, email, 26 April 2008). The landscape of Kjarni is for the most part gently sloping hillsides and some level valley bottom land.

Kjarni Forest has a well developed recreational infrastructure. This includes playgrounds, picnic areas, restrooms, parking areas and trails. One of the trails has lighting and is used by joggers year-round and skiers during the winter months. In 2000, visits to Kjarni Forest were estimated to be 150,000 per year (Indridason and Sigfusson, 2000).

2.1.2 Overnight use forests

Hallormsstadur National Forest

Hallormsstadur National Forest is located approximately 27 km south of the village of Egilsstadir in eastern Iceland. It is the oldest and largest of Iceland's National Forests. Hallormsstadur was established in 1905 when remnant birch woods were fenced (Guttormsson and Blondal, 2005). Since that time adjoining estates have been acquired by the Iceland Forest Service and the holdings are now approximately 12,000 hectares, 851

hectares of which have been surveyed and mapped. The forested area of Hallormsstadur estate is 623 hectares. Of these, native birch forests cover 440 hectares and exotic species 183 hectares (Heidarsson, Larus, email, 25 April 2008). Despite the large birch component of the forest, conifer plantations are concentrated in the easily accessible, heavy use areas of the forest giving the impression of a higher percent of conifers than the figures indicate.

Hallormsstadur is the headquarters for the eastern division of the Iceland Forest Service and the home of the forest warden for eastern Iceland. There are numerous forestry buildings in the forest including staff housing, workshops and greenhouses. There is also considerable recreational infrastructure including trails, restrooms, an arboretum, picnic facilities and two campgrounds on the shores of the river, Lagarfljot. The older of the campgrounds, Atlavik, is one of the best known recreational areas in the country (Blondal and Gunnarsson, 1999). The campgrounds have playground equipment, restrooms and grilling facilities. The newer campsite, Höfdavik, was designed by a landscape architect and in addition to the facilities found at Atlavik includes showers and electric hookups.

Vaglir National Forest

Vaglir is located in Fnjoskadalur, a valley approximately 14 km WNW of Akureyri, as the crow flies, but is a half hour's drive. The forest was obtained by the state in 1901 and protected from livestock grazing in 1909. At this time the total protected area was 378 hectares. Through the years adjoining lands were added to the forest. Vaglir estate is currently 705 hectares, 374 of this is forested. The forested area consists of 298 hectares of native birch forest and 76 hectares of exotic conifer plantations. The use of exotic species in this forest is now limited and priority given to increasing the area of native birch stands (Isleifsson *et al.*, 2006). For the most part the forest is located on the side of a mountain, but there is some level valley bottom land.

Vaglir National Forest is the headquarters of the northern branch of the Iceland Forest Service and the home of the forest warden for northern Iceland. There are numerous buildings in the forest including housing, greenhouses and workshops. There are also recreational facilities in the forest including campgrounds, restrooms, showers, playground equipment and approximately 15 km of hiking trails. The campgrounds are located some distance from the shores of the Fnjoska River, a popular trout fishing river.

Both Hallormsstadur and Vaglir are managed as multiple-use forests including the production of firewood and small amounts of timber. A large number of research plots are located in the forests, mostly in Hallormsstadur Forest. Three of the forests, Hallormsstadur, Vaglir and Heidmörk have stands for Christmas tree production.

Before the final decision regarding the use of these forests in the study, the appropriate agencies were contacted. Upon their agreement to participate, the forest wardens were contacted and their cooperation requested. All four agreed to allow the study to be conducted in these forests and volunteered the use of summer staff to recruit survey volunteers.

2.2 Questionnaire

2.2.1 Development

The questionnaire was designed to provide five categories of data. The first contained basic demographic information about the respondent, travel patterns, and the type and composition of the social group visiting the forest. The second category was designed to determine the importance respondents placed on various infrastructures and the physical and environmental attributes of the forest. The third data category concerned the level of visitor satisfaction with the current conditions of these attributes. The fourth category concerned the types of benefits respondents felt they received as a result of their forest visit. The fifth category was a collection of practical questions requested by the Iceland Forest Service, the forest wardens and other professionals.

The method of collection of questionnaire responses and questionnaire format were guided by published manuals and recreational surveys including those by Shafer and Hamilton (1967), Clark and Stankey (1979), Nickerson *et al.*, (2005), Watson *et al.*, (2000), Manning and Lime (2000), Gregoire and Buhyoff (1999), Bright *et al.*, (2003), Chavez (2001) and Skov-Petersen and Jensen (2004).

Based on these and the desired data, a self administered, mail-in questionnaire and a follow up of two letters to non-respondents was chosen for this study. The desired return rate for the questionnaire was placed at 60%. Despite the generally low return rates of mail-in

surveys, often less than 50% (Bright *et al.*, 2003, 44), this method was preferred for two main reasons. First it did not interfere with the recreationists' forest visits and second it allowed respondents to answer the questionnaire in their own time, avoiding the impatience that an on-site survey might cause (Kim and Shelby, 2006).

The question format was designed to keep respondent burden as low as possible and was dictated by the type of data required. Most of the questions were closed ended and responses were in the form of a 6 point Likkert type scale. For most questions respondents were given a "have no opinion" option and provided with lines at the end of each question for additional information they wanted to provide. The rating scale in the second set of questions ran from negative to positive responses. This order was reversed in the fourth section and questions using different answer formats were placed in several places to prevent automatic responses.

Respondents to forest recreation surveys tend to rate their overall satisfaction with their forest experience very highly. This has been termed the "halo effect" (Noe and Uysal, 1997). To minimize this effect questions requiring respondents to recall their forest experiences and rate current conditions in the forest were placed in the last section.

The subject material for the questions was based on the resources cited above and survey research published by Warzecha *et al.*, (2001), Daigle *et al.*, (1994) and Littlejohn (2003). Classification of and questions regarding benefits accruing to forest visitors were taken from Behan *et al.*, (2000) and Manfredi *et al.*, (1996).

Two questionnaires were developed. One was used in the day-use forests and the other in forests with camping areas. The order of the questions was similar in both questionnaires. The main data categories were presented in the same order and the rating scales were identical for both forest use types. The only differences in the two questionnaires used for the day-use forests were the name of the forest. The same was true of the forests with camping areas. The difference between the questionnaires for day-users and questionnaires for campers was based on the pertinence of the questions to the specific forms of forest use.

The questionnaire was then sent to nine forestry professionals and a social science professional for review. The forest wardens from the four study areas were included in the group of forestry professionals. Forest wardens were given the opportunity to add questions of special interest for their areas. Six questions were added to the questionnaire as a result of the review and one question was removed. After the recommended changes had been considered and the questionnaire revised, it was piloted using a group of 7 non-forestry staff of the Iceland Forest Service and the Regional Afforestation Project Heradsskogur. A meeting was held with these individuals and questionnaire clarity, length and wording were reviewed. This review resulted in minor revisions to question wording. The final questionnaires for day-use areas contained 114 questions on a total of 10 pages and the questionnaire used for camping areas had a total of 136 questions on 12 pages.

The format of the questionnaire was developed using the suggestions from the manuals cited above. It was printed front and back on A3 paper of good quality and folded to form a booklet. The name of the forest and a blank line for the questionnaire number was placed in the lower right hand corner of each page. A colored border was added to the title page as well as color photographs and the logo of the Iceland Forest Service. A sentence thanking the participants was added to the end of the questionnaire. Questionnaires were mailed along with stamped, addressed return envelopes and a cover letter. The cover letter and follow up letters were all printed on high quality neutral colored paper using the Iceland Forest Service header.

In the cover letter, respondents were asked to return their completed questionnaires within six weeks of its posting. To increase the return rate, volunteers were promised a copy of the Iceland Forest Service calendar as a token of appreciation.

Follow-up letters were sent to non-responding volunteers after the six week interval. A second follow up letter was sent to non-respondents three weeks after the first follow-up letter. (Facsimile copies of the two questionnaires can be found in Appendix A, an English translation of the questionnaire is in Appendix B and the cover letter and follow-up letters in Appendix C.)

2.2.2 Volunteer recruitment

Volunteers were recruited by summer staff in the four study areas. In Kjarni and Heidmörk older, personable summer staff were chosen by the forest wardens. In Hallormsstadur summer campground staff were used and in Vaglir the private contractor who oversees the campgrounds recruited volunteers. Staff members were given clipboards with preprinted forms for the names and addresses of volunteers. In Heidmörk and Kjarni, staff was positioned at trailheads near parking areas and used what is called “the next person by” method of recruitment. Staff members simply asked the first person they see to participate in the survey. After collecting the volunteer’s information, they approach the next person and so on. In the campgrounds, staff asked visitors to participate in the survey during regular evening rounds. Staff members were given a brief description of the study to use when recruiting volunteers. In Vaglir and Hallormsstadur additional signup lists were used. In Hallormsstadur the list was placed in the information cabin in Atlavik campground and in Vaglir in the small concession shop located adjacent to the camping areas. A sign was posted with each list briefly describing the study and asking people to volunteer. All volunteers were asked to sign the list themselves. This was done to increase the volunteers’ sense of commitment. Volunteers were recruited from mid June to late August of 2007. The lists of volunteers were returned to the main office of the Iceland Forest Service in early September.

Upon receiving the lists of names, a member of staff at the Iceland Forest Service recorded the names, addresses and forests visited. These were kept in the Forest Service’s computer system. All volunteers with Icelandic addresses were given a number and the questionnaires marked with that number. The questionnaire packets were mailed on 22nd October 2007. If these were returned as undeliverable, attempts were made to re-send them. If respondents had overlooked pages when filling in the questionnaire, these were photocopied and sent along with a stamped, addressed envelope and letter explaining the oversight asking that they be completed and returned. After sending respondents calendars in December, their names and addresses were deleted from the computer. The only data remaining were the survey numbers, whether the questionnaire was returned and the postal codes of the respondents. The sign up sheets collected in the forests were destroyed. The overall rate of return was 61% (Table 2-1).

Table 2-1: Return rate for a survey of forest users done in 2007 in two overnight forests (Hallormsstadur and Vaglir) and two day-use forests (Heidmörk and Kjarni).

Forest	Number of persons who signed up	Number of questionnaires returned as undeliverable	Percent of returned questionnaires	N
Hallormsstadur	103	3	55	56
Vaglir	132	1	71	93
Heidmörk	141	4	56	77
Kjarni	42	3	62	24
Total	418	11	61	250

Responses to the questionnaire were recorded upon their arrival at the Forest Service offices. One questionnaire was judged invalid and destroyed. All recording of responses was done in Microsoft Excel 2003. The returned questionnaires are on file at the main office of the Iceland Forest Service.

2.3 Data analysis

Because of differences in the sequence and number of questions on the two forms of the survey, the first step was the standardization of the question numbers. Questions were coded using the question number from the camping questionnaire and letters to denote the four forests (Table 2-2). When interest groups were analyzed, a letter was added to denote the appropriate group. Tables indicating code letters for these groups are found in the pertinent sections of the results section.

Table 2-2: Code letters used for the forests throughout this study.

Forest	Code letters
Hallormsstadur	HL
Vaglir	V
Heidmörk	HM
Kjarni	K

Standardization of the response scales used the least desirable - i.e., the lowest rating for current conditions - as the smallest scale number. Data to be used in the importance-performance analysis were paired with the appropriate data from sections two and three and analysis done on a forest-by-forest basis. Questions that proved difficult for respondents to answer were not included in the analysis. These will be discussed at the end of the results section. Responses of “have no opinion” and non-responses were recorded as 0 and not included in the analysis. Responses to open ended questions were standardized for evaluation.

For the purposes of analysis, the responses for desired attributes were compared across three *a priori* groups: 1) social groups (Shafer, 1969), 2) benefit groups (Manfredo *et al.*, 1996; Behan *et al.*, 2000) and 3) by forest visited. The indicator-performance estimate was done on a forest by forest basis using all responses.

2.4 Miscellaneous questions

This group contained questions added by those who reviewed the questionnaire but not directly related to the study. These include question numbers 54-55, 65-67 and 112 for Hallormsstadur and Vaglir and questions 57 and 89 for Heidmörk and Kjarni. Responses used to determine the catchment area of the forests were based on questions 7 and 64 for Hallormsstadur and Vaglir and 6 and 48 for Heidmörk and Kjarni. For determining the home of participants, postal codes from the mailing lists of volunteers were used and include non-respondents. Travel patterns for domestic camping holidays for respondents were evaluated for Hallormsstadur and Vaglir using questions 16 and 17.

2.5 Statistical analysis

The method of data analysis in this study varied with data type. Microsoft Excel 2003 was used to record the data and calculate median, means, percents and frequencies. Sigastat 3.5 (Systat Software Inc.) was used for determining distribution normality, correlation, and one tailed analyses of variance. All data were tested for normal distribution and all failed. Therefore tests appropriate for non-parametric data were used. This included: Spearman's Rank Order Correlation test, Mann-Whitney's Rank Sum test for data sets with one degree

of freedom, and Kruskal-Wallis' One Way Analysis of Variance on Ranks for data sets with more than one degree of freedom and *post hoc* testing was done where the ANOVA indicated a significant difference using Dunn's method for pairwise comparisons. This was done to ensure the validity of the significance found in the ANOVAs. The confidence level was set at 95% for all tests. (ANOVA Tables are found in Appendix D.)

Results

3.1 Demographics

Gender of respondents (Question HL/V 1 and HM/K 1)

The gender of respondents at each forest is shown in Figure 3-1. There were slightly more female respondents than male. The division by gender for all areas was female respondents 54% and male respondents 46%.

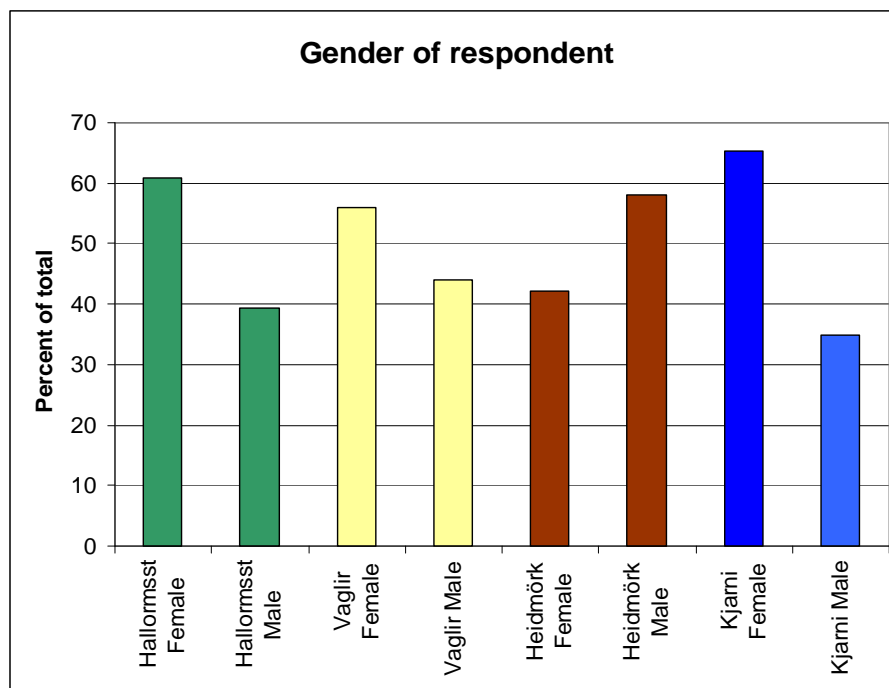


Figure3-1: Gender of respondents of the 2007 survey used in this paper in two overnight forests, Hallormsstadur and Vagfir, and two day-use forests Heidmörk and Kjarni. (n=227).

Age of respondents (Question HL/V 1 and HM/K 1)

The mean respondent age was higher in Heidmörk. This is due to a relatively small group of respondents over the age of 73. Therefore the median is a better indicator of respondent age. An ANOVA was done for age data and found only one significant difference. The ages of respondents in Hallormsstadur were significantly lower than those of the other areas (Figure 3-2).

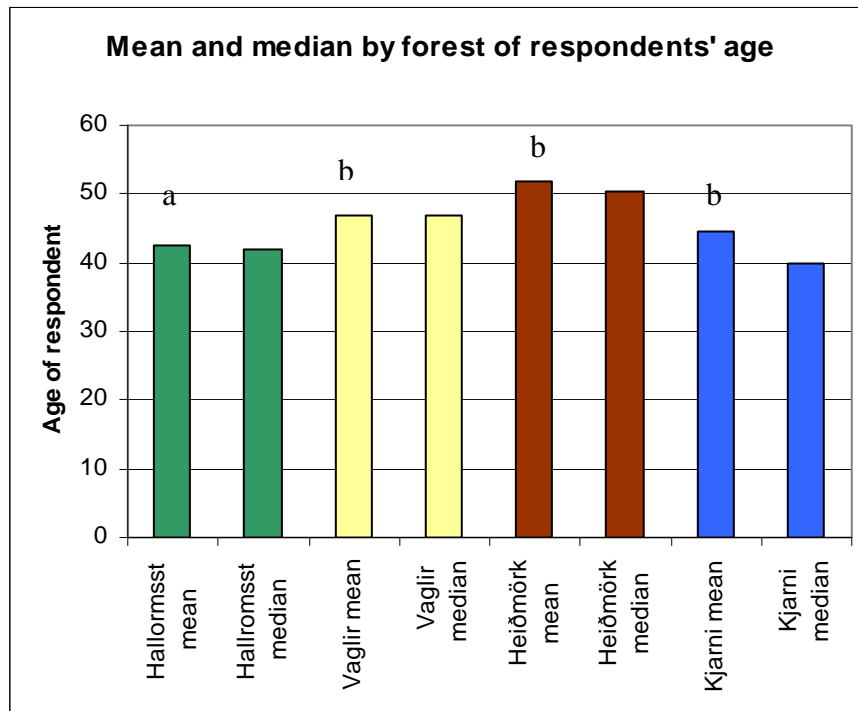


Figure 3-2: Mean and median age reported by respondents to the 2007 survey used in this study from two overnight forests, Hallormsstadur and Vaglir, and two day-use forests, Heidmörk and Kjarni. Letters indicate a statistically significant difference in the mean age for the forest. (n=209)

Educational level of respondents (Question HL/V 2 and HM/K 2)

Most respondents had a secondary school education. There were few respondents with a University level education in the sample group. The distribution of educational levels is shown in Figure 3-3.

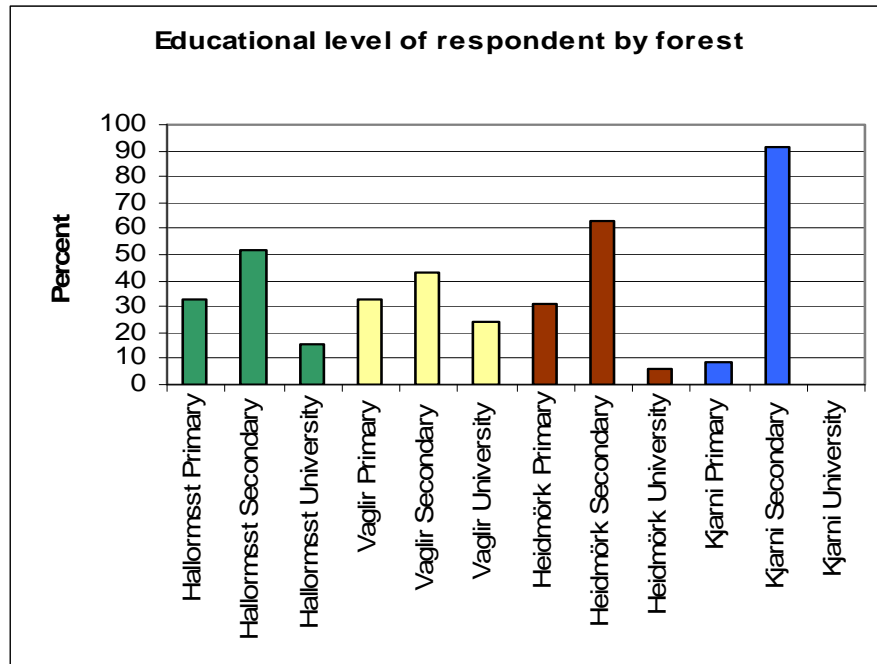


Figure 3-3: Education level of respondents for two overnight forests, Hallormsstadur and Vaglir, and two day-use forests, Heidmörk and Kjarni. (n=229)

Age classes of group members (Question HL/V 5 and HM/K 5) Figure 3-4 shows the age classes of the individuals accompanying the respondents on their forest visit. There was a considerably lower number of groups with persons older than 60 for Hallormsstadur.

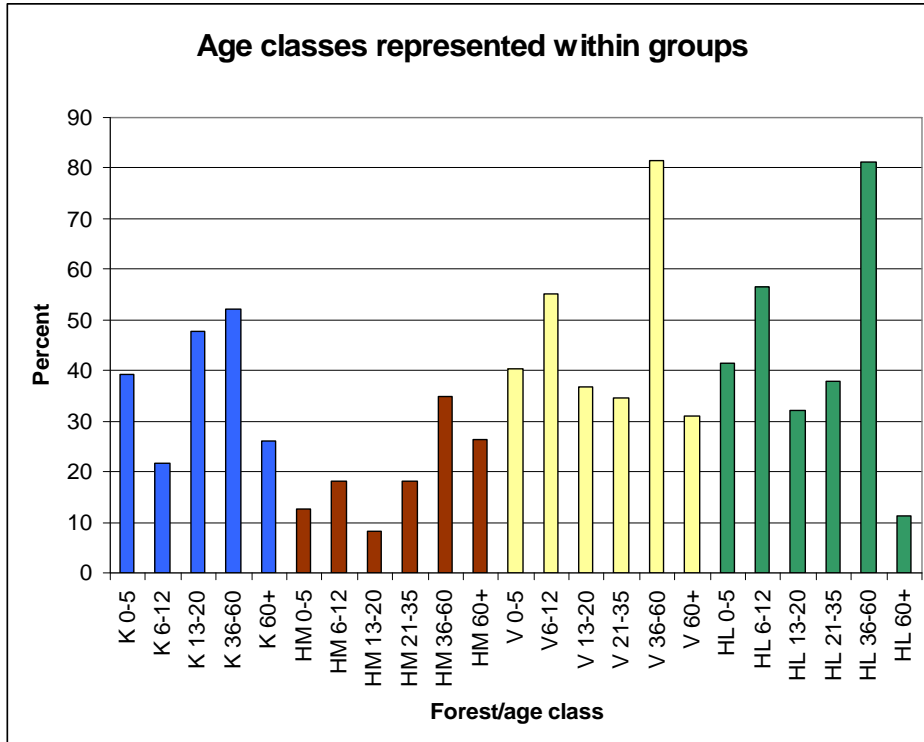


Figure 3-4: Age classes of social group members reported in the 2007 survey used in this study for two overnight forests, Hallormsstadur and Vagfir, and two day-use forests, Heidmörk and Kjarni.

Repeat visitors (HL/V 9 and HM/K 7)

Figure 3-5 shows the percent of repeat visitors and new visitors by forest. The vast majority of visitors to all forests were repeat visitors.

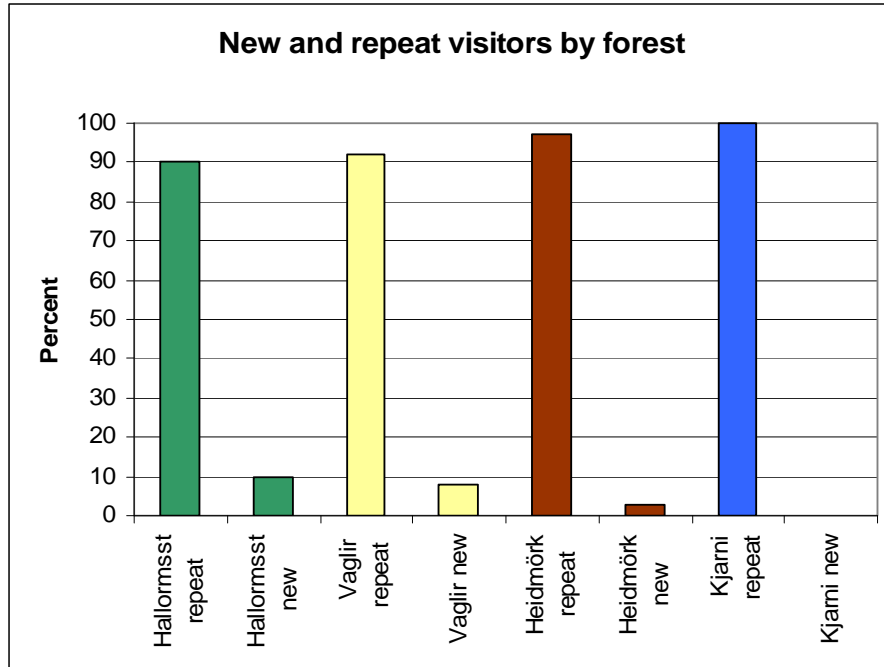


Figure 3-5: Percent of repeat and new visitors to two overnight forests, Hallormsstadur and Vaglir, and two day-use forests, Heidmörk and Kjarni. (n=233)

Visit frequency (Question HL/V 10 and HM/K 8)

Figure 3-6 shows the frequency of visits to Heidmörk and Kjarni on a yearly basis reported by all respondents. Most of the respondents reported several visits a year for both forests. However visits to Heidmörk were slightly more frequent than those in Kjarni.

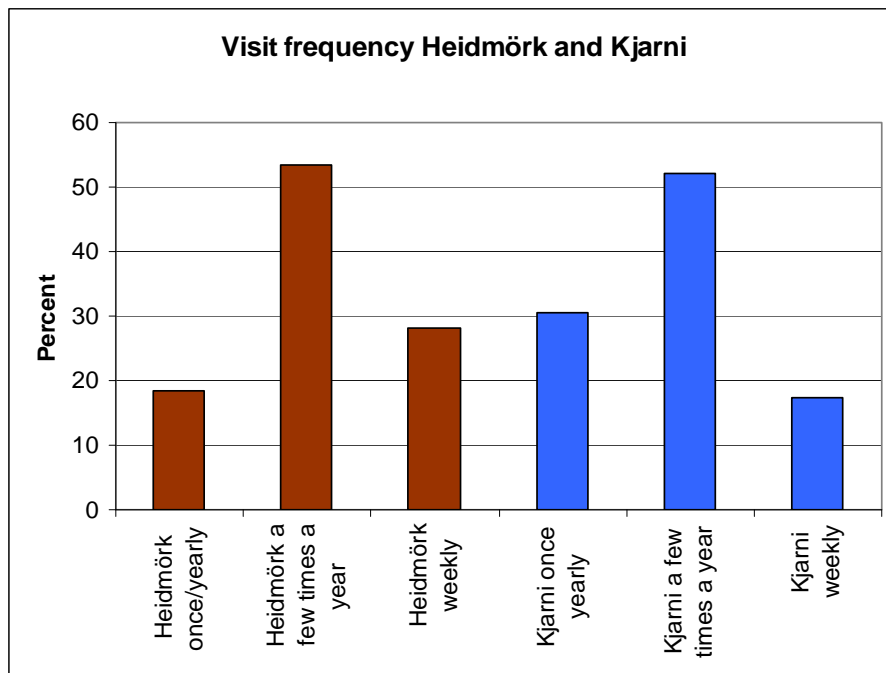


Figure 3-6: Visit frequency on a yearly basis reported by respondents to the 2007 survey for Heidmörk and Kjarni used in this study. (n=94)

Figure 3-7 shows the total number of times respondents reported having visited the forests of Hallormsstadur and Vaglir.

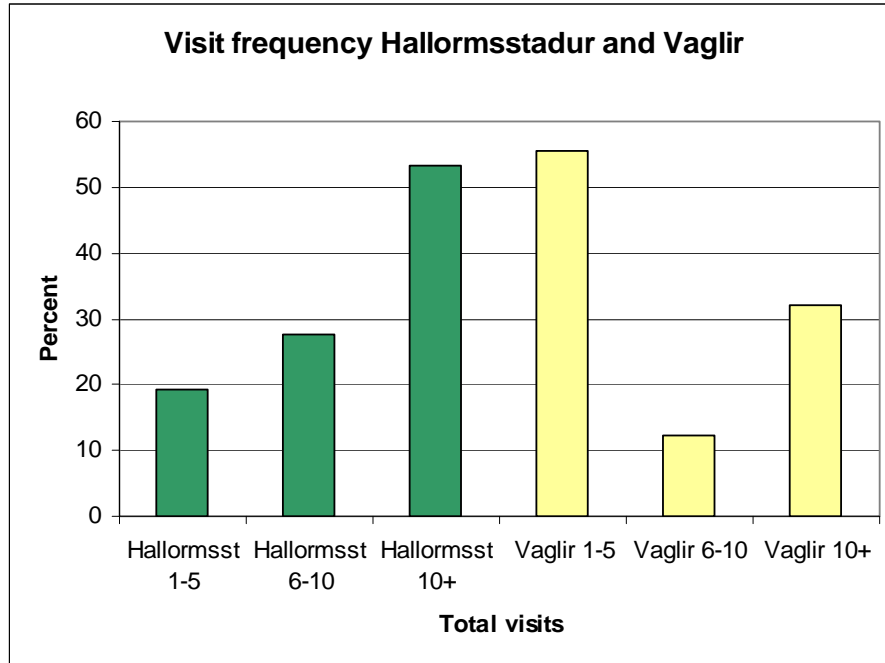


Figure 3-7: Number of total visits to Hallormsstadur and Vaglir forests reported by respondents to the 2007 survey used in this study. (n=128)

Times of visits (Question HL/V 14 and HM/K 12)

Figure 3-8 shows the days of the week when respondents visited the forest. With the exception of Hallormsstadur, which receives more visitors on weekdays, respondents visited the forests on both weekdays and the weekend.

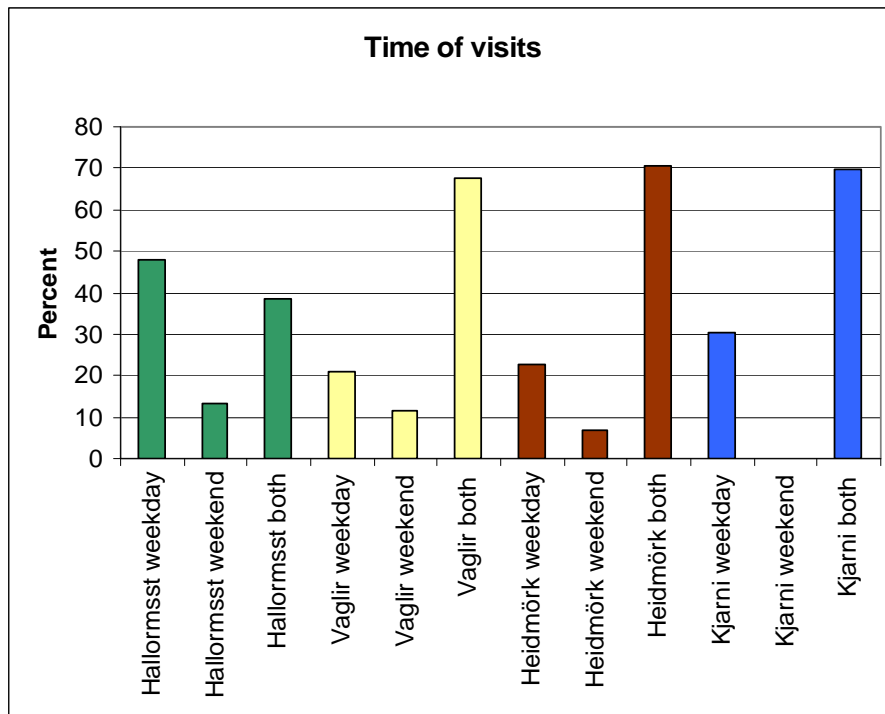


Figure 3-8: Time of week respondents reported visiting the two overnight forests, Hallormsstadur and Vaglir, and the two day-use forests, Heidmörk and Kjarni in the 2007 survey used in this study. (n=232)

Duration of forest visits (Question HL/V 11 and HM/K 9)

Figure 3-9 shows the duration of visits to Heidmörk and Kjarni in minutes. Most visits lasted from one to two hours and the pattern between the two forests was similar.

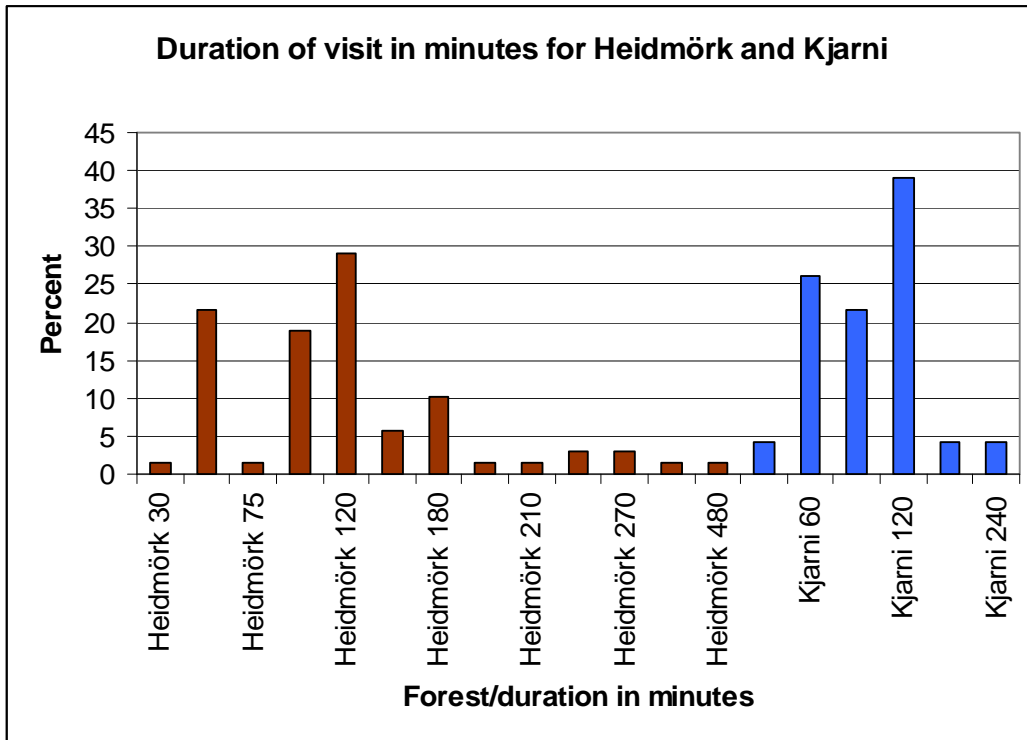


Figure 3-9: Duration of visits in minutes reported by respondents from the two day-use forests of Heidmörk and Kjarni in the 2007 survey used in this study. (n=92)

Figure 3-10 shows the duration of visits to the campgrounds of Hallormsstadur and Vaglir in days. Because of a small number of persons staying for long periods of time in Vaglir forest, it is more appropriate to use the median for comparison. The median shows little difference in the duration of visits to these forests.

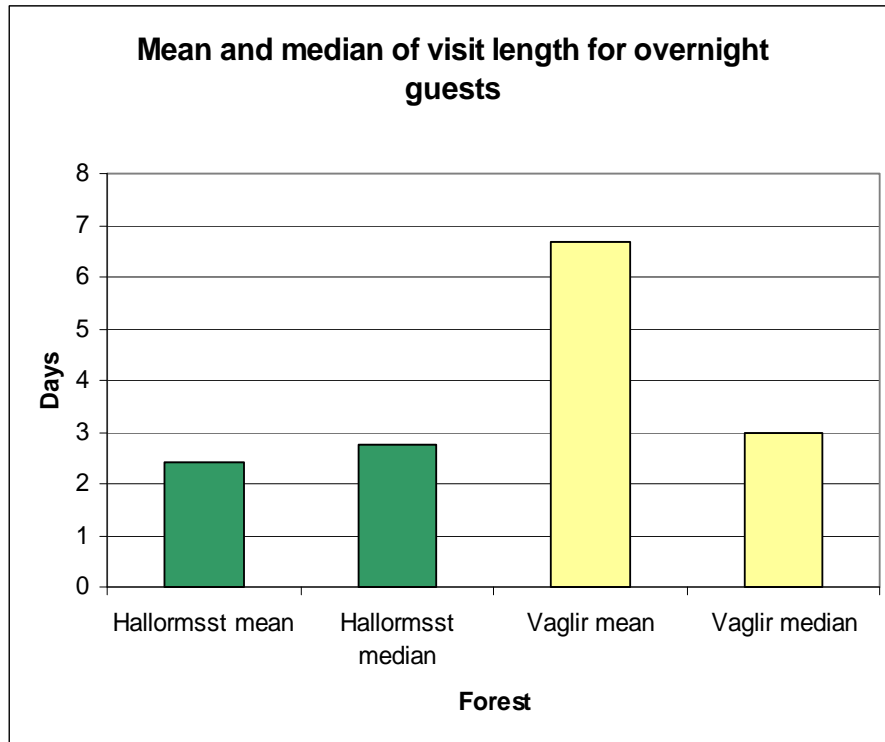


Figure 3-10: Mean and median of visit duration in days for the over-night Forests of Hallormsstadur and Vaglir reported by respondents to the 2007 survey used in this study. (n=134)

Volunteers' place of residence

Tables 3-1 and 3-2 show the distribution of the residences of all persons signing the recruitment lists with an address in Iceland. With the exception of Hallormsstadur

volunteers lived close to the forest where they were recruited. Only 3% of volunteers had rural postal codes.

Table 3-1: Cities of residence of volunteers for the 2007 survey used in this study for the day-use forests of Heidmörk and Kjarni.

Heidmörk		Kjarni	
Reykjavik	81	Akureyri	33
Kopavogur	19	Reykjavik	3
Hafnarfjörður	15	Kopavogur	2
Gardabaer	10	Blönduos	1
Seltjarnarnes	2	Borgarnes	1
Selfoss	2	Hafnarfjörður	1
Mosfellsbaer	2	Keflavik	1
Aftanes	2	Laugar	1
Vogar	1	Myvatn	1
Keflavik	1	Neskaupstadur	1
Egilsstaðir	1	Olafsvik	1
Arborg	1	Saudarkrokur	1

Table 3-2: Cities of residence of volunteers for the 2007 survey used in this study for the overnight forests of Hallormsstaður and Vagfir.

Hallormsstaður		Vagfir	
Reykjavik	24	Akureyri	51
Akureyri	11	Reykjavik	18
Hafnafjörður	11	Kopavogur	6
Kopavogur	10	Gardabær	6
Egilsstaðir	8	Hafnarfjörður	6
Alfanes	4	Mosfellsbaer	6
Selfoss	3	Skagaströnd	6
Reykjanesbaer	3	Selfoss	5
Mosfellsbaer	3	Grenivik	3
Hveragerði	2	Husavik	3
Grindavik	2	Eskifirði	3
Grenivik	2	Olafsvik	2
Thorlákshöfn	1	Saudarkrokur	2
Vopnafjörður	1	Olafsfjörður	2
Vogar	1	Egilsstaðir	2
Vestmannaeyjar	1	Seltjarnarnes	1
Saudarkrokur	1	Akranes	1
Reykholahreppur	1	Borgarbyggð	1
Raudarhöfn	1	Svalbardseyri	1
Höfn	1	Dalvík	1
Hornafjörður	1	Vopnafjörður	1
Eskifjörður	1	Seyðisfjörður	1
Dalvík	1	Neskaupstaður	1
Dalbyggð	1	Faskrúdsfjörður	1
Arborg	1	Djúpivogur	1
Akranes	1		
Gardabaer	1		

Travel (Question HL/V 7, 64 and HM/K 7, 48)

Figure 3-11 shows the reported travel time from the respondents' residence to the forest for Heidmörk and Kjarni. The average travel times for these two forests were 12.5 minutes for Heidmörk and 10 minutes for Kjarni. The results of this question for Hallormsstadur and Vaglir were not valid. This was caused by travel patterns of persons on holiday and is discussed later in this study.

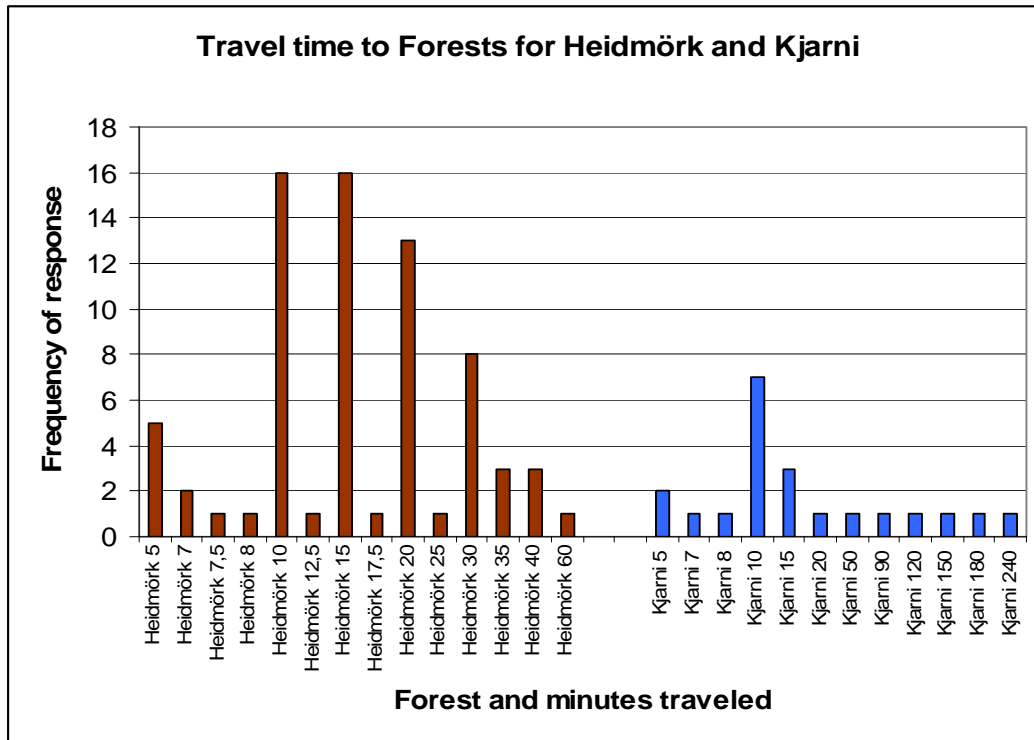


Figure 3-11: Travel time to the day-use forests of Heidmörk and Vaglir reported by respondents to the 2007 survey used in this study. (n=93)

Respondents were also asked the amount of time they were willing to drive to visit a forest like the one they were visiting when they were recruited. As Figure 3-12 shows, there was a marked difference in responses for the different forest recreation types.

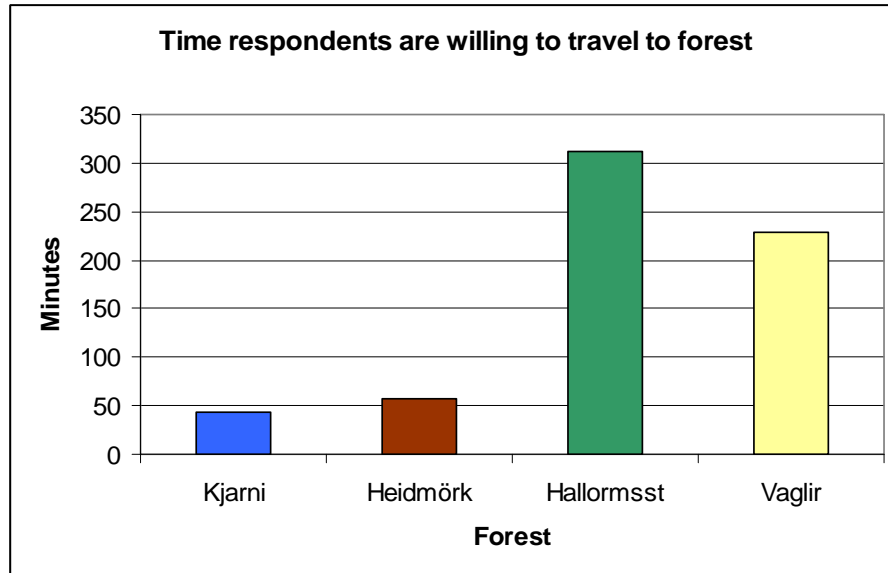


Figure 3-12: Time respondents to the 2007 survey used in this study are willing to spend travelling to the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests, Heidmörk and Kjarni. (n=209)

A comparison of the time reported travelling to the forest, and the time respondents report being willing to spend driving to use a similar forest showed 78% of respondents in Heidmörk and 74% in Kjarni were willing to spend longer than their reported travel time to use a similar forest. It was not possible to do this type of comparison for Vaglir and Hallormsstadur forests because of invalid data for actual travel times.

**Travel patterns for overnight guests in Hallormsstadur and Vaglir forests
(Questions 6, 8, 15 and 16)**

Figure 3-13 shows the percent of overnight guests reporting that either Hallormsstadur or Vaglir were the main destinations of their trips.

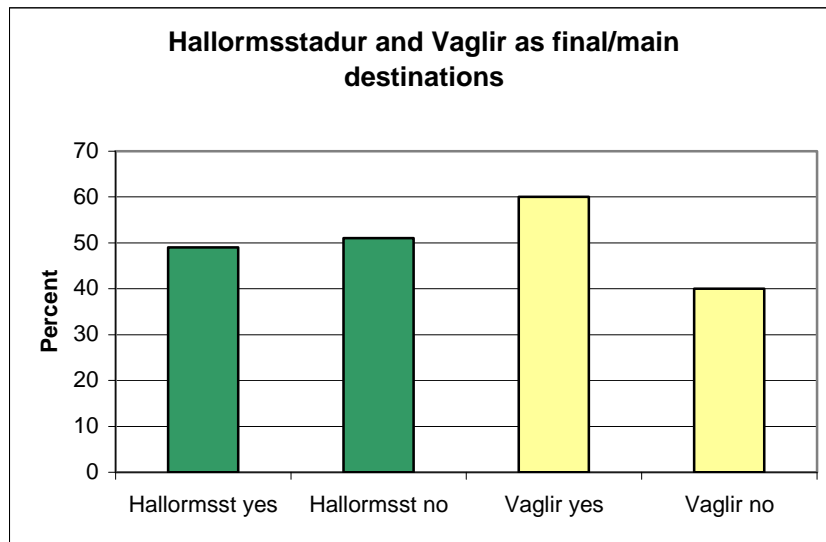


Figure 3-13: Percent of respondents to the 2007 study used in this study reporting the overnight forests of Hallormsstadur or Vaglir as their main/final trip destination Forest as main trip destination. (n=114)

Figure 3-14 shows whether respondents from Hallormsstadur or Vaglir forests visited other campgrounds during the same trip. The majority of forest guests stayed at several campgrounds: the modal number was three.

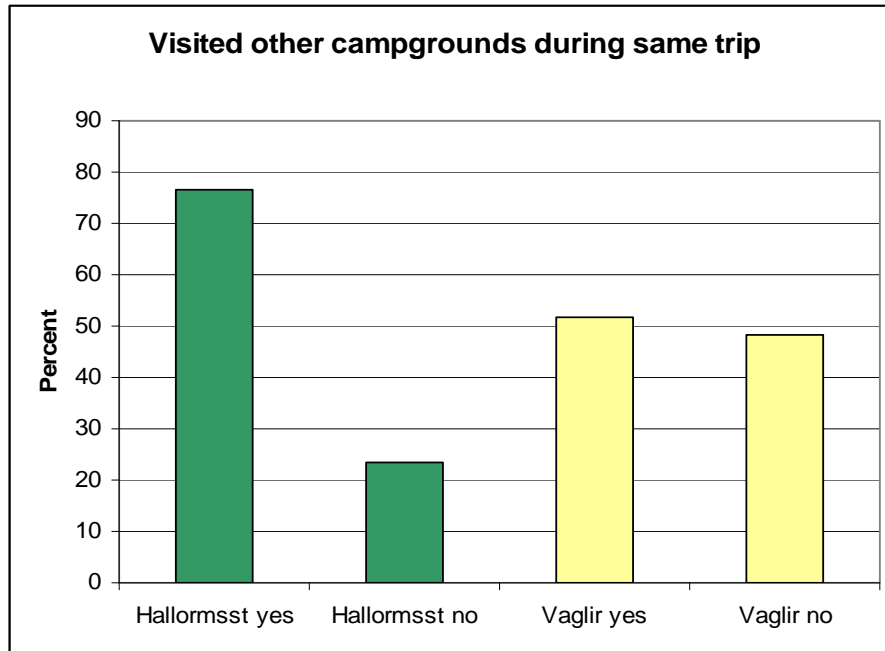


Figure 3-14: Percent of respondents of the 2007 survey used in this study from the overnight forests of Hallormsstadur and Vaglir reporting visits to multiple campgrounds during their trip. (Hallormsstadur n=52 and Vaglir n=82)

Type of camping shelter used (Question HL/V 15)

Figure 3-15 shows the type of camping shelter used. Tent trailers were the most common; none of the respondents reported staying in a cottage.

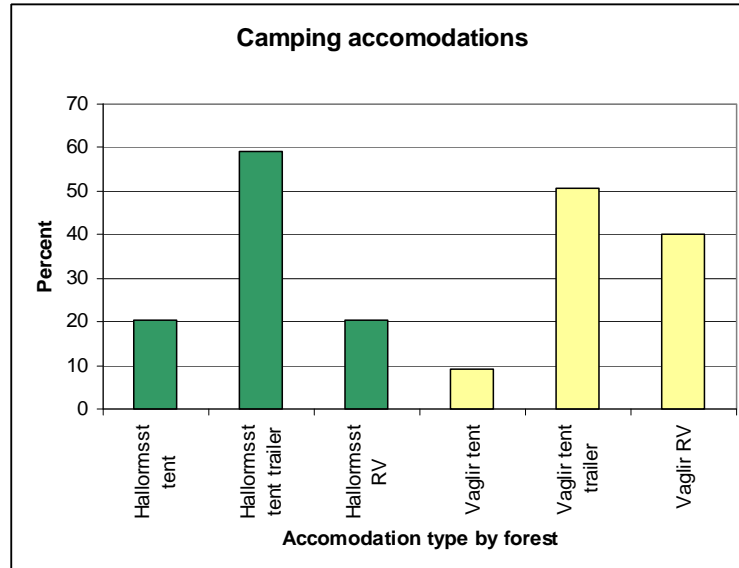


Figure 3-15: Type of camping shelters used by respondents to the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vagfir. (n=120)

Day trips (Question HL/V 16)

Figure 3-16 shows the percent of respondents who took day trips to areas outside the forest during their stay.

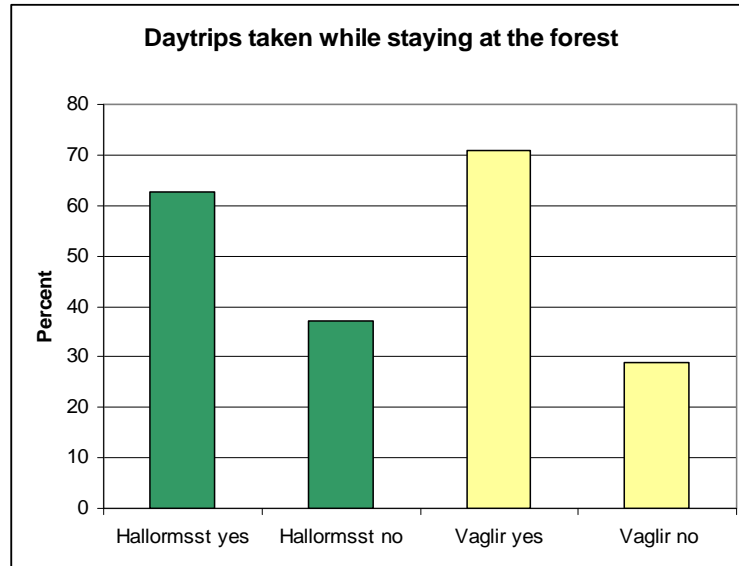


Figure 3-16: Percent of respondents to the 2007 survey used in this study from the two overnight forests of Hallormsstadur and Vaglir who reported taking daytrips outside the forest during their stay. (Hallormsstadur n=51 and Vaglir n=69)

Reason for choosing the specific forest for recreational visits (Question HL/V 12 and HM/K 10)

Respondents were asked why they chose a particular forest instead of another area for their visit. This was an open ended question and in cases where more than one factor was listed, all were recorded. These are shown in Table 3-3.

Table 3-3: Reasons given by respondents to the 2007 survey used in this study from the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni for choosing the forest for recreation.

Hallormsstadur	Percent	Vaglir	Percent
Environment	27.4	Environment	34.8
Forest	15.3	Close	27.4
Location	15.3	Weather	10.5
New	5.3	Social	8.4
Nostalgia	2.1	Location	7.4
Weather	2.1	Forest	4.2
Close	1.1	Favourite area	2.1
Family area	1.1	New	2.1
Social	1.1	Peaceful	1.1
Trails	1.1		

Heidmörk	Percent	Kjarni	Percent
Environment	36.8	Environment	38.8
Close	33.7	Close	5.3
Other	4.2	Location	3.2
Trails	2.1		
Fishing	1.1		
Forest	1.1		
New	1.1		
Weather	1.1		

Type of recreational activities engaged in during forest visit (Question HL/V 13 and HM/K 11)

Respondents were asked in an open ended question about the types of activities they engaged in during their stay in the forest. Multiple activities were classified as general recreation. Single activities were recorded separately (Table 3-4). Responses specifically mentioning walking were recorded and are found in Figure 3-17.

Table 3-4: Percents by types of specific activities reported by respondents to the 2007 survey used in this study from the two overnight forests of Hallormsstadur and Vaglir and the two day-use areas of Heidmörk and Kjarni.

Hallormsstadur	Percent	Vaglir	Percent
Fished	2.2	Nature watching	1.3
Grilled	4.4	Relaxed	2.6
Boated	10.9	Socialized	3.9
Daytrips	15.2	Fished	6.5
General recreation	67.4	Daytrips	13.0
		General recreation	72.7

Heidmörk	Percent	Kjarni	Percent
Enjoyed nature	2.6	Exercised	10.0
Exercised	2.6	General recreation	90.0
Horseback	2.6		
Fished	5.3		
Nature watching	15.8		
General recreation	71.0		

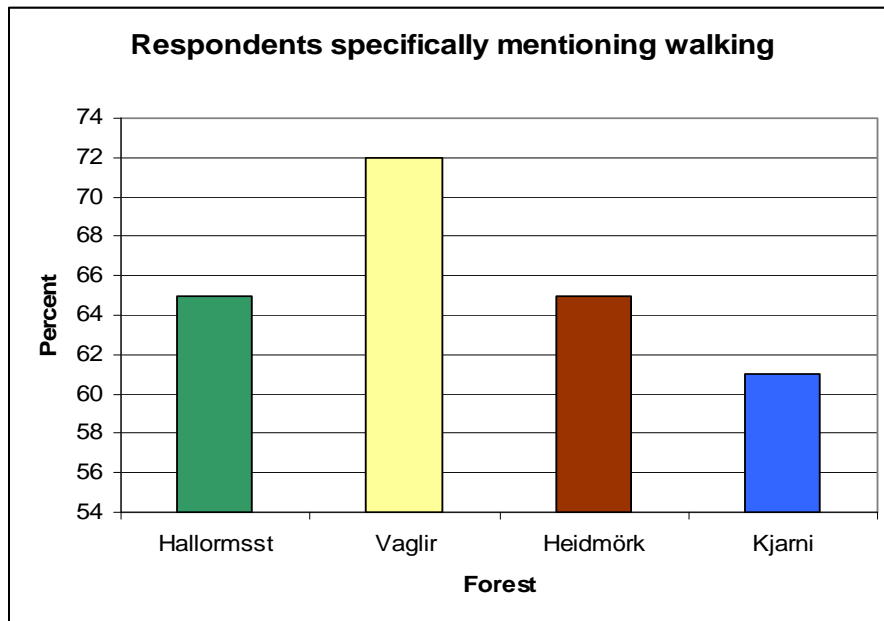


Figure 3-17: Percent of respondents to the 2007 survey used in this study from the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni who specifically named walking as an activity they participated in during their visit to the forest. (n=181)

Harvest of Non-timber forest resources (Question HM/K 57)

Respondents from Heidmörk and Kjarni were asked if they made special trips to the forest to harvest non-timber forest resources. The percent answering yes to this question is found in Figure 3-18. The types and proportions of resources harvested are shown by forest in Figures 3-19 and 3-20. (Several individuals reported harvesting multiple resources. All of these were included in the results shown in Figures 3-19 and 3-20.)

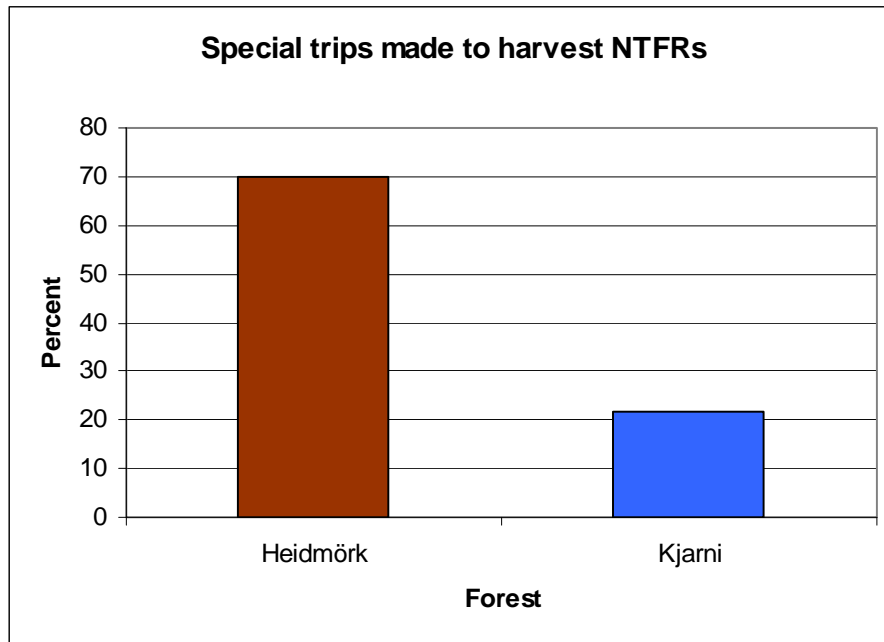


Figure 3-18: Percent of respondents to the 2007 survey of the two day-use areas of Heidmörk and Kjarni who reported making special trips to the forest to harvest non-timber forest resources.

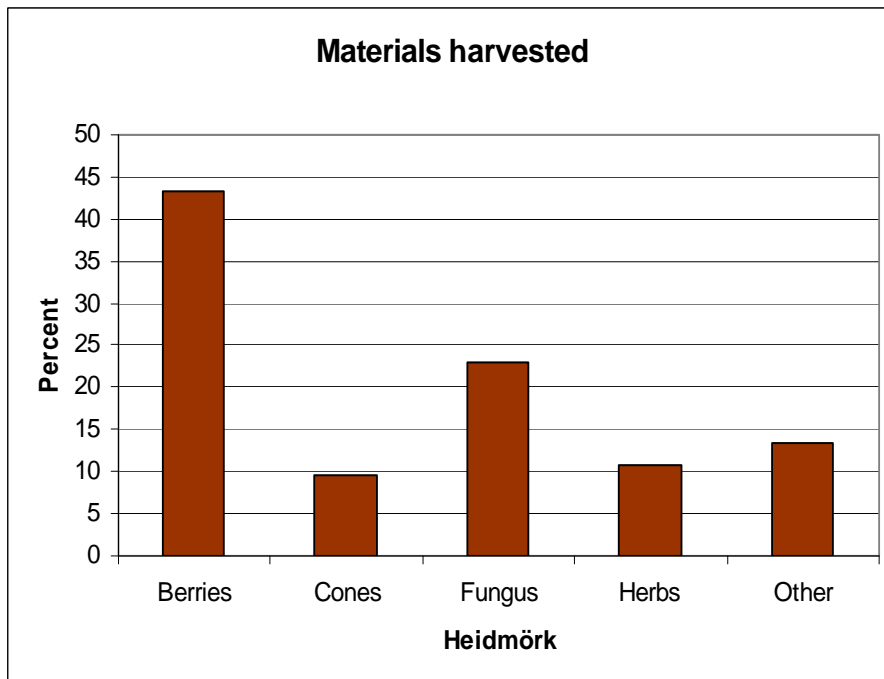


Figure 3-19: The distribution of non-timber resources collected by respondents to the 2007 survey used in this study for Heidmörk.

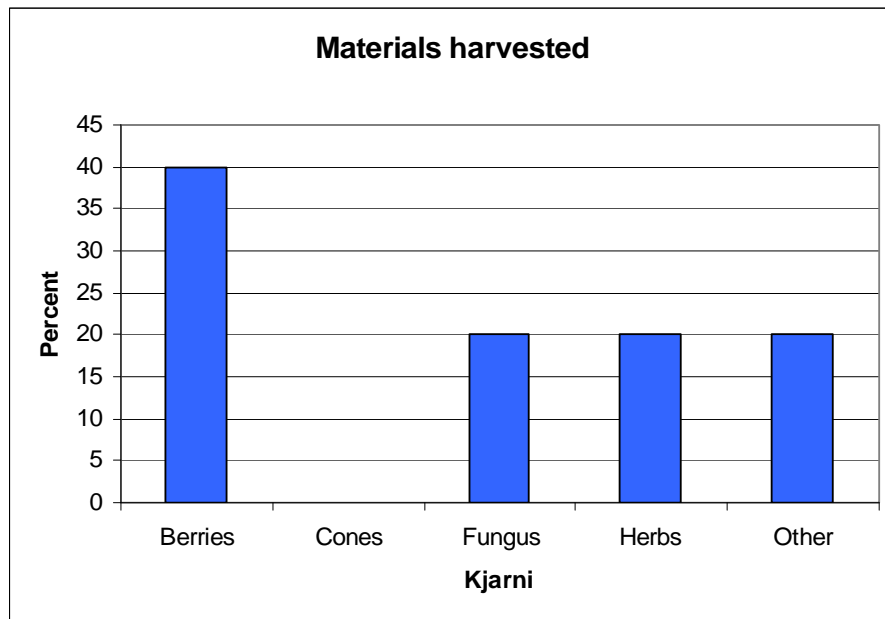


Figure 3-20: The distribution of non-timber resources collected by respondents to the 2007 survey used in this study for Kjarni forest.

3.2 Analysis of desired infrastructure and attributes by groups

To determine if significant differences in the desirability of certain attributes and infrastructures exist between social groups, responses for questions 13-56 and 58 for Heidmörk and Kjarni, and 18-53, 56-70 and 74-73 for Hallormsstadur and Vaglir were analysed using the appropriate ANOVA test for rank. Analysis was made between type of social group by forest, type of benefit group by forest and between forests. (In all figures and tables presenting ANOVA results, there was no significant difference between groups labelled with the same letter.)

3.2.1 Analysis by social groups

Respondents were placed into one of six social groups. Placement was determined by their response to question 4 in all surveys. If it was not possible to place a respondent in one of these groups, their responses were not included in the analysis. The code for social group type is found in Table 3-5. (Codes for forests are the same as those shown in Table 2-2.)

Table 3-5: Social group codes

Code letter	Social group type
A	Individual
B	Couple
C	Couple with children
D	Extended family group
E	Friend and acquaintances
F	Other

Figure 3-21 shows the distribution of respondents in the various social groups by forest visited. There are no discernable trends except a higher percent of persons visiting the forests as individuals or couples in Heidmörk. There was also a larger percent of nuclear families represented in Hallormsstadur than the other three forests.

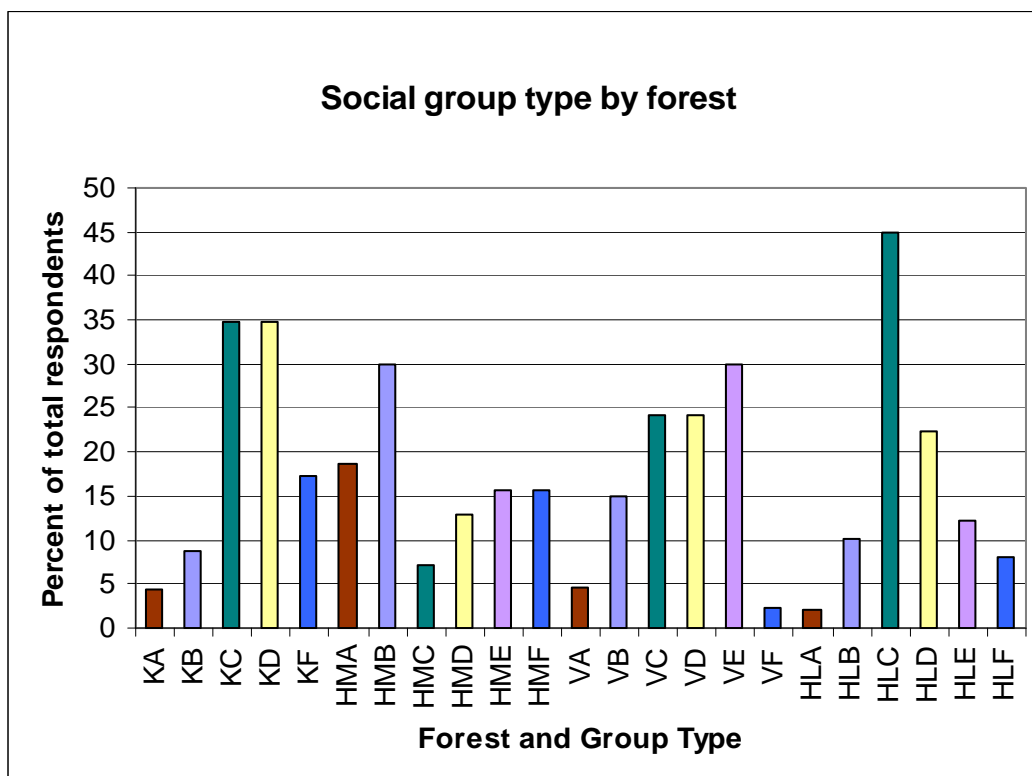


Figure 3-21: Distribution of social groups reported by respondents to the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters are the code letters for the forests (see Table 2-2) followed by the code letter for social group type (see Table 3-4). (n=234)

Only one question, number HL/V 24, showed significant differences between social groups by forests. This question regards restrooms and there is a difference in importance of their provision between some groups in Hallormsstadur and Vaglir and all groups in Heidmörk, with Heidmörk visitors considering provision of restrooms less important (Table 3-6).

Table 3-6: Group by group comparison for question HL/V24. The first letters in the group column indicate the forest (see Table 2-2) followed by letters indicating social group type (see Table 3-4). The letter in the column significant difference indicates those groups where a statically significant difference was found in preferences for restrooms. There is no significant difference in groups with the same letter in this column. (22 degrees of freedom, n=228)

Group	n	Desirability	Sign. Diff.
HLF	4	5,00	a
VE	26	5,00	a
VF	2	5,00	a,b
VC	21	4,76	a,b
KF	4	4,75	a,b
VA	4	4,75	a,b
VB	13	4,69	a,b
HLD	11	4,64	a,b
HLB	5	4,60	a,b
HLC	22	4,55	a,b
VD	21	4,52	a,b
KD	8	4,38	a,b
HMD	9	4,22	a,b
HLE	6	4,17	a,b
KC	8	4,13	a,b
HMC	5	4,00	a,b
KB	2	4,00	a,b
HMA	13	3,62	b
HME	11	3,64	b
HMF	11	3,64	b
HMB	20	3,50	b

3.2.2 Analysis by benefit groups

Data sets for the section on benefits included twenty possible benefits and were listed on the questionnaire in questions 2-1 to 2-20. Respondents were asked to indicate all benefits they gained from their forest visit. Respondents were also asked to indicate which benefit they felt most important. However due to non-compliance, it was not possible to include this in the study. The twenty benefits were divided into seven categories (Behan *et al.*, 2000). Respondents were placed in all categories for which they indicated having gained at least one benefit. Therefore answers for some respondents were placed in more than one category for analysis. Responses marking “other” (questions 2-20) were not used for analysis. These responses are shown in Figure 3-22. Table 3-7 shows questions included in each benefit class and the color code used for each benefit class.

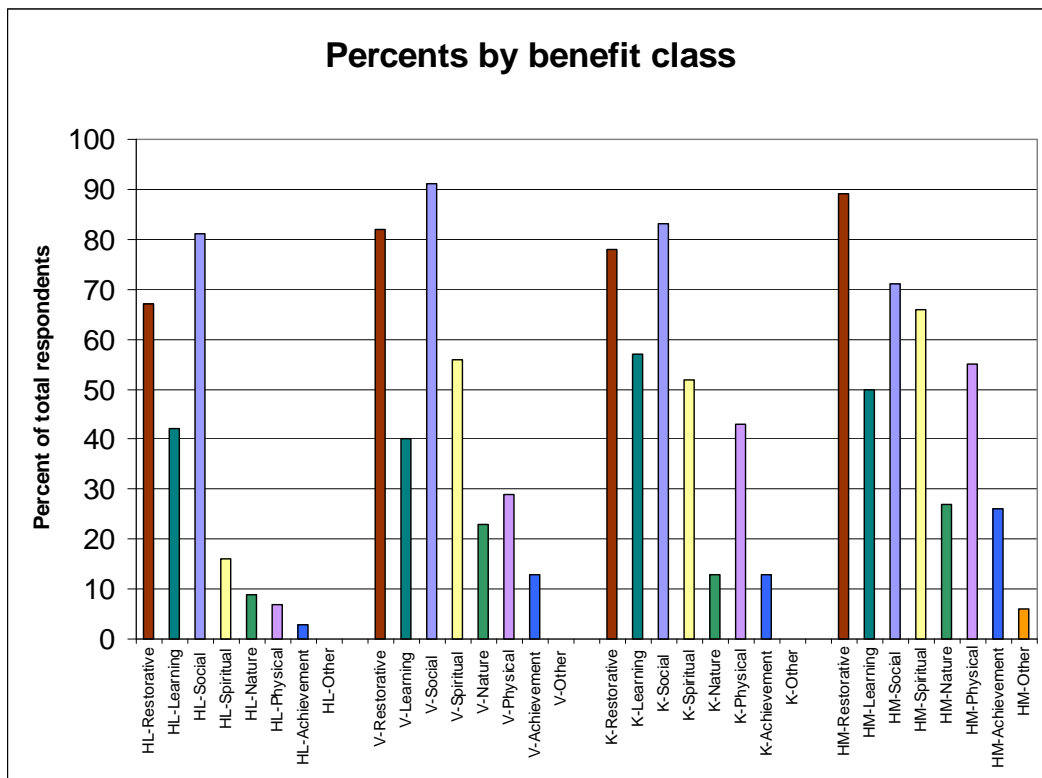










Figure 3-22: Distribution of the benefits gained reported by respondents to the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use areas of Heidmörk and Kjarni. The first letters indicate the forest where the respondent was recruited. Letters are shown in Table 2-2 and color codes for benefit class are shown in Table 3-6.

Table 3-7: Benefit class code and classification of individual questions into classes.

Benefit class	Questions	Colour code
Restorative (R)	2-1 to 2-4	
Learning (L)	2-5 to 2-7	
Social Benefits (SB)	2-8 to 2-11	
Spiritual (S)	2-12 to 2-14	
Nature (N)	2-15	
Physical (P)	2-16 & 2-17	
Achievement (A)	2-18 & 2-19	
Other	2-20	

The following Tables are those questions for which a significant difference was found between benefit groups by forest

Question 21: Access to clean water

Several benefits groups in Hallormsstadur and Vagfir considered access to clean water to be more important than the same groups in Heidmörk (Table 3-8).

Table 3-8: Comparison for question HL/V21. The first letters in the group column indicate the benefit class (see Table 2-8) followed by letters indicating forests (see Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (27 degrees of freedom)

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
NHL	17	4,94	a
RV	71	4,89	a
SBV	80	4,87	a
PV	26	4,84	a
SV	50	4,84	a
AV	12	4,82	a
AHL	6	4,80	a
LV	36	4,80	a
NV	21	4,80	a
SBHL	44	4,70	a,b
SHL	31	4,70	a,b
PHL	14	4,69	a,b
RHL	38	4,65	a,b
LHL	23	4,50	a,b
SK	13	4,42	a,b
RK	19	4,39	a,b
SBK	20	4,32	a,b
LK	14	4,23	a,b
PK	11	4,20	a,b
AK	4	4,00	a,b
NK	4	4,00	a,b
AHM	20	3,71	a,b
PHM	42	3,55	b
SHM	50	3,50	b
RHM	68	3,49	b

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
LHM	38	3,47	b
SBHM	54	3,45	b
NHM	22	3,41	b

Question 24: Provision of restrooms

All but one of the benefits groups at Vagfir considered provision to be more important than all the Heidmörk groups (Table 3-9).

Table 3-9: Comparison for question HL/V24. The first letters in the group column indicate the benefit class (Table 3-7) followed by letters indicating forests (Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (27 degrees of freedom)

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
NV	20	5	a
AV	11	4,9	a
PV	25	4,88	a
LV	35	4,83	a
SPV	49	4,82	a
RV	70	4,81	a
AHL	5	4,8	a,b,c
PHL	13	4,77	a,b,c
SBV	79	4,76	a,b,c
NHL	16	4,69	a,b,c
NK	3	4,67	a,b,c
RHL	37	4,62	a,b,c
SBHL	43	4,61	a,b,c
PK	10	4,6	a,b,c
SPHL	30	4,57	a,b,c
LHL	22	4,46	a,b,c

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
RK	18	4,33	a,b,c
SBK	19	4,32	a,b,c
LK	13	4,3	a,b,c
SPK	12	4,08	a,b,c
AK	3	4	a,b,c
AHM	20	3,85	b,c
RHM	68	3,74	b,c
PHM	43	3,72	b,c
SPHM	50	3,72	b,c
SBHM	55	3,71	b,c
LHM	39	3,69	b,c
NHM	20	3,3	c

Question 26: Provision of playground equipment

Two benefits groups at Vaglir considered provision of playground equipment more important than three groups in Heidmörk (Table 3-10).

Table 3-10: Comparison for question HL/V26. The first letters in the group column indicate the benefit class (Table 3-7) followed by letters indicating forests (Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (Kruskal Wallis' ANOVA with 27 degrees of freedom.)

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
AV	11	4,72	a
NV	20	4,6	a
NK	2	4,5	a,b
PHL	13	4,39	a,b
PV	25	4,36	a,b
SV	49	4,35	a,b
LK	12	4,25	a,b
NHL	16	4,25	a,b
RV	70	4,24	a,b
LV	35	4,23	a,b
SBHL	43	4,23	a,b
SBV	79	4,23	a,b

Benefit/forest	n	Desirability mean	Sign. Diff.
SHL	30	4,23	a,b
PK	9	4,22	a,b
AHL	5	4,2	a,b
RHL	37	4,15	a,b
RK	18	4,11	a,b
SK	11	4,09	a,b
SBK	19	4,05	a,b
AK	2	4	a,b
LHL	22	3,96	a,b
NHM	20	3,4	a,b
SBHM	50	3,38	a,b
AHM	19	3,37	a,b
RHM	61	3,34	a,b
SHM	45	3,31	b
PHM	38	3,29	b
LHM	37	3,16	b

Question 43: Presence of a grocery store in close proximity to the forest

Two benefit groups at Vaglir felt it was more important to have a grocery store near the forest than three benefit groups at Kjarni and all six at Heidmörk (Table 3-11).

Table 3-11: Comparison for question HL/V43. The first letters in the group column indicate the benefit class (Table 3-7) followed by letters indicating forests (Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (Kruskal Wallis' ANOVA with 27 degrees of freedom.)

Benefit/forest	n	Desirability	
		mean	Sign. Diff.
43AV	11	4,27	a
43NV	20	4,25	a
43AHL	5	4,20	a,b
43SPV	49	4,02	a,b
43PV	25	4,00	a,b
43LV	35	3,89	a,b
43RV	70	3,83	a,b
43SBV	78	3,78	a,b
43PHL	13	3,31	a,b
43LHL	20	3,30	a,b
43RHL	35	3,29	a,b
43NHL	15	3,13	a,b
43SBHL	40	3,13	a,b
43SPHL	27	3,04	a,b
43AK	3	2,33	a,b,c
43NK	3	2,33	a,b,c
43PK	10	2,20	a,b,c
43SPK	12	2,08	a,b,c
43RK	17	2,06	b,c
43SBK	19	2,05	b,c
43LK	12	2,00	b,c
43AHM	19	1,95	b,c
43NHM	20	1,95	b,c
43SBHM	52	1,87	b,c
43LHM	38	1,79	b,c
43RHM	66	1,78	b,c
43PHM	40	1,73	b,c
43SPHM	48	1,71	c

Question 56: Desirability of streams and ponds

Two benefit groups at Vaglir felt that streams and ponds would add more to their enjoyment of forest than two benefit groups at Kjarni (Table 3-12).

Table 3-12: Comparison for question HL/V56. The first letters in the group column indicate the benefit class (Table 3-7) followed by letters indicating forests (Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (Kruskal Wallis' ANOVA with 27 degrees of freedom.)

Benefit/forest	N	Desirability	
		mean	Sign. Diff.
NV	20	4,80	a
AV	11	4,56	a
AHL	5	4,40	a,b
PV	25	4,24	a,b
SHL	29	4,24	a,b
LV	35	4,20	a,b
RHL	36	4,13	a,b
PHL	13	4,07	a,b
NHL	16	4,06	a,b
SV	49	4,06	a,b
NHM	20	4,00	a,b
SBHL	40	4,00	a,b
RV	66	3,99	a,b
SBV	75	3,98	a,b
AHM	19	3,95	a,b
LHL	21	3,95	a,b
SBHM	53	3,83	a,b
SHM	50	3,78	a,b
RHM	67	3,76	a,b
LHM	38	3,74	a,b
PHM	42	3,67	a,b
AK	3	2,67	a,b
NK	3	2,00	a,b
SK	12	1,83	b
PK	10	1,80	b
LK	13	1,77	b
RK	18	1,56	b
SBK	19	1,53	b

Question 67: Appropriateness of having a hotel in the forest

(This is a policy question and was only asked in Hallormsstadur and Vaglir National Forests.)

Two benefit groups at Hallormsstadur felt it was more desirable to have a hotel in the National Forest than three benefit groups in Vaglir (Table 3-13).

Table 3-13: Comparison for question HL/V67. The first letters in the group column indicate the benefit class (Table 3-7) followed by letters indicating forests (Table 2-2). The letter in the column significant difference indicates those groups where a statically significant difference was found. There is no significant difference in groups with the same letter in this column. (Kruskal Wallis' ANOVA with 13 degrees of freedom.)

Benefit/forest	N	Desirability	
		mean	Sign. Diff.
SHL	27	3,15	a
SBHL	35	3,03	a
AHL	4	3,00	a,b
NHL	15	3,00	a,b
PHL	12	3,00	a,b
RHL	31	3,00	a,b
LHL	16	2,94	a,b
PV	23	2,30	a,b
AV	10	2,20	a,b
LV	34	2,18	a,b
NV	18	2,17	a,b
RV	62	2,15	b
SBV	71	2,14	b
SV	45	2,07	b

3.2.3 Analysis by forest

The same questions were then analysed using forest visited as the basis for groups. The following questions are those found to differ significantly between forests.

Question 18: The presence of information signs in the parking areas

Respondents in Hallormsstadur felt information signs at parking lots to be more important than respondents in Heiðmörk (Figure 3-23).

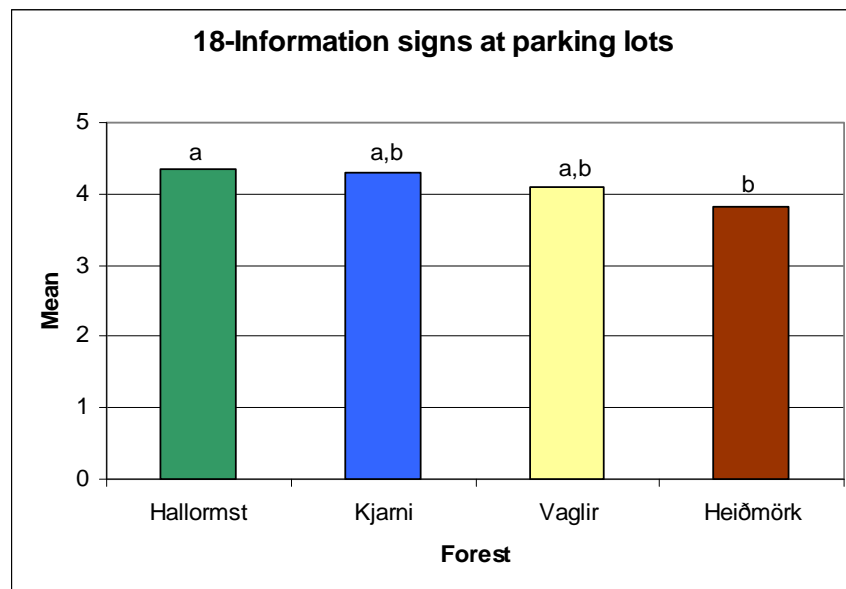


Figure 3-23: ANOVA results for question 18 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heiðmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 19: Trail markers placed along footpaths

Respondents in Hallormsstadur felt trail markers on the footpaths to be more important than did respondents from Heidmörk (Figure 3-24).

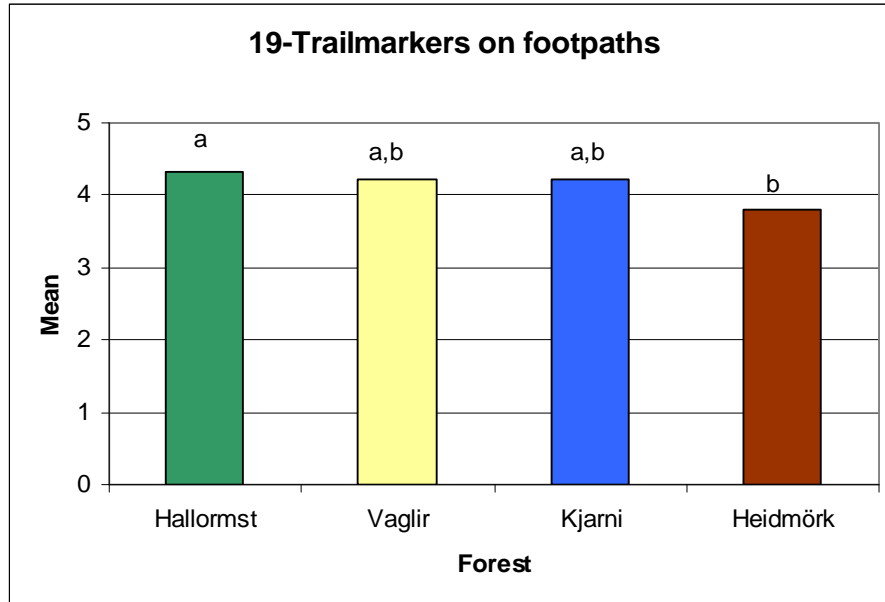


Figure 3-24: ANOVA results for question 19 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 21: Access to clean water

Respondents in Hallormsstadur, Vaglir and Kjarni felt access to clean water was more important than respondents in Heidmörk (Figure 3-25).

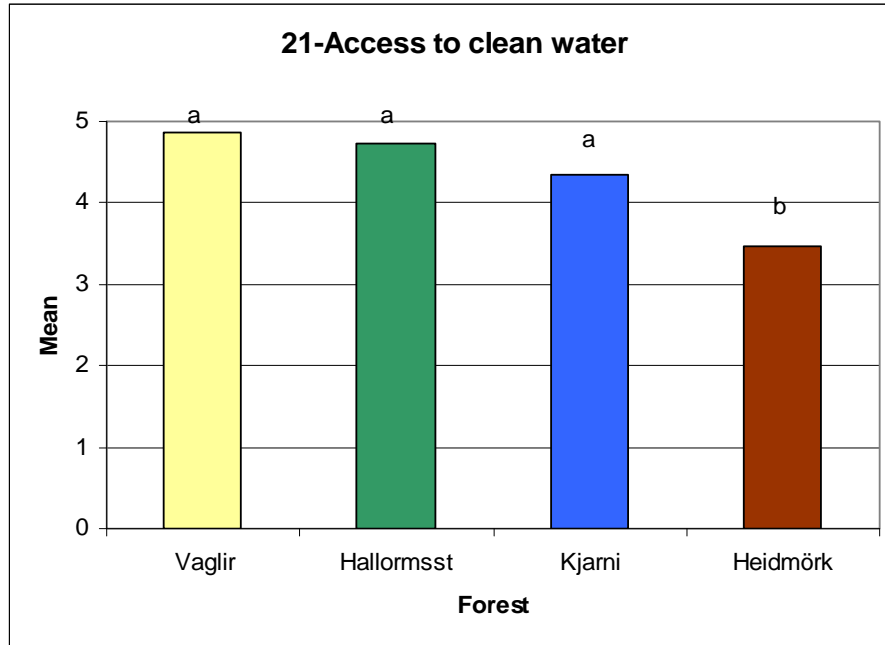


Figure 3-25: ANOVA results for question 21 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 23: Trash containers in use areas

Respondents in Hallormsstadur felt trash containers in use areas were more important than respondents from Heidmörk (Figure 3-26).

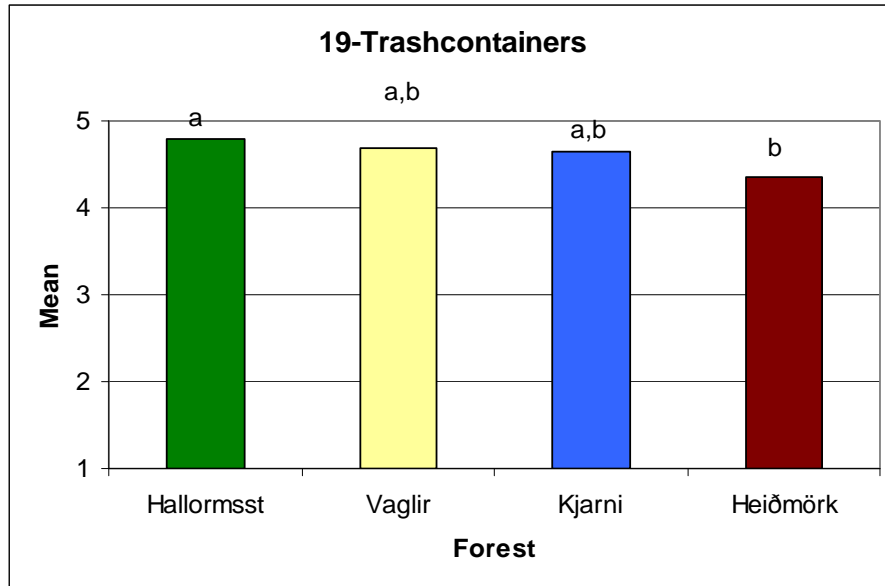


Figure 3-26: ANOVA results for question 23 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 24: Provision of restrooms in use areas

Respondents in Hallormsstadur and Vaglir felt restrooms in use areas were more important than respondents from Kjarni and Heidmörk (Figure 3-27).

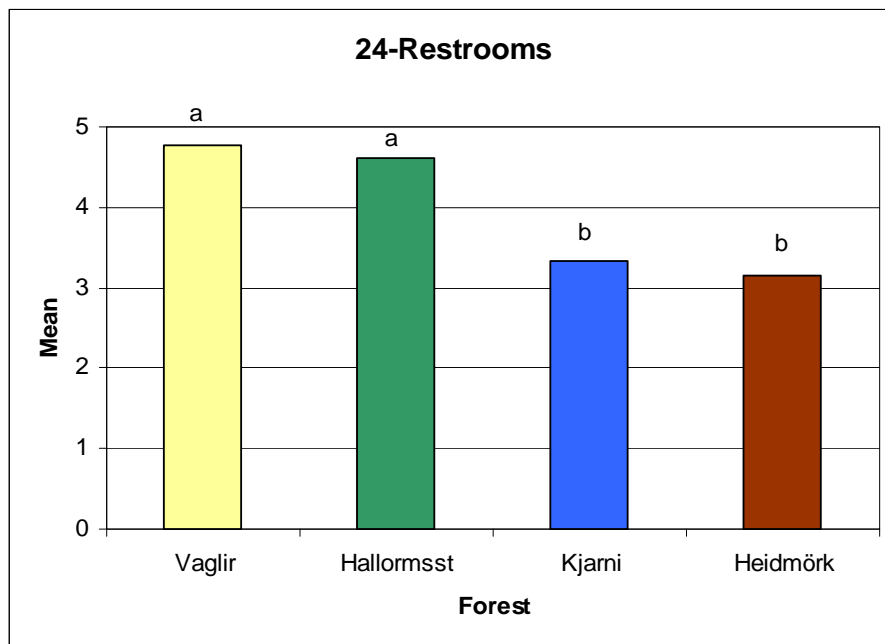


Figure3-27: ANOVA results for question 24 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 25: Provision of showers in camping areas (Hallormsstadur and Vaglir only)

Respondents in Hallormsstadur felt the provision of shower facilities in the camping areas was more important than respondents from Vaglir (Figure 3-28).

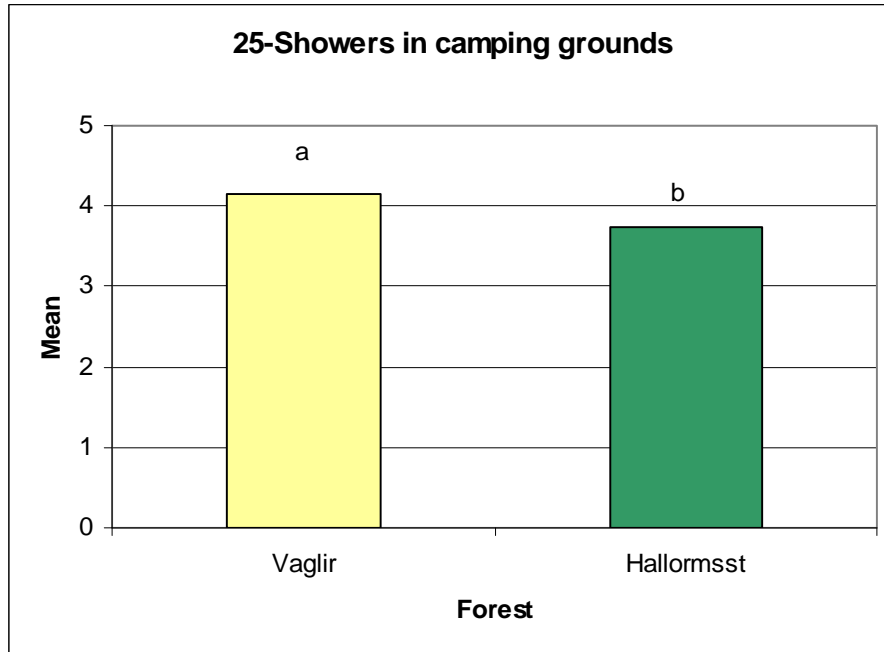


Figure 3-28: ANOVA results for question 25 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir. The letters indicate the existence of a statistical difference.

Question 26: Provision of playground equipment

Respondents in Hallormsstadur, Vaglir and Kjarni felt provision of playground equipment was more important than respondents from Heidmörk (Figure 3-29).

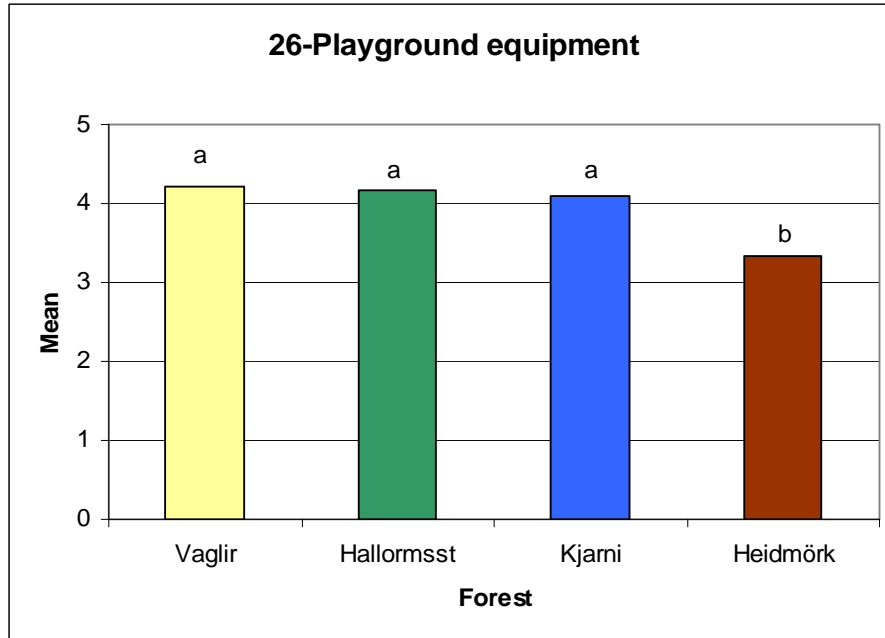


Figure 3-29: ANOVA results for question 26 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 33: Educational markers along footpaths

Respondents in Hallormsstadur felt educational markers along the footpaths were more important than respondents from Vaglir (Figure 3-30).

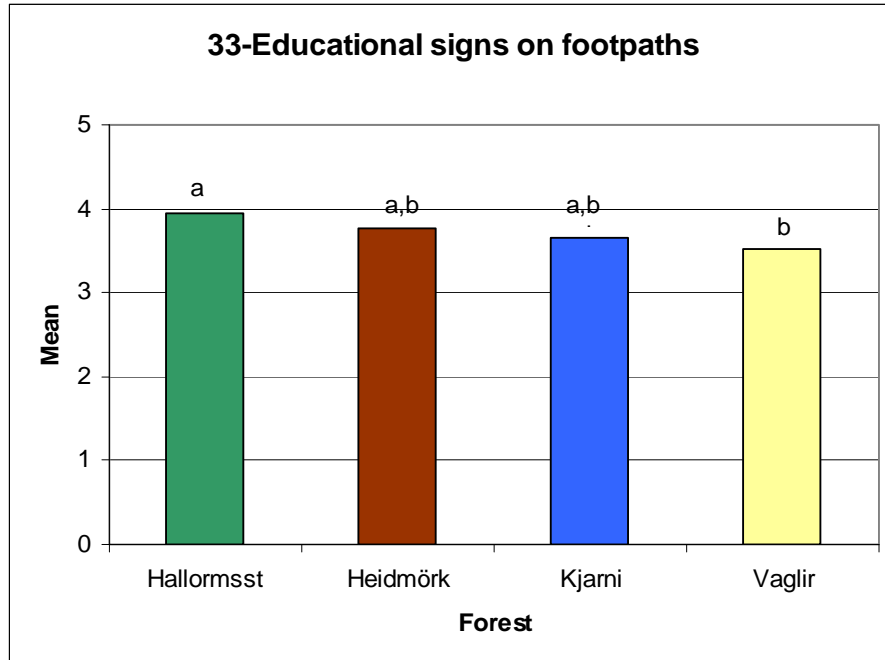


Figure 3-30: ANOVA results for question 33 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3degrees of freedom)

Question 34: Information regarding the length, difficulty and time required for trails at trailheads

Respondents from Hallormsstadur felt that information regarding the length, difficulty and time required at the trailheads to be more important than respondents from Vaglir (Figure 3-31).

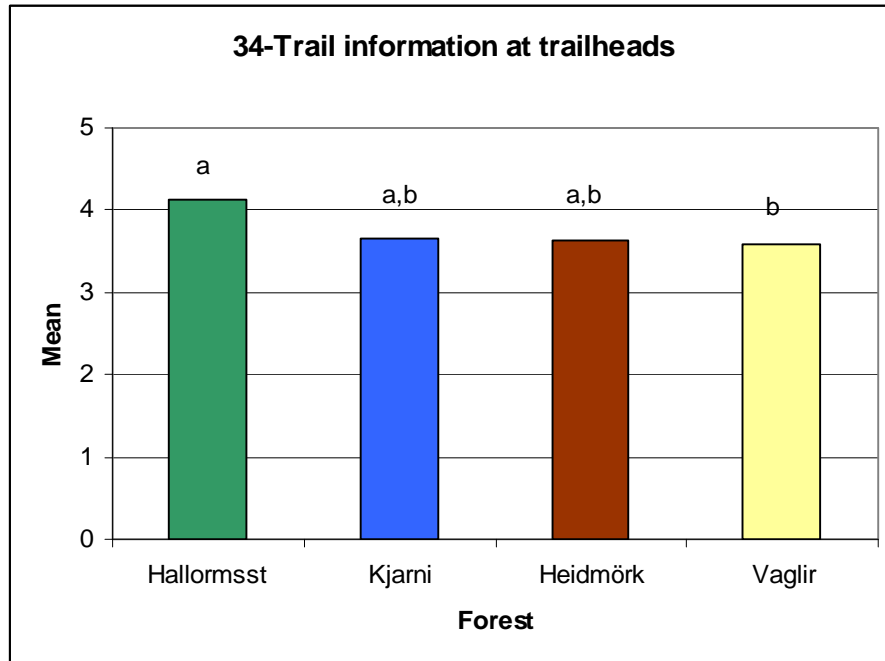


Figure 3-31: ANOVA results for question 34 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 37: Provision of picnic areas for small groups of less than 10

Respondents from Kjarni felt the provision of picnic areas for small groups of less than 10 persons to be more important than respondents from Vaglir (Figure 3-32).

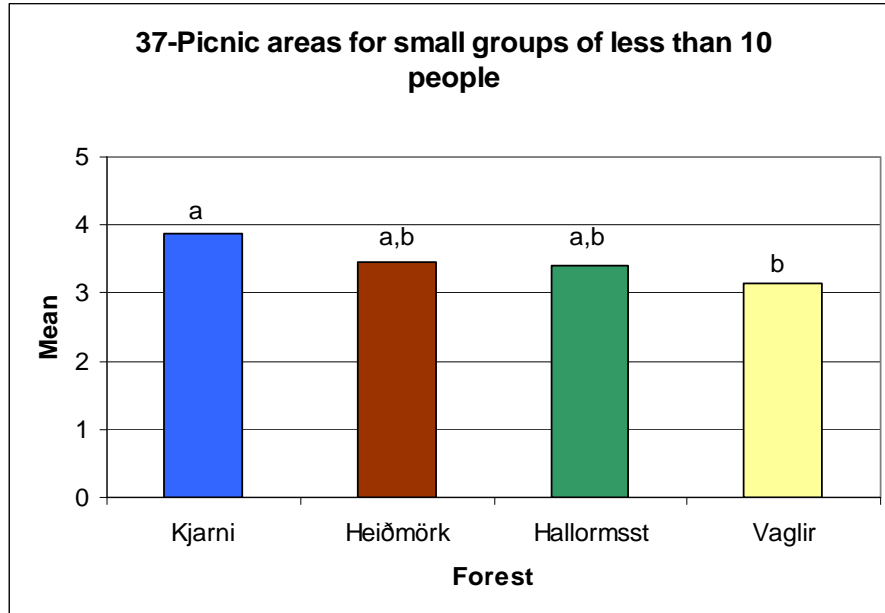


Figure 3-32: ANOVA results for question 37 based on the responses given in the 2007 survey used in this study for the two overnight forests Hallormsstadur and Vaglir and the two day-use forests of Heiðmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 39: A restaurant in close proximity to the forest

Respondents from Hallormsstadur and Vaglir felt it is more important to have a restaurant in close proximity to the forest than respondents from Heidmörk and Kjarni (Figure 3-33).

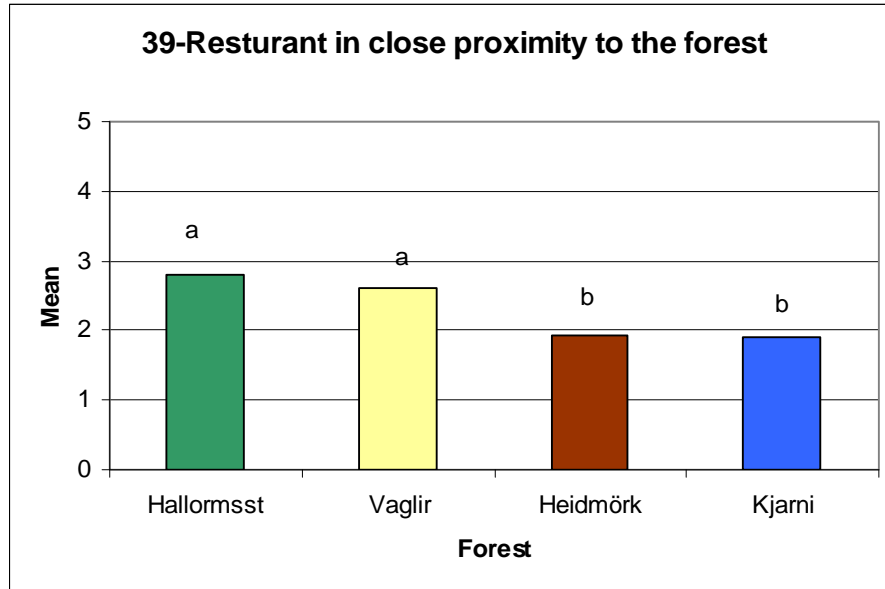


Figure 3-33: ANOVA results for question 39 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 41: Forest staff present and easily identified

Respondents from Hallormsstadur and Vaglir felt it was more important that forest staff is present and easily identifiable than respondents from Heidmörk and Kjarni (Figure 3-34).

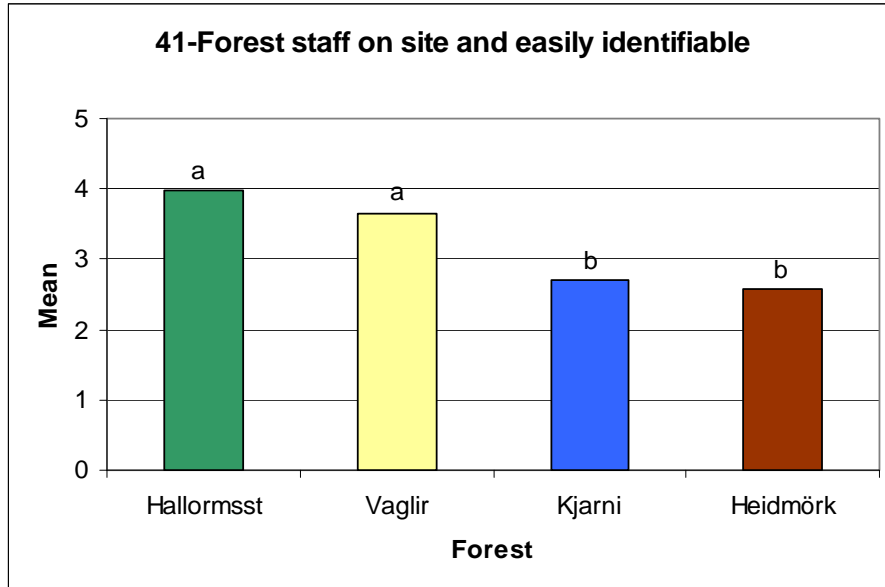


Figure 3-34: ANOVA results for question 41 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly. (3 degrees of freedom)

Question 43: Grocery store in close proximity to the forest

Respondents from Vaglir felt it was more important to have a grocery store in close proximity to the forest than respondents from Kjarni and Heidmörk (Figure 3-35).

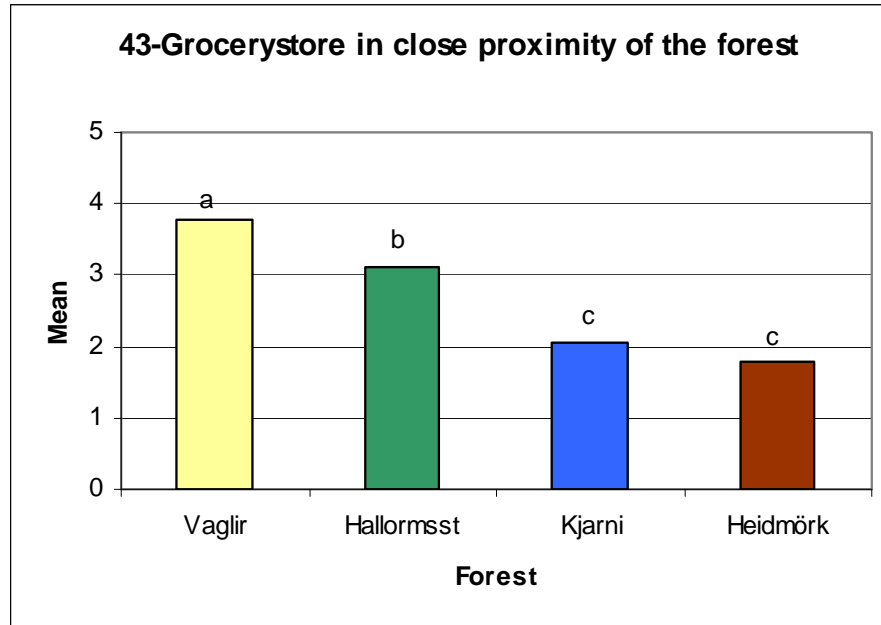


Figure 3-35: ANOVA results for question 43 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom)

Question 50: Forest area of more than 10 hectares

Respondents from Heidmörk felt it was more important for the forest area to be more than 10 hectares than respondents from Vaglir (Figure 3-36).

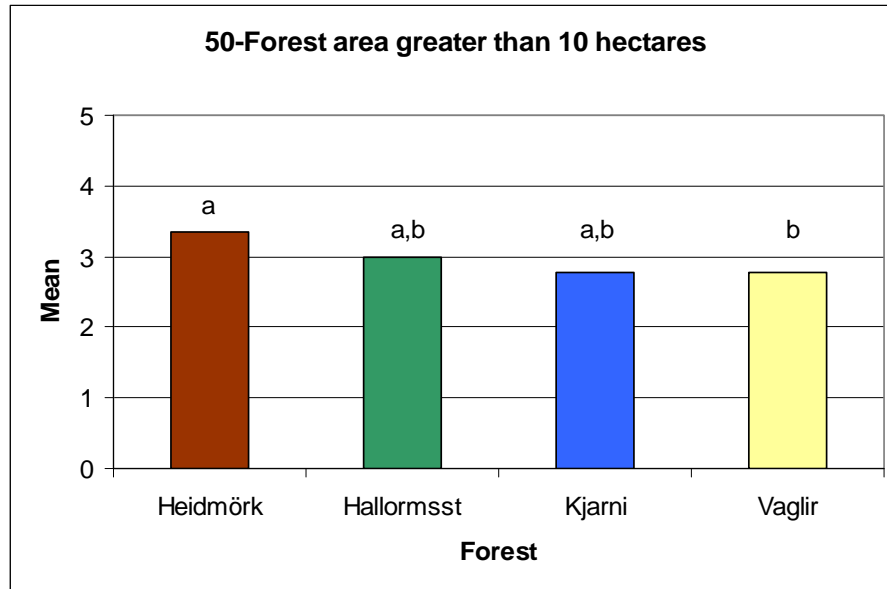


Figure 3-36: ANOVA results for question 50 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom)

Question 51: Provision of cross-country ski trail in the winter

Respondents from Kjarni and Hallormstadir felt that it was more important to have a prepared cross-country ski trail than did respondents from Vaglir (Figure 3-37).

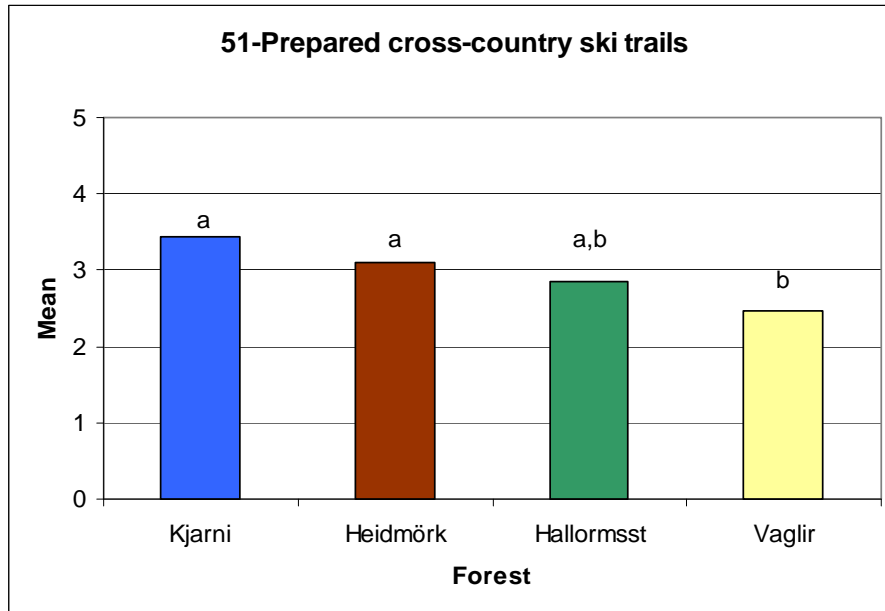


Figure 3-37: ANOVA results for question 51 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormstadir and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom)

Question 57: Would meeting a cyclist on the trails detract from your enjoyment

Respondents from Hallormsstadur felt meeting a cyclist on a trail would detract less from their enjoyment of the trail than respondents from Kjarni and Heidmörk (Figure 3-38).

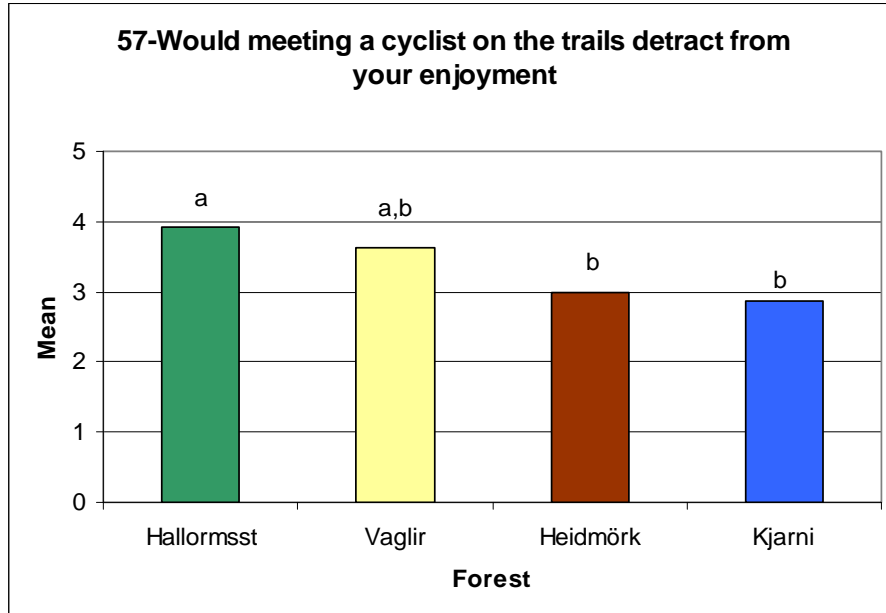


Figure 3-38: ANOVA results for question 57 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom) (Note higher numbers represent less distraction.)

Question 59: Are signs of horses on the trails a detraction

Respondents from Hallormsstadur felt that signs of horse traffic on the trails were less of a detraction than respondents from Heidmörk (Figure 3-39).

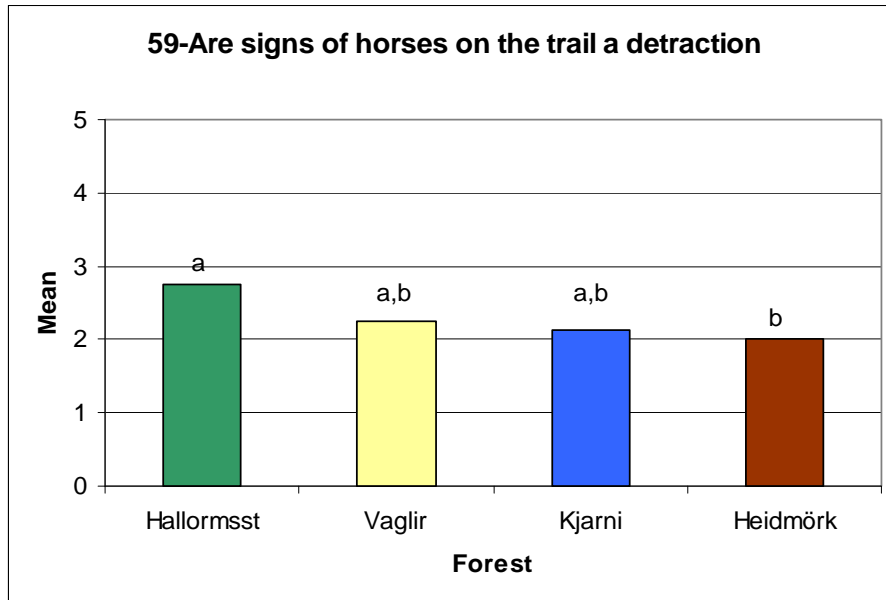


Figure 3-39: ANOVA results for question 59 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom) (Note higher numbers represent less distraction.)

Question 68: Desired encounter rate

Respondents from Hallormsstadur and Vaglir reported higher desired encounter rates than respondents from Kjarni (Figure 3-40).

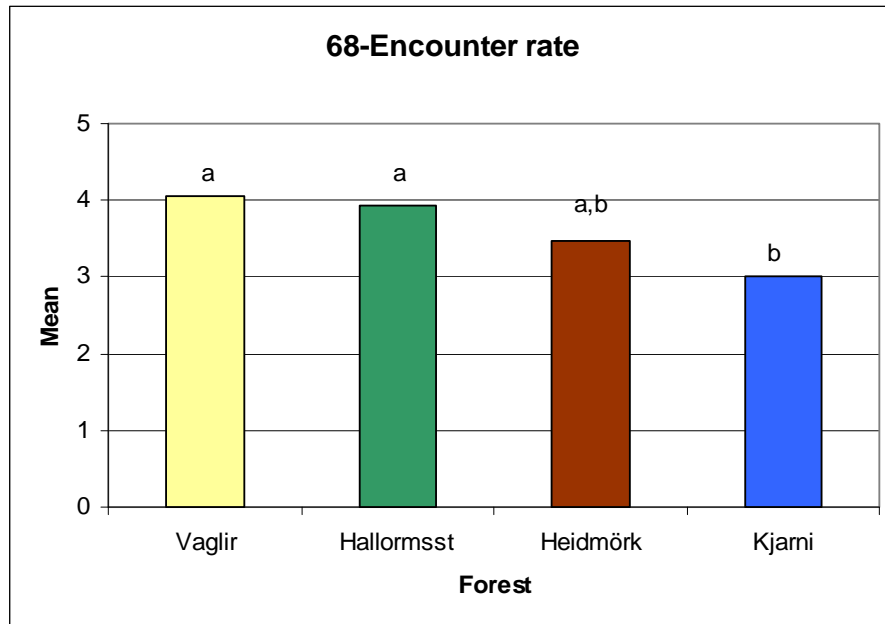


Figure 3-40: ANOVA results for question 68 based on the responses given in the 2007 survey used in this study for the two overnight forests of Hallormsstadur and Vaglir and the two day-use forests of Heidmörk and Kjarni. The letters indicate the existence of a statistical difference. Forests with the same letter above the column did not differ significantly (3 degrees of freedom)

3.3 Questions tested for correlation

Two pairs of questions were tested for correlation. The first of these was done at the request of the head forest warden at Hallormsstadur National Forest and was added to the questionnaire for Vaglir Forest. It was designed to test for the existence of a correlation between using footpaths other than the main path and having a copy of the trail guide booklet. These were questions HL/V 54 and 55. There was a significant positive correlation between these two factors. (For Hallormsstadur Spearman's $r = 0.43$, $p = 0.002$ and for Vaglir Spearman's $r = 0.43$, $p < 0.001$).

The second set of questions tested was HL/V 113 and 115 and HM/K 90 and 92. These were tested to see if there was correlation between the type of forest respondents felt they

were in and the degree of perceived naturalness of the forest. There was not a significant correlation between these two factors. (For Hallormsstadur Spearman's $r = 0.55$, $p = 0.73$ and $n = 38$, for Vaglir Spearman's $r = 0.026$, $p = 0.84$ and $n = 68$, for Heidmörk Spearman's $r = 0.015$, $p = 0.91$ and $n = 60$ and for Kjarni Spearman's $r = 0.00$, $p = 1$ and $n = 19$).

Overall rating and intent to revisit the forest

In questions HL/V 114 and HM/K 90, respondents were asked if they intended to revisit the forest in future. The percentage of positive responses is found in Table 3-14.

Table 3-14: Intent of respondents of the 2007 survey used in this study to revisit the forest.

Forest	Percent of positive responses
Hallormsstadur	98
Vaglir	99
Heidmörk	99
Kjarni	100

Respondents were not asked until the end of the survey to give an overall rating for their satisfaction with their visit to the forest. This was question HL/V 116 and HM/K 92. The mean for these questions is found in Table 3-15.

Table 3-15: Overall satisfaction rating of respondents in the 2007 survey used in this study.

Forest	n	Mean	Standard deviation
Hallormsstadur	53	4,76	,434
Vaglir	87	4,56	,522
Heidmörk	69	4,64	,514
Kjarni	23	4,65	,487

3.4 Priority Indices

Indices for use as management tools were developed. These provide an order and indication of importance of various factors for zoning and management purposes. The indices were developed by multiplying the mean of desirability of non-zero responses by the percent of total respondents answering a specific question. This was done to allow for zero responses without unduly lowering the results. Based on the ANOVA results the indices were constructed using two forest types, day-use and overnight forests. In cases dealing with negative aspects such as possible conflicts for all forests and policy in the case of overnight forests a negative sign was added to the priority rating. These numbers should be subtracted from the total points given to an area. The various aspects tested for in the survey were then divided by forest use type these were further divided into the categories: site attributes, management actions and conflict possibilities for both day-use and overnight forests. The additional category of policy was added to overnight forests. The priority indices for day-use forests are found in Tables 3-16 to 3-18 and those for overnight forests are found in Tables 3-19 to 3-22. (The data used in developing these indices can be found in Appendix E.)

The indices show the importance of various factors that can be used in both development of new sites and the management of existing recreational forests. The results indicate that respondents demand a fairly high level of infrastructure in the forests, but at the same time prefer the setting to be as natural as possible. These indices offer forest planners and managers a method for making decisions based to a large extent on the desires of recreationists. (Note some factors are included in more than one category. This was done when provision depends on more than one factor.)

3.4.1 Priority index for day-use forests by categories

The priority index was categorized by site attributes (Table 3-16), management actions (Table 3-17) and areas of possible conflict (Table 3-18).

Table 3-16: Priority index for site attributes of day-use forests. The priority ratings shows the relative importance of the attribute based on the responses to the 2007 survey used in this study from Heidmörk and Kjarni forests.

Question	Site attributes	Priority rating
28	Good access road to forest	394
31	Easy trails	383
24	Restrooms in use areas	381
56	Streams and brooks in forest	378
21	Access to clean water	360
30	Moderate trails	279
29	Demanding trails	268
50	Forest larger than 10 ha.	239
49	Trees taller than 3 m.	201
39	Restaurant near forest	184
43	Grocery store near forest	176
60	Cultural noise, sights	-425
69	Type of forest preferred (mixed)	167

Table 3-17: Priority index of management actions for day-use areas based on desirability reported by respondents to the 2007 survey used in this study from Heidmörk and Kjarni forests. These factors are dependent upon direct management actions.

Question	Management action	Priority rating
46	Forest free of trash	466
23	Trash containers in use areas	442
47	No human damage to plants	434
74	Maintenance as natural as possible	422
48	No human damage to facilities	397
18	Information signs at parking areas	393
19	Trail markers	385
31	Easy trails	383
24	Restrooms in use areas	381
35	Benches at points of interest	381
33	Educational markers on trails	369
34	Trail information at trailheads	355
53	Signs of logging	342
36	Benches after difficult areas on trails	337
37	Picnic facilities for small groups	333
26	Playground equipment	315
52	Trails separate from forest roads	289
68	Encounter rates	287
38	Picnic facilities for large groups	282
20	Grill facilities	272

Question	Management action	Priority rating
51	Cross country ski track maintained	261
41	Staff present and noticeable	247
27	Guided walks	240
42	Visitors' centre	203
32	Trails with exercise equipment	187
69	Type of forest preferred (mixed)	167

Table 3-18: Possible areas of conflict for day-use forests based on response to the 2007 survey of Heidmörk and Kjarni forests.

Question	Conflict possibilities	Priority rating
59	Seeing signs of horses on the trails	-395
58	Meeting horse riders on trails	-391
61	Loose dogs on trails	-369
57	Meeting cyclists on trails	-299
62	Dogs on leashes on trails	-243
63	Cross country skier on trails	-150
68	Desired encounter rate (20-50 persons)	

3.4.2 Priority indices for overnight forests by categories

The priority indices for overnight areas are by site attributes (Table 3-19), management actions (Table 3-20), possible conflict areas (Table 3-21) and policy preferences (Table 3-22).

Table 3-19: Priority ranking of site attributes based on the Responses to the 2007 survey from the overnight areas of Hallormsstadur and Vaglir forests.

Question	Site attributes	Priority rating
21	Access to clean water	481
24	Restrooms in use areas	471
28	Good access road to forest	416
25	Showers at campsites	400

Question	Site attributes	Priority rating
40	Electricity at campgrounds	395
56	Streams and brooks in forest	374
31	Easy trails	358
43	Grocery store near forest	343
30	Moderate trails	271
29	Demanding trails	251
39	Restaurant near forest	249
49	Trees taller than 3 m.	214
50	Forest larger than 10 ha.	192
60	Cultural noise, sights	-421
69	Type of forest preferred (mixed)	161

Table 3-20: Priority index of management actions for the overnight areas of Hallormsstadur and Vaglir forests based on the responses to the 2007 survey used in this study.

Question	Management actions	Priority rating
21	Access to clean water	481
23	Trash containers in use areas	472
24	Restrooms in use areas	471
46	Forest free of trash	464
19	Trail markers	426
48	No human damage to facilities	423
74	Maintenance as natural as possible	421
45	Well designed campsite	419
26	Playground equipment	419
18	Information at parking areas	417
28	Good access road to forest	416
47	No human damage to plants	414
25	Showers at campsites	400
40	Electricity at campgrounds	395
41	Staff present and noticeable	371
34	Trail information at trailheads	361
33	Educational markers on trails	358
75	Campfires in the forest	358
31	Easy trails	358
35	Benches at points of interest	337
36	Benches after difficult areas on trails	328
52	Trails separate from forest roads	323
20	Grill facilities	308
37	Picnic facilities for small groups	279
44	Separate camp sites for tents	240
38	Picnic facilities for large groups	236
27	Guided walks	225
42	Visitors' centre	206
32	Trails with exercise equipment	183
69	Type of forest preferred (mixed)	161

Table 3-21: Areas of possible conflict in the overnight areas of Hallormsstadur and Vaglir forests, based on responses to the 2007 survey of these forests used in this study. Note that these numbers should be detracted when evaluating areas for recreational development.

Question	Conflict Possibilities	Priority rating
59	Seeing signs of horses on the trails	-354
58	Meeting horse riders on trails	-319
62	Dogs on leashes on trails	-224
57	Meeting cyclists on trails	-216
61	Loose dogs on trails	-186
53	Signs of logging	-186
63	Cross country skier on trails	-114
68	Desired encounter rate (>50 persons)	

Table 3-22: Matters of interest for policy making in overnight recreational forests, based on the responses to the 2007 survey of Hallormsstadur and Vaglir forests used in this study.

Question	Policy	Priority rating
67	Hotel in the forest	-312
65	Cottages in the forest	-241
66	Summer homes in the forest	-336

3.5 Importance-performance analysis

Importance-performance analysis was done on a forest by forest basis. All respondents were included to determine the means of the paired questions listed below. Importance from the second section of the questionnaire is plotted for each response on the Y axis and performance from the fourth section is plotted on the X axis. The quality standard is set at three, a rating of satisfactory, on a rating scale running from one to five. The results indicate manageable factors at or above respondents desired quality level, areas currently below the desired quality level and areas of low priority where management efforts can be relaxed without decreasing satisfaction levels of forest guests. For the importance-performance analysis the questions were paired by attribute. The numbers for questions

paired are shown on Tables 3-23 and 3-24. The analysis results are given by forest in Figures 3-41 to 3-44.

The figures provided by this analysis show in a clear graphic manner the effectiveness of present allocation of management resources. The analyses for all four forests show that in the majority of cases management efforts resulted in a relatively high level of user satisfaction. However for all forests the analysis shows to maximize resources, some resources should be redirected.

Table 3-23: IPE pairs for Hallormsstadur and Vaglir forests.

Question	Rating of current conditions
18	76
19	77
33	78
37	Average of 79 and 80
38	Average of 81 and 82
20	Average of 83 and 84
21	85
23	86
24	88
25	Average of 90 and 91
26	92
28	93
29	95
30	96
31	97
33	78
35	100
36	101
40	102
41	103
45	104
44	105
46	106
47	107
48	108

Table 3-24: IPE pairs for Heidmörk and Kjarni forests.

Question	Rating of current conditions
13	59
14	60
26	61
30	Average of 62 and 63
31	Average of 64 and 65
15	Average of 66 and 67
16	68
17	Average of 69 and 70
18	Average of 71 and 72
19	73
21	74
22	76
23	77
24	78

3.5.1 Importance-Performance Estimate for Hallormsstadur National Forest

The importance-performance estimate for Hallormsstadur, Figure 3-41, shows two points in the “concentrate here” section of the graph. These are HL/V 25 provision of showers at the campsites and HL/V 40 provision of electric hook-ups at the campsites. It shows two areas of “possible overkill”. These include HL/V 29 provision of physically demanding trails and HL/V 44 providing separate camping areas for tents, tent trailers and RVs (Figure 3-41).

Overall performance of management activities in Hallormsstadur Forest is high. However resources used for the provision of physically demanding trails could be better used to improve shower facilities and increase electric hook-ups. There is also the possibility that social groups using multiple types of accommodations such as tents and RVs are unable to find areas where the group can stay together.

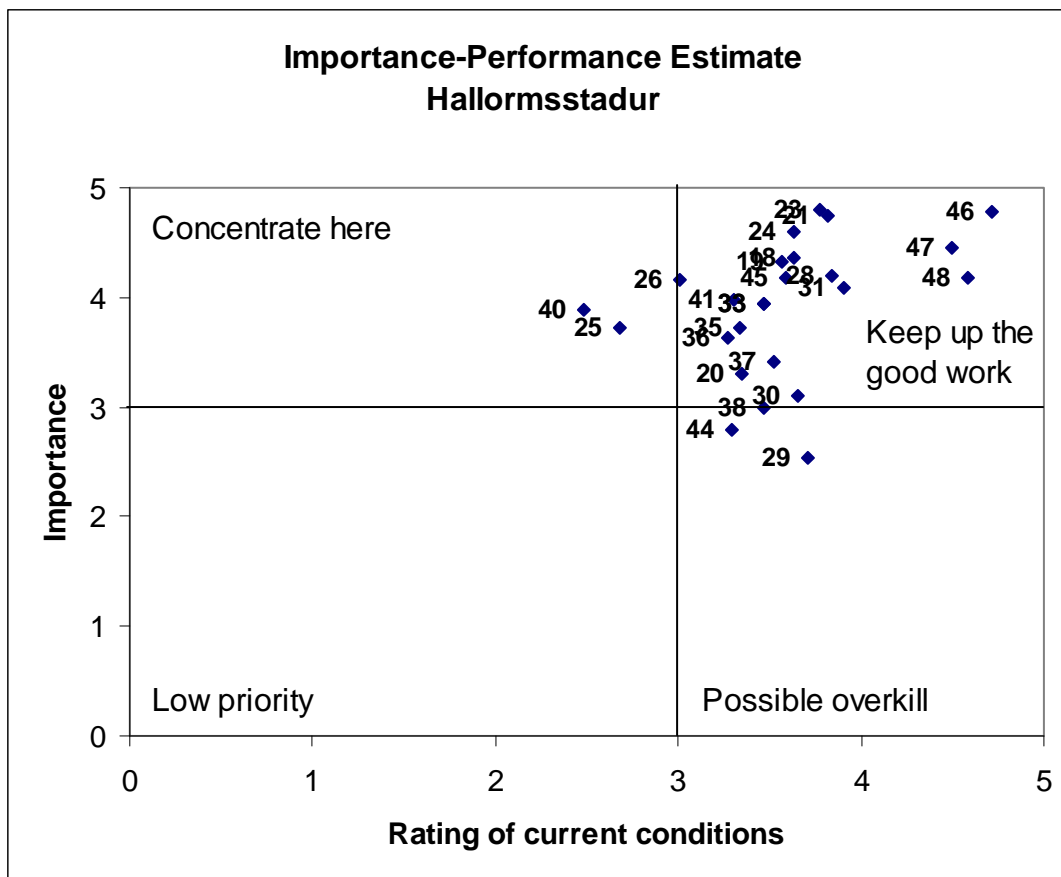


Figure 3-41: Importance-performance estimate for Hallormsstadur National Forest with quality standards are set at 3, a rating of “good” for conditions and “fairly important” for importance. Numbers by data points indicate question numbers.

3.5.2 Importance-Performance Estimate for Vaglir National Forest

The importance-performance estimate for Vaglir, Figure 3-42, shows eight points in the “concentrate here” section of the graph indicating areas where more resources should be directed. These are HL/V 20 provision of grill facilities, HL/V 26 provision of playground equipment, HL/V 30 the provision of moderately physically challenging trails, HL/V 35 placement of benches at points of interest, HL/V 36 placement of benches after difficult sections of the trails, HL/V 40 provision of electric hook-ups at the campsites, HL/V 41 staff present and easily identified and HL/V 45 well designed campgrounds. There is one point in the “low priority” section of the graph (Figure 3-42). This is HL/V 44 the provision of separate camp areas for tents, tent trailers and RVs. This is the same result as found in Figure 3-41 for Hallormsstadur. There are two points in the “possible overkill” section of the graph. These are HL/V 29 the provision of physically demanding trails and HL/V 38 provision of picnic facilities for large groups of over 10 persons.

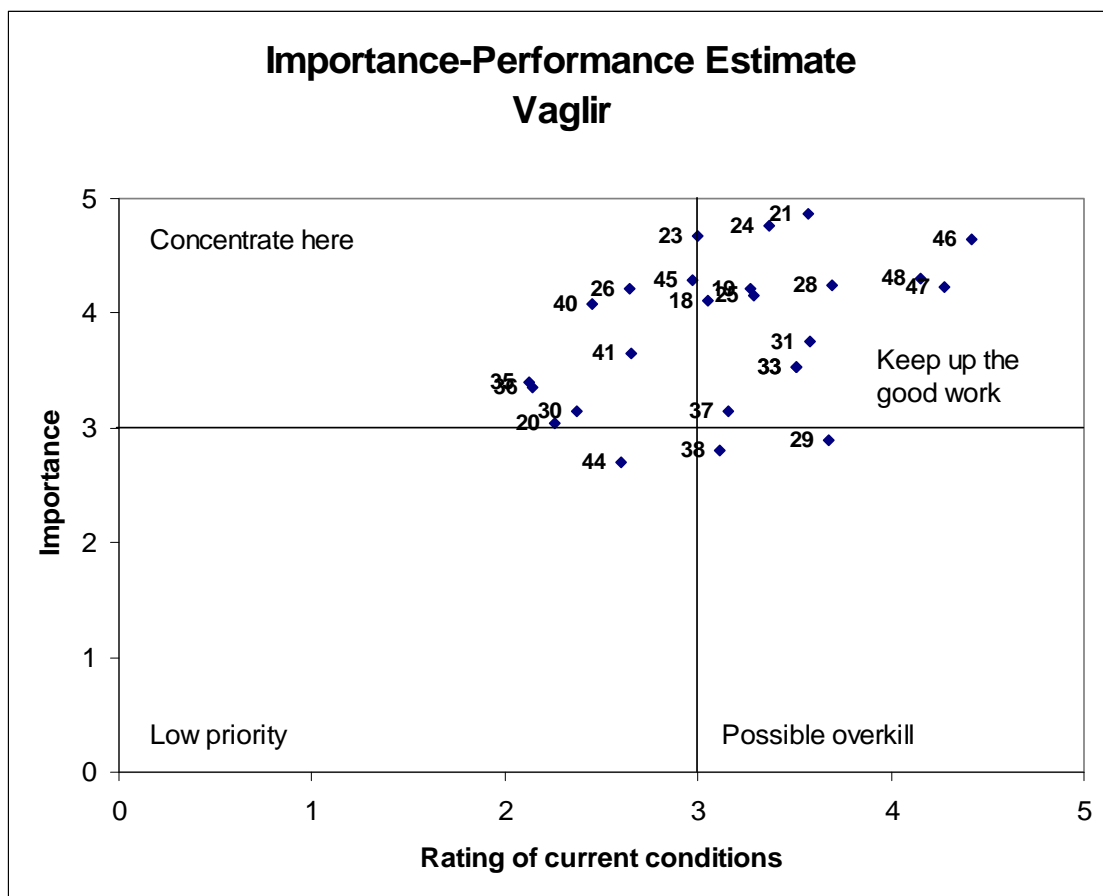


Figure 3-42: Performance-importance estimate for Vaglir National Forest with quality standards are set at 3, a rating of “good” for conditions and “fairly important” for importance. Numbers by data points indicate question numbers.

3.5.3 Importance-Performance Estimate for Heidmörk Forest

There are seven points in the “concentrate here” section of the graph for Heidmörk (Figure 3-43). These include HM/K 16 access to clean water, HM/K 17 trash containers in use areas, HM/K 18 restrooms in use areas, HM/K 19 provision of playground equipment, HM/K 21 good access road to the forest, HM/K 27 information about the length difficulty and time required at the trailheads, HM/K 28 placement of benches at points of interest and HM/K 29 placement of benches after difficult sections the trails. One point is in the “low priority” section of the graph and requires no management action. This is HK/K 33, staff present and easily identified. There are no points in the “possible overkill” section of the graph (Figure 3-43). This indicates that additional resources are necessary for use in these areas to increase the level of user satisfaction.

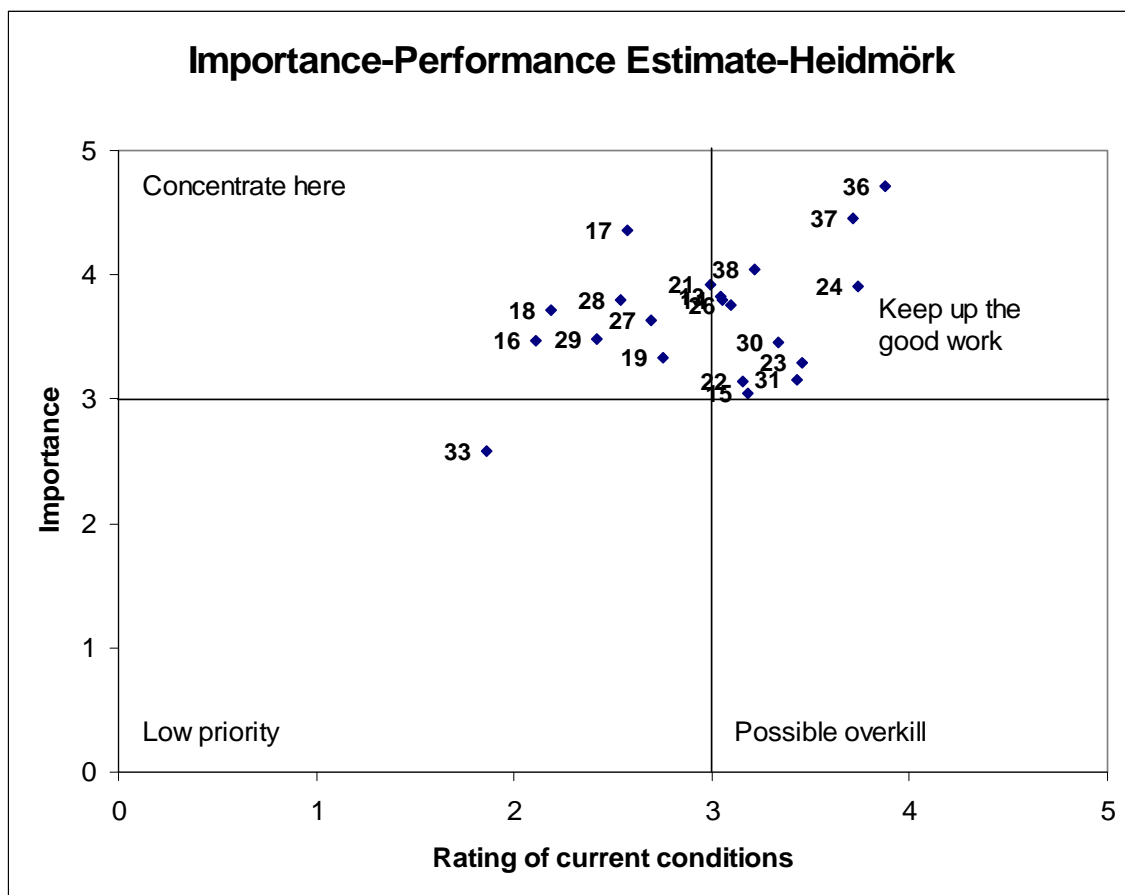


Figure 3-43: Importance-performance for Heidmörk forest with the quality standards set at 3, a rating of “good” for conditions and “fairly important” for importance. Numbers by data points indicate question numbers.

3.5.4 Importance-Performance Estimate for Kjarni Forest

There are four points in the “concentrate here” section of the graph for Kjarni forest (Figure 3-44). These are HM/K 14 trail markers along the footpaths, HM/K 18 provision of restrooms in use areas, HM/K 27 information about the length, difficulty and time required at the trailheads and HM/K placement of benches after difficult sections of the trails. There are two points in the “low priority” section of the graph. These are HM/K 26 educational markers along trails and HM/K staff present and easily identifiable. There are no points in the “possible overkill” section of the graph (Figure 3-44). Therefore additional resources will be needed for use in these areas to increase user satisfaction.

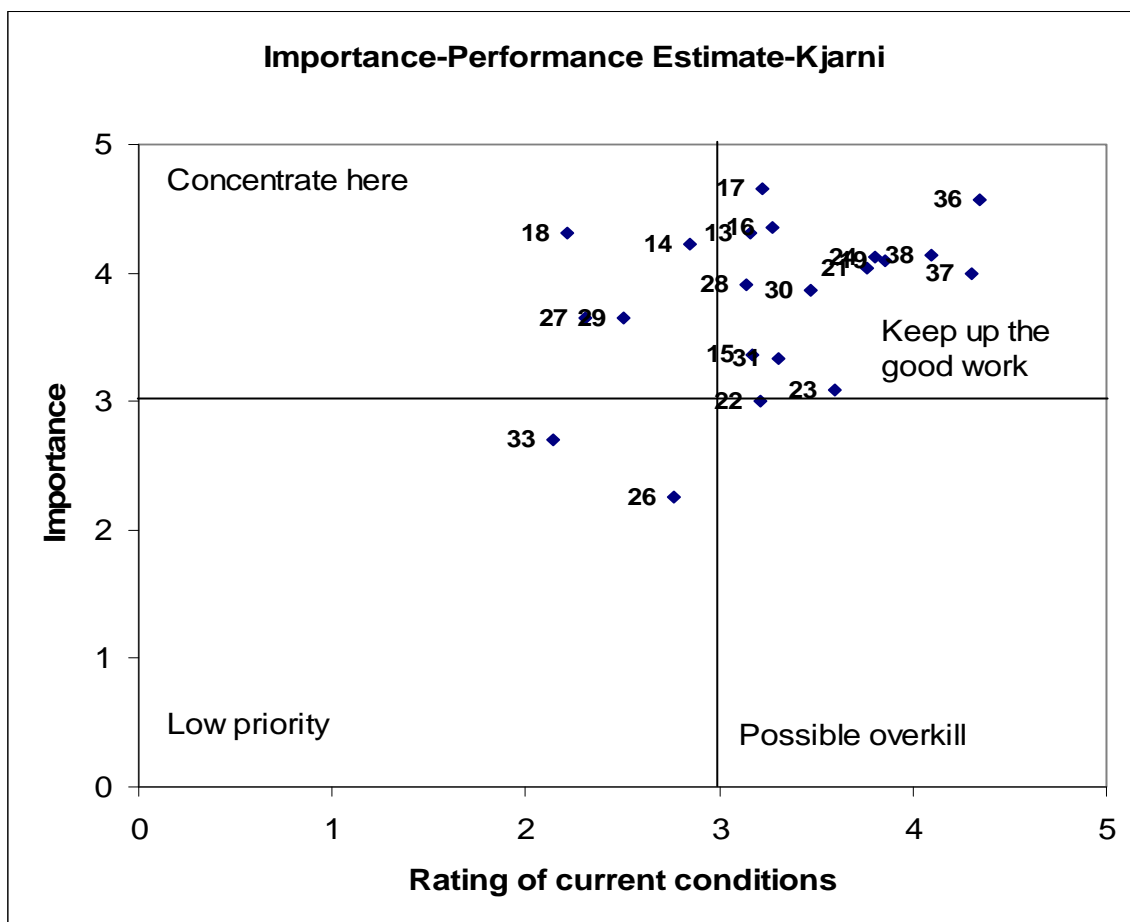


Figure 3-44: Importance-performance estimate for Kjarni forest, with quality standards set at 3, a rating of “good” for conditions and “fairly important” for importance. Numbers by data points indicate question numbers.

3.6 Questions not used for analysis

Despite efforts to ensure that all questions were well designed, there were some that proved to be invalid or difficult for respondents to understand. These were not used in the analysis of the data. The questions removed were HL/V 7, 71 and 72 and HM/K 51.

These questions concerned the factors that determine the suitability of forest type i.e. birch, mixed or coniferous and whether camping should be allowed in general in Hallormsstadur and Vaglir National Forests.

4. Discussion

4.1 Methodological issues

The return rates for the questionnaires ranged from 55% to 71% for the study areas with an overall return of 61%. This must be considered satisfactory especially when the length of the questionnaire is taken into consideration. The pilot group for the survey reported the time necessary to complete the questions to be 25 minutes. This is twice the recommended completion time of 10 minutes for self-administered questionnaires (Watson *et al.*, 2000, 160). The lines following the last question asking respondents to add any additional information regarding their forest visits or to critique the questionnaires were often used. Many respondents provided additional information about their visits, several expressed a positive attitude towards the survey and only one respondent wrote the questionnaire was too long. Therefore the use of this type of survey in the future would not only continue to provide planners and managers with a valuable source of information, but would harbor feelings of participation in planning and plan ownership by forest users.

As the data were recorded, the answers were evaluated for the types of problems cited in the literature. Among these is the tendency of respondents not to use the entire scale of answers (Noe and Uysal, 1997). This however was not the case in this survey; respondents utilized the full scale of responses and many used the lines following the questions to explain their responses, especially when these were negative. Another concern with delayed questionnaires is the ability of respondents to accurately recall conditions in the forest. Research done by Shafer (1967) showed no significant difference in the responses of recreationists to an on-site study and off-site responses from the same group three months after their recreational visit. This coupled with the explanatory responses of survey volunteers indicates there is no reason to think that recall was a problem. Another possible flaw in surveys of this type reported in the literature is the tendency of recreationists to adapt their levels of satisfaction with their visit to conditions found in an area (Laven *et al.*, 2003). The questionnaire used in this study asked both for respondents' desired condition and their level of satisfaction with existing conditions. There were marked differences between responses in the section concerning desired conditions and that for current conditions in the study survey. This is in keeping with findings that respondents do not express responses revised to fit existing conditions (Laven *et al.*, 2003).

One more factor that might influence the validity of a survey of this nature should be considered. This is the high percent of return visitors to the study areas. Persons who are dissatisfied with an area will not return to that area for recreational purposes. This can produce overly high satisfaction ratings in study areas (Nyaupane *et al.*, 2003). This may be an unavoidable complication for forest recreation research in Iceland. Iceland is a small country and the amount of forested land is limited, only about 1.5 % of the total land area, most of which is recently established plantations and young birch forests in the establishment and stem exclusion phases. These areas are generally unsuitable for recreational use at this time. Options for recreationists when choosing a forest to visit are therefore limited. For the same reason, many of the forest visitors began visiting “their” forest at an early age. These factors make the number of potential new visitors to an area very low. This does not however have a negative effect on the validity of the present study. The goal of the study was to determine what factors make an area desirable for recreation and to identify the outputs or benefits accruing to forest recreationists and to use these data for developing a method for managing and zoning recreational forests.

Overall ratings of forest experiences, in the last part of the questionnaire, were very high. Of the 235 respondents, only two used the rating of three of a scale of 1 to 5. There were no overall ratings of satisfaction below three. However in the section where respondents rated their level of satisfaction with specific attributes, the entire scale was used. Therefore while the “halo” effect (Noe and Uysal, 1997) appears in the overall rating, it did not affect rating on an attribute level.

4.2 Demographics

Demographic factors outside those necessary for placing a respondent in a type of social group were not of major importance for this study but deserve some mention.

The gender of respondents in the two camping areas was approximately 60% female and 40% male. About 65% of the respondents in Kjarni were female but only 40% in Heidmörk (Figure 3-1). While this is in keeping with the percent of female and male volunteers on the recruitment lists, it is not representative of the gender division of Icelanders, which is almost exactly 50-50 (Hagstofa Islands, n.d.). The gender proportion

difference between respondents in Heidmörk on the one hand, and the other three forests on the other may explain some of the patterns of differences observed in the responses. Although not significant, the demands for infrastructure in Heidmörk were consistently lower than those found in the other forests (Figures 3-23 to 3-27 and 3-29 to 3-40). This reflects findings of research showing that female visitors place a higher value on infrastructure (Green *et al.*, 2007; Bowker *et al.*, 2006; Tarrant *et al.*, 1999 and Dwyer and Barro, 2001). However, demonstrating these differences would require a gender-oriented study that is outside the scope of this paper.

Most respondents had a primary or secondary level of education. Responses from persons with a university level education were few for all forests and none for Kjarni (Figure 3-3). Research into the demographics of recreational users of wilderness areas has shown a worldwide trend with the majority of recreationists to these types of areas having a university level education (Hendee and Dawson, 2002). The absence of university educated persons in the survey (Figure 3-3) should be examined more closely. There is a possibility that university educated persons chose areas with less infrastructure than the study areas and desires further study. This information would be useful in addressing the question of whether planning and management can or should take this factor into consideration in future.

Most respondents (93%) reported visiting the forest as part of a social group (Figure 3-21). This is a clear indication that most people are not seeking solitude in the forest but rather an environment in which to spend time with others. This may account for the rating of “possible overkill” for the provision of separate camping areas for tents and other types of vehicles in the importance-performance analysis for Hallormsstadur and Vaglir National Forests (Figures 3-41 and 3-12). Although there are definite safety issues involved in providing areas for mixed accommodation types, planners and managers should make some provisions for these groups.

The number of respondents who were return visitors to the forest they were recruited in was 90% or more in all four forests (Figure 3-5). Visitors to the day-use forests reported visiting the forest a few times a year (Figure 3-6). The number of total visits to Hallormsstadur was less than 10 times. The responses from Vaglir forest indicated a lower number of previous visits or about 1-5 total visits (Figure 3-7). These findings are in

keeping with the finding from IMG Gallup (2005), Fridriksdottir (2006) and the unpublished 2005 survey done in Hallormsstadur (Curl, unpublished survey data, 2005). Repeat visits to recreational areas have been shown to foster what has been termed “sense of place” (Farnum *et al.*, 2005). Persons that had developed this “sense of place” were shown to be more active in environmental issues especially in “their areas”. The possibility of utilizing their support for protecting recreational areas and lobbying for resources to improve recreational opportunities should not be ignored by recreational planners and managers.

The duration of visits to the day-use areas were usually between one and two hours (Figure 3-9). The same figures were found in surveys done by Fridriksdottir (2006) and the Forestry Association of Reykjavik (Sigurdsson, Bjarni D., email, 9 June 2007) for Heidmörk. The mean for visit duration in Hallormsstadur forest was 2.5 days and for Vaglir 6.75 days (Figure 3-10). The difference in these figures is the result of policy differences between forests. Leaving unoccupied camping trailers and RVs is allowed in Vaglir National Forest, but not in Hallormsstadur National Forest. There are several individuals who take their camping vehicles to Vaglir at the beginning of the summer season and leave them for the entire summer. These individuals then leave the forest for short periods and more or less live in the forest during the summer season. Duration for this group was not included in the study, as this pattern is atypical and would skew the mean for typical users.

Respondents to the survey were given the option of providing additional information and also asked directly in the surveys if they had any uncomfortable experiences during their forest visit. While respondents in Hallormsstadur, Heidmörk and Kjarni forests seldom reported negative encounters, several guests to Vaglir National Forest did. These were accounts of negative encounters with long-term guests. Length of time spent in an area as well as frequency of visits increases “sense of place” and feelings of ownership (Farnum *et al.*, 2005; Smaldone, 2007.) In some cases however, these feelings become so strong that long-term guests display territorial behaviors (Wickham and Zinn, 2001). Territorial behaviors are intended to control the activities of others and their access to specific areas (Wickham and Zinn, 2001). These types of behaviors represent a source of conflict between users. Managers and planners should be aware of the existence of these tendencies and their potential for causing visitor dissatisfaction and displacement.

4.3 Travel patterns

Respondents from Hallormsstadur and Vaglir forests were asked if the forest they were recruited in was the main destination of their trip. Their answers revealed that the forest was their main destination in about 50% of cases for those visiting Hallormsstadur and 60% for Vaglir (Figure 3-13).⁸ Eighty percent of respondents from Hallormsstadur and 50% of respondents from Vaglir reported having stayed at other campgrounds as part of the same trip (Figure 3-14). A large percent of guests to these two forests, over 60% for Hallormsstadur forest and approximately 60% for Vaglir, reported taking day trips to areas outside the forest while they were camping in the forests (Figure 3-16). The responses to the question about where they went did not reveal any pattern, but many named nearby towns and areas with natural attractions in the vicinity of the forests. This is similar to a pattern found in some North American forests, where the forest campsites are used as bases from which to visit surrounding areas (Shafer, 1969). This pattern of vacationing may also be connected to improvements in roads discussed in section one of this paper (Figure 1-1).

Respondents were asked why they chose the forest they were recruited in rather than other areas for their recreational visit. The majority named the environment. The second most common answers were proximity and location (Table 3-3). While in some cases it is possible to equate the terms proximity and location and combine these responses, in light of the travel pattern discussed above, doing so in this study is problematic since a campsite may be chosen for its location with respect to surrounding areas without being in close proximity to any of them. The same is true of day-use areas, where proximity may mean closeness to home but location could refer to a combination of environmental and travel factors. Either way, both proximity and location are important to people and should be considered when making decisions on where and how resources are used in improving forests for recreation.

Respondents of both questionnaire types were also asked what type of activities they engaged in during their visit to the forest. Responses listing multiple activities that are not

⁸ This is due to a large number of short term guests to Vaglir forest living in Akureyri.

site specific were classified as general recreation. Single activities were listed as such, as were those that are site specific such as boating or fishing. Most respondents reported general recreational activities such as grilling, walking, playing with their children and relaxing. Many of the respondents at Hallormsstadur and Vaglir listed taking day trips under this question. Observing nature was mentioned in 16% of responses in Heidmörk but was reported less frequently in the other three forests. Other responses such as boating, horseback riding, fishing and exercising were reported much less frequently (Table 3-4). Therefore provision of site-dependent activities stressed in the recreation opportunity spectrum (Clark and Stankey, 1979) is not a useful tool for Icelandic forest recreation planners and managers at this time. Based on the findings of this survey emphasis should be placed on general recreation and activities designed for groups rather than individuals. (This emphasis may have to be changed if future research on early morning and evening visitors and/or visitors during other times of the year indicates significantly different recreational preferences.)

Because of the importance of walking or hiking to recreational visits to forested areas perceived by planners and managers, responses specifically naming walking were recorded separately. In Hallormsstadur, Heidmörk and Kjarni forests walking was specifically mentioned by over 60% of respondents and in Vaglir the figure was approximately 70% (Figure 3-17). This makes walking one of activities most frequently engaged in by forest visitors and supports the notion that provision of footpaths is important. However respondents placed a higher priority on paths easily traversed therefore emphasis should be placed on designing this type of trail in all four forests. Facilities such as easy trails, trail markers and benches along trails all rated highly in the priority indices for both day-use and overnight forests (Tables 3-17 and 3-20). This is in keeping with the results of Fridriksdottir (2006) for Heidmörk and the IMG Gallup (2004) survey done at a national level.

4.4 Miscellaneous Questions

Two questions of special interest to forest wardens in Hallormsstadur and Vaglir National forests were whether trails other than the main trails associated with the arboretums and campsites were being used by visitors and if this was correlated with using the trail guidebook for the area. There was a significant correlation between the two. The reason

most often reported for not using other trails for both forests was that the trails were not suitable for the social group the respondent was visiting the forest with. The reason most often cited for not using the trail guide was respondents did not know about it. It is not possible to draw the conclusion that having the trail guide would increase the likelihood of visitors utilizing trails in the forest, although increasing awareness and availability of the trail guides and management efforts to make trails more suitable for the types of social groups visiting the campsites could result in an increase in trail use and thus greater enjoyment of the forest by visitors.

Respondents from the day-use areas were asked if they made special trips to the forest to harvest non-timber forest resources (Figure 3-18). Positive responses were 70% in Heidmörk and 20% in Kjarni. The major resource harvested in both areas was berries (Figures 3-19 and 3-20). Thus, making provisions to improve berry-picking opportunities in the forests, by introducing berry producing species, especially of forest associated species for example *Ribes* and *Rubus saxatilis*, is likely to increase visitor use and satisfaction and lengthen the season of recreational use.

4.5 Identifying meaningful categories

It is well known among forest recreation planners and providers that recreationists engage in recreational activities to receive positive experiences (output) and they chose the setting (input) most likely to allow the realization of these experiences (Pierskalla *et al.*, 2004). As shown above, there is no one specific recreational activity other than walking sought by the majority of respondents. They were participating in multiple activities, or general recreation. The data also showed that the forest environment is the factor determining choice of recreational area and is seen by those choosing forests as the setting most likely to facilitate the achievement of their recreational goals.

Because respondents desired general recreational activities, an analysis of desired attributes and infrastructure by specific activities as done in the recreational opportunity spectrum (Clark and Stankey, 1979), is not helpful in designing a zoning system for recreational forests in Iceland. Therefore the importance of attributes and infrastructure must be analyzed using other categories. Because of the lack of prior data for use in hypothesis construction and testing desirability (importance) of these attributes and

infrastructure elements, three a priori categories were used: 1) social groups, 2) benefit groups and 3) type of forest use (day or over-night), to determine if there were patterns of significant differences in desirability that could be used in a meaningful way.

4.5.1 Social groups

There were some differences in the distribution of social groups by forest (Figure 3-21). However, analysis by social group and forest identified only one of 50 items tested for Hallormsstadur and Vaglir National Forests and the 43 items tested in Heidmörk and Kjarni where the difference varied significantly between social groups (Table 3-6). The variance was accounted for by two of the twenty-three social groups placing slightly more importance on the provision of restroom facilities. People basically had the same priorities regardless of what kind of group they were visiting the forest with. Therefore, social group type is not a meaningful basis for designing a zoning system or directing management priorities.

4.5.2 Benefit classes

Analysis based on the benefit classes described by Behan *et al.* (2000), showed a striking pattern in the types of benefits accruing to forest recreationists (Figure 3-22). The benefits rated important by most respondents in all four forests were restorative, social, learning and spiritual. In addition to these four benefits, physical benefits were also rated highly in both day-use forests (Figure 3-22). Analysis of desirability (importance) of attributes and infrastructure by what type of benefit the respondent rated most important (benefit group) between forests revealed only six factors where there were significant differences (Tables 3-8 to 3-13). These were: 1) access to clean water, 2) provision of playground equipment, 3) presence of a grocery store in close proximity of the forest, 4) streams and ponds in the forest and 5) the appropriateness of having a hotel in the forest (Hallormsstadur and Vaglir only).

This is a difference in only 10% of the total number of factors in the section of the questionnaire dealing with desired features in recreational forests. However, examination of these factors revealed no pattern of differences by benefit groups, the differences being between forests rather than specific benefit groups. Therefore, benefit classes are not a

meaningful method of division for developing a zoning system. However the data do indicate the types of benefits most commonly sought by forest visitors and because these are the ultimate outputs, they deserve special consideration in zoning and management systems. The integration of these benefits into such systems will be discussed below.

4.5.3 Forests

Recreation forest type

The third analysis of factors was done between forests. Eighteen factors were found to vary significantly between forests. Seventeen of these were questions asked in all four forests but one was pertinent only in over-night areas in Hallormsstadur and Vaglir forests (Figures 3-23 to 3-40). The responses varied significantly by forest type, i.e. by day-use forests vs. forests used for camping. There were significant differences in 36% of the factors tested between day-use vs. camping. The relatively high percent of differences and differences in travel times along with the additional infrastructure necessary to accommodate over-night guests makes use type a meaningful criterion for zoning and managing new and existing recreational forests.

Degree of naturalness of the forests

Another factor shown to influence the amount of infrastructure expected and acceptable to outdoor recreationists is the perceived degree of naturalness in an area (Cole, 1985; Ewert, 1998). All of the forest areas included in this study are comprised of variable mixtures of native birchwoods (planted birch in Kjarni, birch scrub in Heidmörk), mixed-species forest and exotic plantations (mostly conifers). Respondents were asked what type of forest they felt the forest they visited was. Possible answers were birch, mixed and coniferous. They were later asked how natural they felt the forest they were in was. There was no correlation between these two factors. Perhaps the best way to sum this up is from the respondents themselves. Several supplied additional information on the lines provided for this question. Most of the comments mentioned factors respondents felt distracted from the naturalness of the forest and named such things as power lines, traffic and aircraft noises. One respondent who had given the forest a high rating for naturalness went on to add “but of course the trees were planted”. The answers to these questions and the survey done for the Forest Service (IMG Gallup, 2004) indicate most Icelanders do not equate

exotic species with lack of naturalness. This is in keeping with a study showing very few people equate natural to the “pristine myth” (Hull *et al.*, 2003). And indicates that plantation forests developed for recreation in Iceland will likely be accepted by people as natural and that adding infrastructure to facilitate recreation in birch forests will probably not detract from their perceived naturalness or visitor satisfaction.

4.6 Implications for zoning and management of forests for recreation

The data gathered in this survey and the priority lists developed from the desires of recreationists can be a useful tool for determining an area’s suitability for recreation development, or zoning an area with potential for this type of land use. The following is a method for site evaluation based on research from other countries, the data gathered in this survey and the priority lists developed (Tables 3-16 and 3-22).

Since the most meaningful division was by recreational visit type (day-use vs. overnight use) the priority lists were developed using this division. The priority lists were divided into three categories: 1) site attributes to be used in zoning, 2) infrastructure and other management attributes used to improve existing recreational areas and develop new ones and 3) conflict possibilities. Although economic factors such as area development and maintenance, visitor safety issues and other practical matters must also be taken into consideration, they are outside the scope of this study.

4.6.1 Zoning recreational use of forests

Several factors are important for determining the suitability of a site for development as a day-use recreational forest. They are generally not within the control of management, but rather based on location, topography or anthropogenic factors.

The first consideration is the amount of time it takes a significant number of users to reach the area from their homes. The reported travel time for day-use respondents in the survey was 10 to 30 minutes (Figure 3-11). Although almost all respondents report they would be willing to drive a greater distance, it is not advisable to increase travel time to a great degree. When recreationists are forced to use an area other than the area they usually use, areas a similar distance from their homes are preferred (Nyaupane *et al.*, 2003; Hornsten

and Fredman, 2000). Therefore travel time is the first factor in zoning an area's suitability and the distance from potential forest recreationists should take no more than 20-30 minutes of travel time.

The highest ranked attribute on the priority list was a good access road to the forest and the second was easy trails. This means the topography of an area must be relatively flat or at least include flat areas along with steeper terrain. The next three items on the list were related to the presence of water: the provision of restrooms, presence of streams and ponds in the forest and access to clean water. Although there are ways to deal with a lack of water by management actions, a good source of naturally occurring water not only provides for important desires of recreationists, but reduces the capital expense of area development. The provision of physically moderately and intensively demanding trails was next in priority ranking. It is therefore desirable to have topographical heterogeneity. The next priorities on the list were the forest should be larger than 10 hectares and trees taller than three meters. To this should be added that most respondents preferred mixed forests. Other items receiving lower priority rankings were having a restaurant and grocery store near the forest. The final priority that should be taken into consideration is the absence of cultural noises such as highway and air traffic. Potential recreational forests within the desired distance can be scored for these attributes. Such scores along with practical considerations such as costs and maintenance can be used to determine the most suitable areas for recreational development. Priority ranking lists for day-use forests are found in Table 3-16 to 3-19.

A slightly revised version of this system is also applicable to zoning areas' suitability for provision of camping facilities. The travel patterns found in the demographics section provide clear information for determining spatial suitability. The majority of over-night visitors were taking driving/camping holidays stopping at various campsites along their way. While they are using the campsites, many of these guests make daytrips to local areas of interest. The desired driving time from home for this group is 4 hours (Figure 3-12). However, it is reasonable to interpret this as being 4 hours from their point of departure, i.e. the last camping area visited. Based on these factors, camping facilities should be no more than 4 hours from the nearest population center or highly frequented campsite. It is also desirable that forests chosen for providing over-night facilities be in areas with multiple sites of interest in close proximity.

Other priority factors for overnight visitors are similar to those for the day-use visitors, although more emphasis is placed on close proximity of a grocery store and restaurant by over-night users. It is also necessary that there is a sufficient area of level ground and the surface firm enough to tolerate use by automobiles and recreational vehicles. While these practical factors are not addressed in this thesis, they along with others such as environmental concerns must be included in any system for choosing and developing new and existing recreational forests. Electricity should be easy to provide to campsites.

4.6.2 Priority rankings for management actions

The priority lists for management actions and possible conflicts provides recreational planners and managers with a basis for prioritizing work schedules and allocation of resources. These lists for day-use and overnight use areas are found in Tables 3-17 and 3-18 and 3-20 to 3-23. Resources should be allocated to items on the priority list in proportion to their ranking index. Features with a rating of less than 200 are not of importance to users and require no management action.

The priority lists are input based. However, to provide the desired outputs, the benefits recreationists seek in forest environments must also be considered. These benefit classes are restorative, learning, social benefits and spiritual benefits. Physical benefits were also seen as important to the day-use respondents. It should be noted that the importance of physical benefits to users of Kjarni and Heidmörk may be underrepresented in the survey because of the recruitment technique used. Recruitment was done during the working hours of forest staff and while this included some weekends, it did not include early morning or late afternoon/evening hours which are popular times for walking and jogging.

Restorative benefits were reported by most respondents. The characteristics of restorative environments are well documented and were discussed in section one of this paper. These attributes have been simplified into four major attributes in forest recreation literature (Hammit, 2004): 1) a sense of being away, referring to an environment significantly different than that of an individual's everyday life and removed from everyday routines, 2) ability to provide opportunities for mental exploration 3) provide an element of fascination that captures the attention, but not requiring problem solving and 4) elements in an

environment need to be compatible with expectations of features appropriate to that specific environment. Other benefits (learning, social, spiritual, physical) should also be emphasized, especially in management of possible conflicts.

4.6.3 Possible conflicts of management actions

Provision of opportunities for some activities and benefits may conflict with a benefit class of greater importance and must be managed in a way that minimizes conflict. This may be accomplished by zoning within a forest. For example some areas may be designed for facilitating group activities important for persons desiring social benefits and other areas designed for peaceful, meditative walks by persons desiring restorative or spiritual benefits.

The importance of benefits gained by recreating in forest environments to recreational users sheds light on some of the seemingly contradictory or counterintuitive responses found in survey. One example is the provision of separate areas for tents, tent trailers and recreational vehicles. Intuitively, one assumes people in tents would desire to be off by themselves and away from traffic and the noise of motorized campers. As one respondent pointed out, there are also safety issues to be dealt with. On a practical level, it is expensive to provide electrical hook-ups and from a manager's point of view a waste when these areas are used by people in tents. However many respondents did not want this type of segregation in the campgrounds. Their responses are more easily understood in the context of the type of groups represented and the desired benefit. Many respondents came with groups of extended family or family and friends. In many cases separate areas for tents and other types of camping vehicles would separate these groups and decrease their possibilities for gaining the desired social benefits.

All of these factors, both input and output, must be taken into consideration in zoning, designing and managing recreational areas. Doing so increases the possibilities for user satisfaction and decreases the chances of management mistakes.

4.7 The Importance-performance estimate as a management tool

The importance-performance estimate was developed by marketing experts specifically to measure intangible services (Martilla and James, 1977; Hollenhorst and Stull-Gardner, 1992; Ennew *et al.*, 1993; Manning and Lime, 2000). It provides managers with a valuable tool for use in specific forests to measure user satisfaction levels and to prioritize management actions for the area (Figures 3-41 to 3-44). There has been some suggestion that the standard deviation from the mean be used on the graph itself to show the range for the possible positions of an item (Tarrant and Smith, 2002). In the present analysis, this type of representation was deemed to be neither necessary nor appropriate. The graph was designed to give managers a clear picture of how satisfied their guests were with their stay on a feature by feature basis. Including standard deviation would indicate the variability in responses to individual questions, but it would not change the mean and could result in confusion when making management decisions, nor is its use appropriate with non-parametric statistics.

A large negative standard deviation substantially lowers the importance of an item, allowing an area to be managed at a lower than desired level for that particular feature. Using the upper limits causes managers to utilize scarce resources to maintain a higher level of quality than necessary for a specific feature. In some cases this would be done at the expense of other pressing issues. Raising the goals for a forest is essentially the same as using the upper limits provided by adding a standard deviation. While the degree of satisfaction was set at three, a rating of “satisfactory” for this study, the degree of satisfaction for use in the importance-performance estimate should be determined by the appropriate agency to reflect the goals of the agency and the desires of its users for specific forests. Another factor affecting the use of standard deviations is the type of data utilized. Data in surveys of this type are non-parametric and therefore the appropriateness of using standard deviations is questionable.

Another application of the importance-performance estimate is to measure the level of success of various management actions. After taking action to increase satisfaction of a specific feature, a short questionnaire can be used among forest visitors asking them to rate a few features including the one of interest. These figures can be compared to the previous rating to determine if management actions were successful in bringing the item within the desired section of the graph.

A simplified questionnaire for collecting data for importance-performance estimates can be developed and should be administered regularly at intervals of no more than 5 years. This ensures that the standards and desirability of features are current. It also indicates undesirable changes in a timely manner allowing management actions necessary to bring them back into keeping with the desired conditions in an area.

Conclusions

The underlying theories for provision of recreational opportunities in natural areas like forests have gone almost full circle, from the work of early proponents stressing the importance of physical and psychological benefits (output) to the Recreational Opportunity Spectrum and Limits of Acceptable Change (input) back to management based on benefits (output). What was once speculation regarding the attraction of natural areas and the importance of access for the general public has now to a large extent been validated by research. However, formal planning of recreational areas in Icelandic forests is still regarded by many of those responsible for administering them as an expensive, time consuming process and largely unnecessary. The majority of improvements and development continue to be based on the forestry staff's perceptions of users' desires on a problem by problem basis without considering the overall goals for an area, ecological and social consequences of management actions or a sufficient understanding of the desires for specific output by recreational users. While these actions are well intended, they are not always optimal with respect to the desired output for the greatest number of people. For example the provision of trails is often based on providing physical benefits, ignoring the fact that many (perhaps most) visitors desire other possible benefits or outcomes. In order to provide opportunities for realizing desired outcomes, infrastructure (input) must be designed to provide settings appropriate to the desired benefit(s). When managing for recreation where both forested areas and financial resources are limited, management efforts must incorporate all these factors to optimize available resources.

Traditionally recreational areas in Icelandic forests were not planned *per se*. Areas were developed by watching where the people went and concentrating improvements in those areas. These improvements were based solely on casual observations, opinions voiced by the more vocal users and the perceptions of forestry staff. While this approach to recreational management may have been sufficient in the past when the use of forests by the public was limited, the increase in forest use for recreation warrants the use of time and resources necessary for a more effective method of recreational planning. In many of Iceland's forest recreation areas, the level of use is reaching the point where it is necessary to develop new, alternative recreational areas to protect environmental and social values of established areas. When a new area is opened, the traditional method of simply improving

an area already in use is no longer an option and shifts in management emphasis from input to that of output are called for. Management actions are also necessary in some of the older forests to accommodate the changes in user demands occurring in recent years such as the provision of electricity and the trend of using tent trailers and heavy recreational vehicles rather than tents.

Recreational planning need not be overly complicated, prohibitively time consuming or expensive for Icelandic forests. The impression that this is so may be caused in part by the findings in the professional literature of persons such as Shafer who declared the average camper does not exist and there are multiple groups that must be considered in order to provide desired recreational experiences. Even literature such as the Recreational Opportunity Spectrum and Driver's benefit based management framework present seemingly complicated models for recreational planning. However these are based on research done in areas where tradition and environment have produced more complex recreational patterns. The results of comparing various group types in this study show greater homogeneity in recreational users and their demands than that represented in the studies done in other countries. While there are distinct recreational groups in Iceland, the demands made by these groups for infrastructure and management as well as desired benefits are so similar that planning methods need not be overly complicated to be successful.

While not exhaustive, the priority indices and the information for travel patterns in this study provide a practical basis for zoning areas for development of new recreational areas. They provide guidelines for travel time as well as physical, environmental and cultural factors determining the desirability of an area for recreational development. By utilizing Tables 3-16 to 3-22, forest planners can easily evaluate areas within the desired driving distance and use a point system to compare those attributes found in the priority indices to factors such as other objectives for an area, long term district planning goals, potential catchment area, and the economics of site development and maintenance. However while this process addresses the input aspects of planning, output must be given high priority. Again, in management for Icelandic forest users, the homogeneity of desired benefits makes this a relatively straight forward process. The overwhelming majority of respondents in this study desired four benefits: restorative, social, learning and spiritual with the addition of physical benefits in day-use areas. All of these benefits can easily be

planned for within an area in a manner that minimizes possible conflicts with other forest uses and between groups wanting various benefits.

Not only does the survey process provide planners with a straightforward method of evaluating potential for recreational development, it is also an important step in integrating public opinion into the planning process. To date this is a step that, for both practical and economic reasons, has for the most part been excluded from recreational planning in Icelandic forests. Although this study was designed to sample forest recreationists specifically and thus did not utilize random sampling, it gives a reasonable indication of the opinions of recreational users in general⁹. In the comments made regarding the survey it became apparent that respondents were pleased to be part of the survey and welcomed the opportunity to have their opinion heard. Therefore not only is there reason to believe that recreationists are willing to take part in further surveys, but also that surveys of this type foster a feeling of participation in management among the public.

Steps toward addressing other vital recreational management issues are also presented in this thesis in the form of the importance-performance estimates. In order to prioritize resource expenditure for management actions in working plans it is necessary to know not only what the existing conditions are, but also the importance placed on various attributes by recreationists. The importance-performance estimate provides managers with a simple tool to use in prioritizing work plans.

However, the utility of the importance-performance analysis is not limited to prioritization and it can be readily used to determine the success of management efforts in correcting specific problems in a forest. If an attribute is shown to be below the quality desired by the public and management actions are taken to rectify the situation, a quick survey can be done afterwards to gauge whether or not they were successful or if other actions are warranted. The importance-performance estimate can also be used to set quality standards for recreational areas and they can then be used to develop a monitoring system for use by forest staff.

⁹ It should be noted that persons using peri-urban forests for recreation are not fully represented in this study and that this should be addressed to help complete the priority indices.

This study found that the only meaningful groupings for use in developing methods for zoning and management of areas for forest recreation were by use-type, i.e. day-use vs. camping, and by benefit types. The similarities in the types of benefits desired by forest recreationists in all four forests are striking and offer new insights and perspectives for planners and managers of peri-urban and urban forests as well as rural forest areas.

While incomplete, this study does offer important information regarding zoning, developing and managing forest recreation areas in peri-urban and rural forests with implications for use in urban recreational areas. It also shows that formal recreational planning for forests need not be overly complex, time consuming or expensive and that it provides a viable method of incorporating public opinion into the planning process. It is clear that concentrating planning and provision of recreational opportunities in forests based on an input (infrastructure) basis is not sufficient. Goals for a recreational areas and their subsequent development should be dictated by the desired output, in this case the benefits accruing to the area's users. It is important to integrate social science approaches into forestry, especially with respect to recreation where outputs are at least as important as attributes of the physical and biological environment and infrastructure in planning and management.

The physical, psychological and social benefits to individuals gained by participating in recreation in "natural" or what is termed restorative environments is well documented in the current literature. Not only does time spent in restorative environments increase quality of life for individuals, it profits society in general by decreasing stress related illness, increasing productivity in the workplace and strengthening social bonds. Further research similar to that used in this study could provide urban planners with the information necessary for use in a planning framework for restorative urban environments and increasing quality of life.

References

- Bargh, J.A., Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist*, 54, 462-244.
- Behan, Jeffrey R., Richards, Merton T., and Lee, Martha E. (2000). How do visitor density and anthropogenic change in frontcountry wilderness settings affect recreation benefits. In McCool, Stephen, F., Borrie, William T. and O'Loughlin, Jennifer (comps.) *Wilderness Science in a Time of Change Conference: Wilderness as a Place for Scientific Inquiry, Missoula, Montana, May 23-27 1999*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).
- Bell, Simon, Tyrvaiven, Liisa, Sievanen, Tuija, Probstl, Ulrike and Simpson, Murray (2007). *Outdoor recreation and nature tourism: A European perspective*. Retrieved on 14 Nov. 2007 from Living Reviews in Landscape Research: [http:// livingreviews. or/Irir-2007-2](http://livingreviews.or/Irir-2007-2)
- Berto, Rita (2005). Exposure to restorative environments helps restore attentional capacity. *Journal of Environmental Psychology*, 25, 249-259.
- Bjarnason, David, Skulason, Einar and Hjalmarisdottir, Erla Hlin (1996). *Erlent ferdafolk i natturu Islands: Konnun a vidhorfum og hugmyndum erlandra ferdamanna til natturu og umhverismal a Island*. Reykjavik: Ferdamalarad Islands.
- Blöndal, Sigurdur (1991). *Forest Recreation in Iceland*. Egilsstadir: Compiled for the SNS Project Multiple-Use Forestry in Scandinavia practice and perspectives.
- Blöndal, Sigurdur (1993). Socioeconomic importance of forests in Iceland. In Alden, J. (ed.), *Forest Development in Cold Climates* (1-13). New York: Plenum Press.
- Blöndal, Sigurdur, Benedikz, Thorarinn and Ottosson, Jon Gunnar (1986). *Forestry in Iceland: a brief description of its history and present status, Forestry report 8*. Reykjavik: Iceland Forestry Service.
- Blöndal, Sigurdur and Gunnarson Skuli Björn (1999). *Islandsskogar: hundred ara saga*. Reykjavik: Mal og mynd and Iceland Forest Service.
- Borrie, William T. and Birzell, Robert M. (2001). Approaches to measuring quality of the wilderness experience. In Freimund, Wayne A. and Cole, David N. (comps.) *Visitor Use Density and Wilderness Experience, Missoula, Montana June 1-3 2000*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).
- Borrie, William T. and Roggenbuck, Joseph W. (1995). Community based research for an urban recreation application of benefits-based management. In Chavez, Deborah J. (tech. coord.) *Proceedings of the Second Symposium on Social Aspects and Recreation Research, San Diego, California, 23-25 February 1994*. Albany, California: U.S. Department of Agriculture Forest Service (Pacific Southwest Research Station).

Borrie, William T. and Roggenbuck, Joseph W. (1996). Providing an authentic wilderness experience? Thinking beyond the Wilderness Act of 1964. In *Coalition for Education in the Outdoors Third Research Symposium Proceedings, Bradford Woods, Indiana, 12-14 January 1996*. Missoula, Montana: The Aldo Leopold Wilderness Research Institute.

Bowker, J.M., Murphy, G., Cordell, H.K., English S.B.K., Bergstrom, J.C., Starbuck, C.M., Betz, S.J. and Green G.T. (2006). Wilderness and primitive area recreation participation and consumption: an examination of demographic and spatial factors. *Journal of Agricultural and Applied Economics* 38(2), 317-326.

Bright, Alan D., Cordell, Ken H. Hoover, Anne P. and Tarrant, Michael A. (2003). *A human dimensions framework: Guidelines for conduction social assessments*. Asheville: U.S. Department of Agriculture Forest Service (Southern Research Station).

Brunson, Mark W. (1998). Beyond wilderness: Broadening the applicability of acceptable change. In McCool, Stephen F. and Cole, David N., (comps.) *Proceedings-Limits of Acceptable Change and related planning processes: progress and future directions*. Missoula, Montana, 20-22 May 1997. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Carr, Ethan (2000). Taking stock: Changing ideas and visions for parks. *George Wright Forum*, 17 (2), 16-30.

Chavez, Deborah J. (2001). *Managing outdoor recreation in California: visitor contact studies*. Albany, CA: U.S. Department of Agriculture Forest Service (Pacific Southwest Research Station).

Clark, Roger N. and Stankey George H. (1979). *The recreation opportunity spectrum: A framework for planning, management and research*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Pacific Northwest Forest and Range Experiment Station).

Clark, Roger N., Koch, Russell W., Hogans, Mack L., Christensen, Harriet H. and Hendee, John C. (1984). *The value of roaded, multiple-use areas as recreation sites in three national forests of the Pacific Northwest*. Portland: U.S. Dept. of Agriculture, Forest Service.

Clawson, Marion (1985). Outdoor recreation: Twenty-five years of history, twenty-five years of projection. *Leisure Sciences*, 7(1), 73-100.

Cole, David N. (1985). Management of ecological impacts in wilderness areas in the United States. In Bayfeild, N.G. and Barrow, G. C., (eds.). *The Ecological Impacts of Outdoor Recreation on Mountain Areas in Europe and North America*. R.E.R.G. Report No. 9. Wye, England: Recreation Ecology Research Group.

Cole, David N. and McCool, Stephen F. (1998). The limits of acceptable change process: Modifications and clarifications. In McCool, Stephen F. and Cole, David N., (comps.) *Proceedings-Limits of Acceptable Change and Related Planning Processes: Progress and Future Directions. Missoula, Montana, 20-22 May 1997.* Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Cordell, Harold K. (1976). The literature of planning and managing intensively developed natural resource recreation sites. In *Proceedings of the Southern States Recreation Research Applications Workshop, Asheville, North Carolina, 15-18 Sept. 1975.* Asheville, North Carolina: U.S. Department of Agriculture Forest Service (Southeastern Forest Experiment Station).

Curl, Sherry and Johannesdottir, Hrefna (2005). *Viðhorf Íslendinga til skogaektar. Skogaektar Ritið 2005(1), 19-27.*

Daigle, John J., Watson, Alan E. and Haas, Glenn E. (1994). *National forest trail users: Planning for recreation opportunities.* Portland Oregon: U.S. Department of Agriculture Forest Service (Pacific Northwest Research Station).

Driver, R. L. (1976). Toward a better understanding of the social benefits of outdoor recreation participation. In *Proceedings of the Southern States Recreation Research Applications Workshop, Asheville, North Carolina, 15-18 Sept. 1975.* Asheville, North Carolina: U.S. Department of Agriculture Forest Service (Southeastern Forest Experiment Station).

Driver, B. L. and Brown, Perry J. (1978). The opportunity spectrum concept and behavior information in outdoor recreation resource supply inventory: A rationale. In Lund, Gyde H., LaBau, Vernon J., Folliott, Peter F. and Robinson, David W. (technical coordinators). *Integrated Inventories of Renewable Natural Resources: Proceeding of the Workshop.* Fort Collins, Colorado: U.S. Department of Agriculture Forest Service (Rocky Mount Range Experiment Station).

Dwyer, John F., Barro, Susan C. (2001). Outdoor recreation behaviors and preferences of urban racial/ethnic groups: an example from the Chicago area. In Gerard, Kyle (ed.) *Proceedings of the 2000 Northeastern Recreation Research Symposium, Bolton Landing, NY, 2-4 April 2000.* Newton Square, Pennsylvania: U.S. Department of Agriculture Forest Service (Northeastern Research Station).

Ennew, Christine T., Geoffrey, Reed V. and Binks, Martin R., (1992). Importance-performance analysis and the measurement of service quality. *European Journal of Marketing, 27(2), 59-70.*

Ewert, Alan W. (1998). A comparison of urban-proximate and urban-distant wilderness users on selected variables. *Environmental Management 22(6), 927-925.*

Eysteinnsson, Throstur (2004). Forestry in a treeless land. *Lustgarden 2004(84), 27-34.*

Eysteinnsson, Throstur and Curl, Sherry (2007). Strange ideas: subjectivity and reality in attitudes towards afforestation in Iceland. In Halldorsson, Gudmundur, Oddsdottir, Edda Sigurdis and Eggertsson Olafur (eds.) *Effects of Afforestation on Ecosystems, Landscape and Rural Development. Proceedings of the AFFORNORD conference, Reykholt, Iceland, 18-22 June 2005*. Copenhagen: Nordic Council of Ministers.

Farnum, Jennifer, Hall, Troy and Kruger, Linda E. (2005). *Sense of Place in natural resource recreation and tourism: an evaluation and assessment of research findings*. Portland: U.S. Dept. of Agricultural Forest Service.

Ferdamalastofa (n.d.a). *Utgefið efni*. Retrieved 14 Sept. 2007 from http://www.Ferdamalastofa.is/ResearchLoader.asp?cat_id=564

Ferdamalastofa (n.d.b). *Campgrounds*. Retrieved 16 Sept. 2007 from http://www.visiticeland.com/displayer.asp?cat_id=747

Ferdamalastofa (n.d.c). *Styrkir*. Retrieved 18 Sept. 2007 from http://ferdamalastofa.is/displayer.asp?cat_id=223

Fridriksdottir, Herdis (2006). Vidhorfskonnun meðal notenda Heidmerkur 2005-2006. Reykjavík: Skograektarfélag Reykjavíkur.

Frissell, S.S. and Stankey, G.H. (1972). Wilderness environmental quality: the search for social and ecological harmony. In *Proceedings, Society of American Foresters Annual Conference*. Washington, DC. Society of American Foresters.

Graefe, A. R., Kuss, F.R. and Vaske, J. J. (1990). *Visitor impact management: A planning framework*. Washington DC: National Parks and Conservation Association.

Green, Gary T., Bowker, J.M., Johnson, Cassandra Y., Cordell, H. Ken and Wang, Xiongfei (2007). An examination of constraints to wilderness visitation. *International Journal of Wilderness*, 13(2), 26-36.

Gregoire, Timothy and G. and Buhyoff, Gregory (1999). *Sampling and Estimating Recreational Use*. Portland Oregon: U.S. Department of Agriculture Forest Service (Northwest Research Station).

Guttormsson, Hjørleifur and Blondal, Sigurdur (2005). *Hallormsstadur í Skogum: Natura og Saga Hofudbols og Thjodskogar*. Reykjavík: Mal og Menning.

Hagstofa Islands (2006). *Skrásett ökutæki í árslok 1986-2005*. Retrieved 3 Oct. 2003 from <http://www.hagstofa.is/?PageID=687&src=/temp/Dialog/varval.asp?ma=SAM03104%26ti=Skr%26sett+%26F6kut%26E6ki+%26ED+%26E1rslok+1986%2D2005++%26path=../Database/ferdamal/Okutaeki/%26lang=3%26units=fjöldi>

Hagstofa Islands (n.a.). *Mannfjöldi eftir kyni og aldri 1840-2006*. Retrieved 3 Oct. 2007 from [Http://www.hagstofa.is/?PageID=622&src=/temp/Dialog/varval.asp?ma=MAN00101%26ti=Mannfj%26ldi+eftir+kyni+og+aldri+1840%2D2006+%26path=../Database/mannfjoldi/Yfirlit/%26lang=3%26units=Fjöldi](http://www.hagstofa.is/?PageID=622&src=/temp/Dialog/varval.asp?ma=MAN00101%26ti=Mannfj%26ldi+eftir+kyni+og+aldri+1840%2D2006+%26path=../Database/mannfjoldi/Yfirlit/%26lang=3%26units=Fjöldi)

Hagvangur hf (1997). *Stefnumorkun islenskrar ferðathjonustur: Markaðsaasetlun*. Reykjavík: Samgonguraduneytid.

Hammit, William E. (2004). A restorative definition for outdoor recreation. In Bricker, Kelly, (comp.ed.) *Proceedings of the 2004 Northeastern Recreation Research Symposium*. Newtown Square, Pennsylvania: U.S. Department of Agriculture Forest Service (Northeastern Research Station).

Hammit, William E. and Cole, David (1998). *Wildlands Recreation: Ecology and Management* [2nd ed.]. New York: John Wiley and Sons Inc.

Hendee, John, C., Harris, Robert W. (1970). Foresters' perception of wilderness-user attitudes and preferences. *Journal of Forestry*, 67(12), 759-762.

Hendee, John C., and Dawson, Chad P. (2002). *Wilderness Management: Stewardship and Protection of Resources and Values*. [3rd ed.]. Golden, Colorado: Fulcrum Publishing.

Herzog, Thomas, R., Black, Andrea M., Fountaine, Kemberlee A. and Knotts, Deborah J. (1997). Reflectional and attentional recovery as distinctive benefits of restorative environments. *Journal of Environmental Psychology*, 17, 165-177.

Herzog, Thomas R., Magurie, Colleen P. and Nebel, Mary B. (2003). Assessing the restorative components of environments. *Journal of Environmental Psychology*, 23(2), 159-170.

Hof, Marilyn and Lime, David W. (1998). The experience and resource protection framework in the national park system: Rationale, current status, and future direction. In McCool, Stephen F. and Cole, David N., (comps.) *Proceedings-Limits of Acceptable Change and Related Planning Processes: Progress and Future Directions*. Missoula, Montana, 20-22 May 1997. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Hollenhorst, Steven, Frank, Ernest and Watson, Allan (1994). The capacity to be alone: Wilderness solitude and growth of the self. In Hendee, John C. and Vance G. (eds.). *International Wilderness Allocation, Management and Research*. Golden, Colorado: International Wilderness Leadership Foundation (WILD).

Hollenhorst, Steven J. and Jones, Christopher D. (2001). Wilderness Solitude: beyond the social-spatial perspective. In Freimund, Wayne A. and Cole, David (eds.) *Visitor Use Density and Wilderness Experience: Proceedings, Missoula Montana, 1-3 June 2000*. Ogden: U. S. Dept. of Agriculture Forest Service

Hollenhorst, Steven and Stull-Garner, Lisa (1992). The indicator performance estimate (IPE) approach to defining acceptable conditions in wilderness [summary]. *Symposium on Social Aspects and Recreation Research*. Ontario California: U.S. Department of Agriculture Forest Service.

Hornsten, L., Fredman, P. (2000). On the distance to recreational forests in Sweden. *Landscape and Urban Planning* 52(1), 1-10.

Hull, R. Bruce, Richert, David, Seekamp, Erin, Robertson, David and Buhyoff, Gregory J. (2003). Understanding of environmental quality: Ambiguities and values held by environmental professionals. *Environmental Management* 31(1), 1-13.

Icelandic Forestry Association (n.d.). *Adildarfelog*. Retrived on 18 Sept. 2007 from <http://www.skog.is/felog/default.asp>

Icelandic Tourist Board (n.d.). *Tourism in Iceland in Figures* [leaflet]. Reykjavik: Icelandic Tourist Board.

IMG Gallup (2003). *Ferdavenjur Innanlands arid 2003*. Reykjavik: IMG Gallup.

IMG Gallup (2004). *Skograektarkonnun 2004: Vidhorfskonnun, agust-september 2004*. Reykjavik: IBM Gallup.

IMG Gallup (2005). *Umhverissvid Reykjavikurborgar: Vidhorfsrannsókn*. Reykjavik: IBM Gallup.

Indridason, Hallgrimur and Sigfusson, Svanur (2000). Kjarnaskogur. In Gudleifsson, Bjarni E. (ed.), *Asynd Eyjafjardar: Skogar ad fornu og nyju* (pp. 129-143). Akureyri: Skograekatrfeag Eyfirdinga.

Isleifsson, Runar, Eysteinnsson, Throstur, Skulason, Sigurdur, Gudmundsdottir, Margret and Indridason, Hallgrimur (2006). *Umherdu- og Nytingaraaetlun fyrir Vaglaskog 2006-2015*. Akreyri: Unpublished management plan, Icelandic Forest Service.

Jensen, Frank Sondergaard (1993). Landscape managers' and politicians' perception of the forest and landscape preferences of the population. *Forest & Landscape Research* 1(1), 79-93.

Kaplan, Stephan (1995). The restorative benefits of nature: Towards an integrative framework. *Journal of Environmental Psychology*, 15, 169-182.

Kim, Sang-Oh and Shelby, Bo (2006). Comparing onsite and offsite methods for measuring norms for trail impacts. *Environmental Management*, 37(4), 567-578.

Kristensen, Bo Holm (2005). *A run-through of Hallormsstadaskogur between the 14th and 15th and 19th and 18th and 19th of April 2005, with the eyes of an everyday public user*. Unpublished report. Egilsstadir: Skograekt ríkisins.

Kuss, Fred R. (1986). Impact ecology knowledge is basic. In Lucas, Robert C. (comp.) *Proceedings-National Wilderness Research Conference: Current Research. Fort Collins, Colorado, 23-26 July 1985*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Intermountain Research Station).

Lambert, Robert A. (2005). *Trees and people: tracing the early provision of forest and woodland recreation in twentieth century Britain*. Nottingham, Notts: Christel DeHaan Tourism and Travel Research Institute.

LaPage, Wilbur F. (1963). Some sociological aspects of forest recreation. *Journal of Forestry*, 61(1), 32-35.

Laven, Daniel, Manning, Robert, Valliere, William, Lawson, Steven, Newman, Steven, Budruk, Megha, Bacon, James and Wang, Benjamin (2003). The relationship between evaluative standards of quality and existing conditions in parks and protected areas. In Murdy, James (ed.) *Proceedings of the 2003 Northeastern Recreation Research Symposium*. Newton Square: U.S. Department of Agriculture Forest Service.

Lime, D. and Stankey, G. (1971). Carrying capacity: maintaining outdoor recreation quality. In *Recreation symposium proceedings*. Missoula, Montana: U.S. Dept. of Agriculture Forest Service.

Littlejohn, Margaret (2003). *Haleakala National Park Visitor Study*. Makawao: U.S. Department of Interior National Park Service.

Lucas, Robert C. (1987). Perspectives on the history of wilderness research. In Lucas, Robert (comp.) *Proceedings-National Wilderness Research Conference: Issues, State-of-Knowledge and Future Directions. Fort Collins, Colorado, 23-26 July 1985*. Ogden, Utah: U.S. Department of Agriculture, Forest Service (Intermountain Research Station).

Manfredo, Michael J., Driver, B. L. and Tarrant, Michael A. (1996). Measuring leisure motivation: a meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3), 188-213.

Manning, Robert E. and Lime, David W. (2000). Defining and managing the quality of wilderness recreation experiences. In Cole, David N., Borrie, William T. and O'Loughlin, Jennifer (eds.) *Wilderness Science in a Time of Change Conference Vol. 4, Wilderness Visitors, Experiences and Visitor Management, Missoula, Montana, 23-27 May 1999*. U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Manning, Robert E., Lime, David W., Hof, Marilyn and Freimund, Wayne A. (1995). The visitor experience and resource protection (VERP) process: The application of carrying capacity to Arches National Park. *The George Wright Forum* 12(3), 41-55.

Marshall, Robert (1930/1968). Wilderness. In Nash, Roderick (ed.), *The American Environment: Readings in the History of Conservation* [2nd ed.] (pp. 121-126). New York: Alfred A. Knopf.

Martilla, John A. and James, John C. (1977). Importance-performance analysis. *Journal of Marketing*, 41, 77-79.

Martin, Suzanne (2005). Leisure landscapes: Understanding the role of forests and woodlands in the tourism sector. *Forest Research Annual Report and Accounts, 2003-2004*, (pp.54-65). Norwich: The Stationary Office.

McCool, Stephen F., Clark, Roger N. and Stankey, George H. (2007). *An Assessment of Frameworks Useful for Public Land Recreation Planning*. Portland Oregon: U.S. Department of Agriculture Forest Service (Pacific Northwest Research Station).

Mitchell-Banks, P., Niskanen, A., Curl, S., Chobanova, R. and Carbone, R. (2006). The impacts of government legislation and policy or projects on private forestry. In Niskanen, Anssi (ed.), *Issues Affecting Enterprise Development in the Forest Sector in Europe* (pp. 105-136). Joensuu: Faculty of Forestry University of Joensuu.

Moore, Thomas A., Bulmer, Susan, Henzel, Linda and Mates, Ann E. (2003). *Extending the recreation opportunity spectrum to nonfederal lands in the northeast: An implementation guide*. Newtown Square, Pennsylvania: U.S. Department of Agriculture Forest Service (Northeastern Research Station).

Nash, Roderick (1976). *The American environment: readings in the history of conservation*. New York: Alfred A. Knopf.

Natural Resources Canada (1996). *Measuring forest sustainability: the Canadian approach*. Retrieved on 21 Sept. 2007 from <http://forestscanada.rncan.gc.ca/articletopic/111?format=print>

Nickerson, Ron, Anderson, Dorothy H., Davenport, Mae A., Leahy, Jessica E. and Stein, Taylor V. (2005). *A Manager's Guide to Gathering and Using Visitor and Community Benefits Data to Manage Outdoor Recreation Areas*. St. Paul: University of Minnesota, Department of Forest Resources.

Nilsen, Per and Tayler, Grant (1998). A comparative analysis of protected area planning and management frameworks. In McCool, Stephen F. and Cole, David N., (comps.) *Proceedings-Limits of Acceptable Change and Related Planning Processes: Progress and Future Directions. Missoula, Montana, 20-22 May 1997*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Noe, Francis P. and Uysal, Muzaffer (1997). Evaluation of outdoor recreational settings: A problem of measuring user satisfaction. *Journal of Retailing and Consumer Services*, 4(4), 223-230.

Nyaupane, Gyan P., Graefe, Alan and Burns, Robert C. (2003). Does distance matter: Differences in characteristics, behaviors and attitudes of visitors based on travel distance. In Murdy, James (ed.) *Proceedings of the 2003 Northeastern Recreation Research Symposium*. Newton Square: U.S. Department of Agriculture Forest Service.

Odum, Eugene P. (1959). *Fundamentals of Biology*. Philadelphia, Pennsylvania: W. B. Saunders.

Olmsted, Frederick Law (1865/1968). The value and care of parks. In Nash, Roderick (ed.), *The American Environment: Readings in the History of Conservation* [2nd ed.] (p. 18-24). New York: Alfred A. Knopf.

Petursson, Jon Geir (1998). Skógrækarstarfid 1997: Tölulegar upplýsingar. *Skograektar Ritid*, 1997(2), 161-163.

Petursson, Jon Geir (1999). Skógrækarstarfid 1998: Tölulegar upplýsingar. *Skograektar Ritid*, 1998(2), 149-151.

Pierskalla, Chad D., Lee, Martha E., Stein, Taylor V., Anderson, Dorothy H. and Nickerson, Ron (2004). Understanding relationships among recreation opportunities: A meta-analysis of nine studies. *Leisure Sciences*, 26, 163-180.

Pigram, John J. and Jenkins, John M. (1999). *Outdoor Recreation Management*. London: Routeledge.

Rametsteiner, Ewald and Kraxner, Florian (2003). *Europeans and their forests: what do Europeans think about forests and sustainable forest management?* Vienna: Ministerial Conference on the Protection of Forests in Europe, FAO/UNECE Forest Communicators Network, United Nations Economic Commission for Europe.

Roggenbuck, Joseph W. and Driver, B.L. (2000). Benefits of nonfacilitated uses of wilderness. In McCool, Stephen, F., Cole, David N., Borrie, William T. and O'Loughlin, Jennifer (eds.) *Wilderness science in a time of change conference, Missoula, Montana: 23-27 May 1999*. Ogden, Utah: U.S. Dept. of Agriculture Forest Service.

Seabrooke, W. and Miles, C. W. N. (1993). *Recreational Land Management*. [2nd ed.] London: E. & F. N. Spon.

Scottish Forest Alliance (2002). *Factsheet: Carbon forestry questions*. Retrived 26 Sept. 2007 from http://www.scottishforestalliance.org.uk/UserFiles/File/fs_forrestry_carbon_questions.pdf

Shafer, Elwood L. Jr. (1969). *The Average Camper Who Doesn't Exist*. Upper Darby, Pennsylvania: U.S. Department of Agriculture Forest Service (Northeast Experiment Station).

Shafer, Elwood L. Jr. and Hamilton, John F. Jr. (1967). *A Comparison of Four Survey Techniques Used in Outdoor Recreation Research*. Upper Darby: U.S. Department of Agriculture Forest Service (Northeastern Forest Experiment Station).

Shelby, B. and Heberlein, T. (1986). *Carry Capacity in Recreation Settings*. Corvallis, Oregon: Oregon State University Press.

Skograektafelag Reykjavíkur (n.d.). *Gróður í Heiðmörk*. Retrieved 7 June 2008 from <http://www.heidmork.is/stylesheet.asp?file=22112006132224>

Skov-Petersen, Hans and Jensen, Frank Sondergaard (2004). *Assessing Recreation in the Danish Nature: Present Experience Towards a Future Monitoring System*. Copenhagen: Center for Forest, Landscape and Planning.

Smaldone, David (2007). The role of time in place attachment. In Burns, R., Robinson, K. (eds.) *Proceeding of the 2006 Northeastern Recreation Research Symposium, Bolton Landing, NY, 9-11 April 2006*. Newton Square PA: U.S. Dept. of Agriculture Forest Service.

Stankey, George H., Cole, David N., Lucas, Robert C., Petersen, Margaret E. and Frissell, Sidney S. (1985). *The Limits of Acceptable Change (LAC) System for Wilderness Planning*. Ogden, Utah: United States Department of Agriculture Forest Service (Intermountain Forest and Range Experiment Station).

Stewart-Pollack, J. (1996). *The Need for Nature*. Retrieved 15 Oct. 2007 from ISDesignnet: <http://www.isdesignnet.com/Magazine/Sep'96/SpeedNature.html>

Stjornarrad Íslands (1999). *Lög um náttúruvernd*. Retrieved 7 June 2008 from <http://www.althingi.is/lagas/nuna/1999044.html>

Sumner, E. Lowel (1942). The biology of wilderness protection. *Sierra Club Bulletin* 27(8), 14-22.

Tarrant, Michael A., Bright, Alan D., Smith, Erin and Cordell, H. Ken (1999). In Cordell, H. Ken, Betz, Carter, Bowker, J.M. (eds.), *Outdoor recreation in American life: a national assessment of demand and supply* (403-431). Illinois: Sagamore Publishing.

Tarrant, Michael A. and Smith, Erin K. (2002). The use of a modified importance-performance framework to examine visitor satisfaction with attributes of outdoor recreation settings. *Managing Leisure* 7, 69-82.

Thoreau, Henry David (1851/1968). The transcendental view. In Nash, Roderick (ed.), *The American Environment: Readings in the History of Conservation* [2nd ed.] (p. 9-13). New York: Alfred A. Knopf.

Thorsson, Bergsveinn (n.d.). *Umferdatalning: Kjarnaskogur 2001*. Retrieved on 16 Sept. 2007 from <http://www.kjarnaskogur.is/pages/talning.html>

Vanderburg, Willem H. (2000). *The Labyrinth of Technology*. Toronto: University of Toronto Press.

Vegagerd rikisins (2006). *Slitlog*. Retrieved 18 Sept 2007 from <http://www.vegagerdin.is/vegakerfid/slitlog/>

Velmans, Mac (1991). Is human information processing conscious? *Behavioral and Brain Sciences*, 14, 651-726.

Visiticeland (n.d.). *Upplýsingabrunnur um ferdalag*. Retrieved 18 Sept. 2007 from http://www.visiticeland.com/default.asp?cat_id=1

Wagar, J.A. (1964). *The carrying capacity of wildlands for recreation*. Forest Science Monograph 7. Washington, DC: Society of American Foresters.

Wagar, J. V. K. (1951). Some major principles in recreational land use planning. *Journal of Forestry* 49(6), 431-434.

Warzecha, Cynthia A., Anderson, Dorothy H., James, E.B. and Thompson, Jerrilyn, (2001). *Visitor use at Pictured Rocks National Lakeshore: comparison of backcountry and frontcountry users*. St. Paul: University of Minnesota.

Watson, Alan E., Cole, David N., Turner, David L. and Reynolds, Penny S. (2000). *Wilderness recreation use estimation: a handbook of methods and systems*. Ogden: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

White, Dave D. and Hendee, J. C. (2000). Primal hypotheses: The relationship between naturalness, solitude and the wilderness experience benefits of development of self, development of community and spiritual development. In McCool, Stephen, F., Borrie, William T. and O'Loughlin, Jennifer (comps.) *Wilderness Science in a Time of Change Conference Wilderness as a Place for Scientific Inquiry, Missoula, Montana, May 23-27 1999*. Ogden, Utah: U.S. Department of Agriculture Forest Service (Rocky Mountain Research Station).

Wickham, Thomas D. and Zinn, Harry C. (2001). Human territoriality: an examination of a construct. In Kyle, Gerard (ed.) *Proceedings of the 2000 Northeastern Recreation Research Symposium*. Newtown Square, PA: U.S. Dept. of Agriculture Forest Service.

Wirral (2007). *The History of Birkenhead Park*. Retrieved 15 Oct. 2007 from http://www.wirral.gov.uk/LGGL/100006/200073/670/content_0001109.html

Wohlwill, Joachim F. (1974). Human adaptation to levels of environmental stimulation. *Human Ecology*, 2(2), 127-147.

Young, Jason and Persell, R. (2000). On the evolution of misunderstands about evolutionary psychology. *Annals of the New York Academy of Sciences*, 901, 21-223

Appendix A

Questionnaires

ÚTIVISTARKÖNNUN

SUMAR 2007

Name of forest

**Skógrækt ríkisins
Miðvangur 2-4
700 Egilsstaðir**



Questionnaire used in Heidmörk and Kjarni

- 1) Ég er kona_____ karl_____ og _____ ára.
- 2) Komst þú í skóginn ein(n) með sjálfri(um) þér _____ eða í hópi með öðrum_____?
- 3) Menntun
Grunnskóli_____ Framhaldsskóli_____ Háskóli_____
- 4) Ef þú varst með öðrum, hvernig er hópnum best lýst?
Par____ Par ásamt börnum____ Stærri fjölskylduhópur____ Vinir og kunningjar _____
Annað_____
- 5) Hversu margir í hópnum voru á hverju aldursbili?
0-5 ára____ 6-12 ára____ 13-20 ára____ 21-35 ára____ 36-60 ára _____ Eldri en 60
ára_____
- 6) Hversu lengi varstu að komast í Heiðmörk heiman frá þér? _____
- 7) Hafðir þú heimsótt Heiðmörk áður? Já_____ Nei_____
- 8) Ef svo er, hversu oft?
Vikulega eða oftar____ Nokkrum sinnum á ári____ Sjaldnar_____
- 9) Hversu löng er hver heimsókn þín í Heiðmörk að jafnaði _____ klst.
- 10) Af hverju valdir þú að heimsækja Heiðmörk, en ekki eitthvað annað útivistarvæði?

-
- 11) Hvað gerðir þú á meðan þú varst í skóginum?
-

- 12) Heimsóttir þú Heiðmörk: Á virkum degi (dögum) _____ Um helgi_____ Hvort
tveggja_____

Við hönnun og útfærslu á aðstöðu til útivistar er mikilvægt að vita hvað gestir skóga eins og

Heiðmerkur telja vera viðeigandi og æskilegt. Hér fyrir neðan er listi yfir allmörg atriði sem tengjast

skógum og útivist í þeim og spurt um mikilvægi hvers þeirra í þínum huga. Vinsamlega merktu

við það svar sem þér finnst best eiga við. Fyrir neðan hvert atriði er lína fyrir athugasemdir og

hvetjum við þig til að notfæra þér þær til að koma skoðunum á framfæri.

Hversu mikilvægt er:

- 13) Að hafa upplýsingaskilti á bílastæðum?
Óæskilegt_____ Ekki mikilvægt_____ Nokkuð mikilvægt_____ Mjög mikilvægt_____ Bráðnauðsynlegt_____
Hef ekki skoðun_____
-

- 14) Að til staðar séu vegvísar/stikur á gönguleiðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 15) Að boðið sé uppá grillaðstöðu?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 16) Aðgengi að hreinu vatni?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 17) Að hafa ruslafötur á fjölförnum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 18) Að hafa klósett á fjölförnum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 19) Að leiktæki séu til staðar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 20) Að boðið sé uppá skipulagðar gönguferðir með leiðsögn?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 21) Að góðir akvegir liggja að skóginum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 22) Að boðið sé uppá erfiðar gönguleiðir sem reyna talsvert á líkamann?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

- 23) Að boðið sé uppá gönguleiðir þar sem skiptast á erfiðir og auðveldir kaflar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 24) Að boðið sé uppá greiðfærar og auðveldar gönguleiðir?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 25) Að boðið sé uppá stíga með þrekkækjum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 26) Að hafa fræðandi merkingar meðfram göngustígum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 27) Að hafa upplýsingar um erfiði, vegalengd og göngutíma við upphaf gönguleiðar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 28) Að hafa bekkir við stíga á áhugaverðum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 29) Að hafa bekkir við stíga eftir erfiða kafla?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 30) Að boðið sé uppá svæði fyrir lautarferðir (picnic) fyrir litla hópa (færri en 10)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

- 31) Að boðið sé uppá svæði fyrir lautarferðir (picnic) fyrir stærri hópa (fleiri en 10)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 32) Að veitingastaður sé í nágrenni skógarins?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 33) Að starfsfólk í skóginum sé til staðar og auðkennt á áberandi hátt?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 34) Að gestastofa sé í skóginum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 35) Að matvöruverslun sé í nágrenni skógarins?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 36) Að skógurinn sé laus við rusl svo sem pappír og plast?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 37) Að ekki séu skemmdir á trjám og öðrum gróðri (ekki er átt við háttúrlegan trjádauða) ?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 38) Að aðstaða svo sem borð, bekkir og grillsvæði sé í góðu standi?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

39) Að trén séu hærri en 3 metrar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

40) Að skógurinn sé meira en 10 hektarar (20 fótoltavellir) að flatarmáli?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

Nokkrar sértækar spurningar um Heiðmörk:

41) Sumstaðar fylgja gönguleiðir bílfærum skógarvegum. Dregur það úr ánægju þinni af að ganga eftir leiðinni?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

42) Myndu afleiðingar grisjunar eða skógarhöggis, svo sem felld tré og greinar, draga úr ánægju þinni af dvöl í skógi?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

43) Myndu lækir og tjarnir auka ánægju þína af dvöl í skógi?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

44) Mundi það draga úr ánægju þinni af skógargöngu að mæta fólki á reiðhjólum á stígnum?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

45) Mundi það draga úr ánægju þinni af skógargöngu að mæta fólki á hestbaki á stígnum?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

46) Mundi það draga úr ánægju þinni af skógargöngu að sjá ummerki eftir hestaferðir (t.d. hófför og hrossaskít)?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____

- 47) Myndu þættir á borð við fjölfarna bílvegi, umferðarklið, hávaði úr flugvélum eða raflínur draga úr
ánægju þinni af dvöl í skógi?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 48) Hversu lengi værir þú tilbúin(n) að aka til að njóta dvalar í skógi á borð við Heiðmörk?
Klst.____ Mínútur____
- 49) Hversu mörgum öðrum en þeim sem eru með þér finnst þér æskilegt að mæta á göngu í skóginum?
Engum (0)___ Fáum (1-20)___ Nokkrum (20-50)___ Mörgum (> 50)___ Skiptir ekki máli___
- 50) Í hverskonar skógi finnst þér best að ganga/dvelja í Heiðmörk?
Birkiskógi___ Blandskógi___ Barrskógi___ Hef ekki skoðun ___
- 51) Finnst þér þessi gerð skógar allsstaðar æskilegust eða er það breytilegt frá einum stað til annars?
Skiptir ekki máli___ Allsstaðar æskilegust___ Breytilegt___
Hef ekki skoðun ___
-
- 52) Ef æskileg gerð skógar er breytileg frá einum stað til annars, hvað ræður ákvörðuninni?
-
- 53) Er mikilvægt að umhirða Heiðmörkar miðist við það að viðhalda skóginum í eins náttúrlegu ástandi og mögulegt er?
Það er nauðsynlegt___ Það er æskilegt___ Það er í lagi___ Eiginlega ekki___
Alls ekki___ Hef ekki skoðun___
-
- 54) Mundi það draga úr ánægju þinni af skógargöngu að mæta lausum hundum á stígnum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 55) Mundi það draga úr ánægju þinni af skógargöngu að mæta hundum í taumi á stígum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
- 56) Mundi það draga úr ánægju þinni af skógargöngu á vetri að mæta gönguskíðamanni á stígnum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 57) Gerðir þú sérstaka ferð í Heiðmörk til að tína (merkja við allt sem á við):
Ber___ Köngla___ Sveppi ___ Jurtir___ Annað___

- 58) Á að leggja gönguskiðabrautir í skóginum að vetri?
Það er nauðsynlegt____ Það er æskilegt____ Það er í lagi____ Eiginlega ekki____
Alls ekki____ Hef ekki skoðun____
-

*Til að geta bætt þjónustu og aðstöðu í **Heiðmörk** þurfum við að vita hvað fólki finnst um þá þjónustu og aðstöðu sem fyrir er. Vinsamlega merktu við þau svör hér að neðan sem best lýsa ástandinu í Heiðmörk.
Sem fyrr er pláss fyrir athugasemdir á línunum fyrir neðan hverja spurningu og hvetjum við þig til að notfæra þér það.*

Hvernig var eftirfarandi aðstaða í Heiðmörk:

- 59) Upplýsingaskilti á bílastæðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 60) Vegvísar/stikur á gönguleiðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 61) Önnur upplýsingaskilti við gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 62) Svæði fyrir lautarferðir (picnic) fyrir minni hópa?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

- 63) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 64) Svæði fyrir lautarferðir (picnic) fyrir stærri hópa?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

- 65) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 66) Grillaðstaða?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 67) Var hún nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 68) Aðgengi að hreinu vatni?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 69) Ruslafötur?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 70) Voru þær nægilega snyrtilegar?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 71) Klósett?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 72) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 73) Leiktæki?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 74) Akvegir að skóginum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 75) Bílastæði?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 76) Erfiðar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 77) Miðlungs- eða miserfiðar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

78) Greiðfærar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

79) Viðhald gönguleiða?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

80) Upplýsingar um erfiði, vegalengd og göngutíma við upphaf gönguleiðar?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

81) Bekkir við stíga á áhugaverðum stöðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

82) Bekkir við stíga eftir erfiða kafla?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

83) Starfsfólk í skóginum til staðar og auðkennt á áberandi hátt?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

84) Rusl svo sem pappír og plast á víð og dreif?
Ekkert____ Svolítið____ Míkið____ Mjög mikið____ Veit ekki____

85) Skemmdir á trjám og öðrum gróðri (ekki átt við náttúrlegan trjádauda)
Ekkert____ Svolítið____ Míkið____ Mjög mikið____ Veit ekki____

86) Skemmdir á aðstöðu og búnaði svo sem borðum, bekkjum og merkingum?
Ekkert____ Svolítið____ Míkið____ Mjög mikið____ Veit ekki____

87) Hversu mörgu fólki mættir þú í skóginum?
Engum (0)____ Fáum (1-20)____ Nokkrum (20-50)____ Mörgum (> 50)____
Fannst þér að þessi fjöldi væri
Of mikill____ Hæfilegur____ Of
lítill____

88) Eru trén í Heiðmörki nógu hávaxin?
Já____ Nei____ Hef ekki
skoðun____

89) Ef þú áttir óþægileg samskipti við annað fólk í skóginum, í hverju voru þau fólgin?

- 90) Hvernig er Heiðmörk best lýst?
Birkiskógur____ Blandskógur____ Barrskógur____ Hef ekki skoðun ____

**Hvaða ábata hafðir þú af dvöl þinni í Heiðmörk? (krossa má við fleiri en eitt atriði)
Vinsamlega settu tvo krossa við það atriði sem mestu máli skipti.**

- 2-1) Aukin frelsistilfinning____
2-2) Aukin gleði____
2-3) Minnkun á þunglyndi eða kvíða____
2-4) Minnkun á streitu____
2-5) Lærði eitthvað um náttúruna____
2-6) Lærði eitthvað um Heiðmörk____
2-7) Þróaði sköpunarhæfileika mína____
2-8) Tengdist vinum nánar____
2-9) Tengdist fjölskyldunni betur____
2-10) Öðlaðist meira sjálfstæði____
2-11) Naut þess að vera með fólki sem hefur svipað gildismat og ég____
2-12) Styrktist andlega____
2-13) Öðlaðist innri ró____
2-14) Upplifði samsömun við náttúruna____
2-15) Öðlaðist aukinn skilning á náttúrunni____
2-16) Bætti almennt líkamlegt ástand____
2-17) Bætti þrek og þol____
2-18) Jók hæfileika og getu á einhverju sviði____
2-19) Ögraði sjálfum(ri) mér____
Annar ábati____
2-20) Hver?_____

- 91) Munt þú heimsækja Heiðmörk aftur?
Já____ Nei____

- 92) Hversu náttúrleg er Heiðmörk að þínu mati?
Ósnortin____ Mjög náttúrleg____ Fremur náttúrleg____ Mannleg áhrif nokkuð áberandi____
Mannleg áhrif mjög áberandi____ Hef ekki skoðun____

- 93) Hvernig metur þú reynsluna af dvöl þinni í Heiðmörk á heildina litið?
Mjög ánægjuleg____ Góð____ Sæmileg____ Fremur leiðinleg____ Afleit____
Hef ekki skoðun____

- 94) Eitthvað annað varðandi útivist í skógum, heimsókn þína í Heiðmörk eða um þessa könnun sem þú vilt koma á framfæri?

**Kærar þakkir fyrir að gefa þér tíma til að svara þessari könnun.
Svörin munu koma að gagni við að bæta aðstöðu til útivistar í skógunum.**

Questionnaire used in Hallormsstadur and Vagfir National Forests

- 1) Ég er kona_____ karl_____ og _____ ára.
- 2) Menntun:
Grunnskóli_____ Framhaldsskóli_____ Háskóli_____
- 3) Komst þú í skóginn ein(n) með sjálfri(um) þér _____ eða í hópi með öðrum_____?
- 4) Ef þú varst með öðrum, hvernig er hópnum best lýst?
Par_____ Par ásamt börnum_____ Stærri fjölskylduhópur_____ Vinir og kunningjar _____ Annað_____
- 5) Hversu margir í hópnum voru á hverju aldursbili?
0-5 ára_____ 6-12 ára_____ 13-20 ára_____ 21-35 ára_____ 36-60 ára _____ Eldri en 60 ára_____
- 6) Var Hallormsstaðaskógur aðal ákvörðunarstaður ferðarinnar?
Já_____ Nei_____
- 7) Hversu lengi varstu að komast í Hallormsstaðaskóg heiman frá þér? _____
- 8) Gistir þú á öðrum tjaldsvæðum en á Hallormsstað í ferðalaginu? Já_____ Nei_____
Ef já hvar? _____
- 9) Hafðir þú heimsótt Hallormsstaðaskóg áður?
Já_____ Nei_____
- 10) Ef svo er, hversu oft? 1-5 sinnum_____ 6-10 sinnum_____ Oftar en 10 sinnum_____
- 11) Hversu löng var heimsókn þín í Hallormsstaðaskóg? _____ klst. _____ daga
- 12) Af hverju valdir þú að heimsækja Hallormsstaðaskóg, en ekki eitthvað annað útvistarsvæði?

- 13) Hvað gerðir þú á meðan þú varst í skóginum? _____

- 14) Heimsóttir þú Hallormsstaðaskóg: Á virkum degi (dögum) _____ Um helgi_____ Hvort tveggja_____ ?
- 15) Ef um útilegu var að ræða, varst þú í:
Tjaldi_____ Tjaldvagni/fellihýsi_____ Hjólhýsi/húsbíl_____
Skála_____?
- 16) Á meðan þú dvaldir á Hallormsstað, fórst þú í einhverjar skoðunarferðir, svo sem niður á firði, til Kárahnjúka eða eitthvað slíkt?
Já_____ Nei_____
- 17) Ef já, hvert fórstu? _____

Við hönnun og útfærslu á aðstöðu til útivistar er mikilvægt að vita hvað gestir skóga eins og **Hallormsstaðaskógar** telja vera viðeigandi og æskilegt. Hér fyrir neðan er listi yfir allmörg atriði sem tengjast skógum og útivist í þeim og spurt um mikilvægi hvers þeirra í þínum huga. Vinsamlega merktu við það svar sem þér finnst best eiga við. Fyrir neðan hvert atriði er lína fyrir athugasemdir og hvetjum við þig til að notfæra þér þær til að koma skoðunum á framfæri.

Hversu mikilvægt er:

- 18) Að hafa upplýsingaskilti á bílastæðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 19) Að til staðar séu vegvísar/stikur á gönguleiðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 20) Að boðið sé uppá grillaðstöðu?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 21) Aðgengi að hreinu vatni?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 22) Að það sé leyft að tjalda í Hallormsstaðaskógi yfirleitt?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 23) Að hafa ruslafötur á fjölförnum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 24) Að hafa klósett á fjölförnum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

25) Að bjóða uppá sturtur á tjaldsvæðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

26) Að leiktæki séu til staðar á tjaldsvæðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

27) Að boðið sé uppá skipulagðar gönguferðir með leiðsögn?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

28) Að góðir akvegir liggja að skóginum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

29) Að boðið sé uppá erfiðar gönguleiðir sem reyna talsvert á líkamann?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

30) Að boðið sé uppá gönguleiðir þar sem skiptast á erfiðir og auðveldir kaflar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

31) Að boðið sé uppá greiðfærar og auðveldar gönguleiðir?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

32) Að boðið sé uppá stíga með þrekkækjum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

33) Að hafa fræðandi merkingar meðfram göngustígum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____

- 34) Að hafa upplýsingar um erfiði, vegalengd og göngutíma við upphaf gönguleiðar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 35) Að hafa bekki við stíga á áhugaverðum stöðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 36) Að hafa bekki við stíga eftir erfiða kafla?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 37) Að boðið sé uppá svæði fyrir lautarferðir (picnic) fyrir litla hópa (færri en 10)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 38) Að boðið sé uppá svæði fyrir lautarferðir (picnic) fyrir stærri hópa (fleiri en 10)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 39) Að veitingastaður sé í nágrenni skógarins?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 40) Að rafmagnstengi séu til staðar á tjaldsvæðum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 41) Að starfsfólk í skóginum sé til staðar og auðkennt á áberandi hátt?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

- 42) Að gestastofa sé í skóginum?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 43) Að matvöruverslun sé í nágrenni skógarins?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 44) Að boðið sé uppá sér tjaldsvæði (aðeins fyrir tjöld, ekki tjaldvagna, hjólhýsi eða húsbíla)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 45) Að tjaldsvæði séu vel hönnuð?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 46) Að skógurinn sé laus við rusl svo sem pappír og plast?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 47) Að ekki séu skemmdir á trjám og öðrum gróðri (ekki er átt við náttúrlegan trjádauða)?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 48) Að aðstaða svo sem borð, bekkir og grillsvæði sé í góðu standi?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 49) Að trén séu hærrí en 3 metrar?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-
- 50) Að skógurinn sé meira en 10 hektarar (20 fótboltavellir) að flatarmáli?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

- 51) Að göguskíðabrautir séu lagðar í skóginum að vetri?
Óæskilegt____
Ekki mikilvægt____ Nokkuð mikilvægt____ Mjög mikilvægt____ Bráðnauðsynlegt____
Hef ekki skoðun____
-

Nokkrar sértækar spurningar um Hallormsstaðaskóg:

- 52) Sumstaðar fylgja gönguleiðir bílfærum skógarvegum. Dregur það úr ánægju þinni af að ganga eftir leiðinni?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-
- 53) Myndu afleiðingar grisjunar eða skógarhöggs, svo sem felld tré og greinar, draga úr ánægju þinni af dvöl í skógi?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-
- 54) Fyrir utan gönguleið að trjásafninu, nýttir þú þér aðrar gönguleiðir í skóginum? Já____ Nei____
Ef nei, afhverju ekki? Vissi ekki af þeim____ Hentaði mér/okkar ekki____
Engan áhuga____ Ekki tíma____
-
- 55) Nýttir þú þér gönguleiðabæklinginn? Já____ Nei____
Ef nei afhverju ekki? Vissi ekki af honum____ Hentar ekki hópnum sem ég var með____
Þekki skóginn svo vel að ég þurfti hann ekki____ Engan áhuga____
-
- 56) Myndu lækir og tjarnir auka ánægju þína af dvöl í skógi?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-
- 57) Mundi það draga úr ánægju þinni af skógargöngu að mæta fólki á reiðhjólum á stígnum?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-
- 58) Mundi það draga úr ánægju þinni af skógargöngu að mæta fólki á hestbaki á stígnum?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-
- 59) Mundi það draga úr ánægju þinni af skógargöngu að sjá ummerki eftir hestaferðir (t.d. hófför og hrossaskít)?
Talsvert____ Nokkuð____ Aðeins____ Eiginlega ekki____ Alls ekki____
Hef ekki skoðun____
-

- 60) Myndu þættir á borð við fjölfarna bílvegi, umferðarklið, hávaði úr flugvélum eða raflínur draga úr ánægju þinni af dvöl í skógi?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
- 61) Mundi það draga úr ánægju þinni af skógargöngu að mæta lausum hundum á stígnum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 62) Mundi það draga úr ánægju þinni af skógargöngu að mæta hundum í taumi á stígnum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 63) Mundi það draga úr ánægju þinni af skógargöngu á vetri að mæta gönguskíðamanni á stígnum?
Talsvert___ Nokkuð___ Aðeins___ Eiginlega ekki___ Alls ekki___
Hef ekki skoðun___
-
- 64) Hversu lengi værir þú tilbúin(n) að aka til að njóta dvalar í skógi á borð við Hallormsstaðaskóg?
Klst.____ Mínútur____
- 65) Finnst þér viðeigandi að hafa svefnskála í Hallormsstaðaskógi?
Það er nauðsynlegt___ Það er æskilegt___ Það er í lagi___ Eiginlega ekki___
Alls ekki___ Hef ekki skoðun___
-
- 66) Finnst þér viðeigandi að hafa sumarbústaði í einkaeigu í Hallormsstaðaskógi?
Það er nauðsynlegt___ Það er æskilegt___ Það er í lagi___ Eiginlega ekki___
Alls ekki___ Hef ekki skoðun___
-
- 67) Finnst þér viðeigandi að hafa hótél í Hallormsstaðaskógi?
Það er nauðsynlegt___ Það er æskilegt___ Það er í lagi___ Eiginlega ekki___
Alls ekki___ Hef ekki skoðun___
-
- 68) Hversu mörgum öðrum en þeim sem eru með þér finnst þér æskilegt að mæta á göngu í skóginum?
Engum (0)___ Fáum (1-20)___ Nokkrum (20-50)___ Mörgum (> 50)___ Skiptir ekki máli___
- 69) Í hverskonar skógi finnst þér best að ganga/dvelja í Hallormsstaðaskógi?
Birkiskógi___ Blandskógi___ Barrskógi___ Hef ekki skoðun ___
- 70) Finnst þér þessi gerð skógar allsstaðar æskilegust eða er það breytilegt frá einum stað til annars?
Skiptir ekki máli ___ Allsstaðar æskilegust___ Breytilegt___ Hef ekki skoðun ___
- 71) Ef æskileg gerð skógar er breytileg frá einum stað til annars, hvað ræður ákvörðuninni?

72) Finnst þér að leyfa eigi að tjalda í Hallormsstaðaskógi?
Já____ Nei____ Hef ekki skoðun____

73) Ef já, finnst þér að takmarka ætti útilegu við tiltekin svæði?
Já____ Nei____ Hef ekki skoðun____

74) Er mikilvægt að umhirða Hallormsstaðaskógar miðist að því að viðhalda skóginum í eins náttúrlegu ástandi og mögulegt er?
Það er nauðsynlegt____ Það er æskilegt____ Það er í lagi____ Eiginlega ekki____
Alls ekki____ Hef ekki skoðun____

75) Á að leyfa varðelda í Hallormsstaðaskógi?
Það er nauðsynlegt____ Það er æskilegt____ Það er í lagi____ Eiginlega ekki____
Alls ekki____ Hef ekki skoðun____

*Til að geta bætt þjónustu og aðstöðu í **Hallormsstaðaskógi** þurfum við að vita hvað fólki finnst um þá þjónustu og aðstöðu sem fyrir er. Vinsamlega merktu við þau svör hér að neðan sem best lýsa ástandinu í Hallormsstaðaskógi.*

Sem fyrir er pláss fyrir athugasemdir á línunum fyrir neðan hverja spurningu og hvetjum við þig til að notfæra þér það.

Hvernig var eftirfarandi aðstaða í Hallormsstaðaskógi:

76) Upplýsingaskilti á bílastæðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

77) Vegvísar/stikur á gönguleiðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

78) Önnur upplýsingaskilti við gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

79) Svæði fyrir lautarferðir (picnic) fyrir minni hópa?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

80) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

81) Svæði fyrir lautarferðir (picnic) fyrir stærri hópa?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____

- 82) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 83) Grillaðstaða?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 84) Var hún nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 85) Aðgengi að hreinu vatni?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 86) Ruslafötur?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 87) Voru þær nægilega snyrtilegar?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 88) Klósett?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 89) Voru þau nægilega snyrtileg?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 90) Sturtur?
Var nægur fjöldi?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
- 91) Voru þær nægilega snyrtilegar?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 92) Leiktæki?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 93) Akvegir að skóginum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 94) Bílastæði?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 95) Erfiðar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-

- 96) Miðlungs- eða miserfiðar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 97) Greiðfærar gönguleiðir?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 98) Viðhald gönguleiða?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 99) Upplýsingar um erfiði, vegalengd og göngutíma við upphaf gönguleiðar?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 100) Bekkir við stíga á áhugaverðum stöðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 101) Bekkir við stíga eftir erfiða kafla?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 102) Rafmagnstengi á tjaldsvæðum?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 103) Starfsfólk í skóginum til staðar og auðkennt á áberandi hátt?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 104) Hönnun tjaldsvæðis?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 105) Sér tjaldsvæði fyrir tjöld?
Fullkomin____ Góð____ Sæmileg____ Fremur léleg____ Afleit____ Hef ekki skoðun____
-
- 106) Rusl svo sem pappír og plast á víð og dreif?
Ekkert____ Svolítið____ Nokkuð____ Mikið____ Mjög mikið____ Veit ekki____
-
- 107) Skemmdir á trjám og öðrum gróðri (ekki átt við náttúrlegan trjádauða)
Engar____ Svolítlar____ Nokkrar____ Miklar____ Mjög miklar____ Veit ekki____
-
- 108) Skemmdir á aðstöðu og búnaði svo sem borðum, bekkjum og merkingum?
Engar____ Svolítlar____ Nokkrar____ Miklar____ Mjög miklar____ Veit ekki____
-
- 109) Hversu mörgu fólki mættir þú í skóginum?
Engum (0)____ Fáum (1-20)____ Nokkrum (20-50)____ Mörgum (> 50)____

110) Fannst þér þessi fjöldi vera
Of mikill____ Hæfilegur____ Of lítill____ Hef ekki skoðun _____

111) Eru trén í Hallormsstaðaskógi nógu hávaxin?
Já____ Nei____ Hef ekki
skoðun____

112) Ef þú áttir óþægileg samskipti við annað fólk í skóginum, í hverju voru þau fólgin?

113) Hvernig er Hallormsstaðaskógi best lýst?
Birkiskógur____ Blandskógur____ Barrskógur____ Hef ekki skoðun _____

**Hvaða ábata hafðir þú af dvöl þinni í Hallormsstaðaskógi? (krossa má við fleiri en eitt atriði)
Vinsamlega settu tvo krossa við það atriði sem mestu máli skipti.**

- 2-1) Aukin frelsistilfinning____
- 2-2) Aukin gleði____
- 2-3) Minnkun á þunglyndi eða kvíða____
- 2-4) Minnkun á streitu____
- 2-5) Lærði eitthvað um náttúruna____
- 2-6) Lærði eitthvað um Hallormsstaðaskóg____
- 2-7) Þróaði sköpunarhæfileika mína____
- 2-8) Tengdist vinum nánar____
- 2-9) Tengdist fjölskyldunni betur____
- 2-10) Öðlaðist meira sjálfstæði____
- 2-11) Naut þess að vera með fólki sem hefur svipað gildismat og ég____
- 2-12) Styrktist andlega____
- 2-13) Öðlaðist innri ró____
- 2-14) Upplifði samsömun við náttúruna____
- 2-15) Öðlaðist aukna skilning á náttúrunni____
- 2-16) Bætti almennt líkamlegt ástand____
- 2-17) Bætti þrek og þol____
- 2-18) Jók hæfileika og getu á einhverju sviði____
- 2-19) Ögraði sjálfum(ri) mér____
- 2-20) Annar ábati____ Hver?_____

114) Munt þú heimsækja Hallormsstaðaskóg aftur? Já _____ Nei _____

115) Hversu náttúrulegur er Hallormsstaðaskógur að þínu mati?
Ósnortinn____ Mjög náttúrlegur____ Fremur náttúrlegur____ Mannleg áhrif nokkuð áberandi____
Mannleg áhrif mjög áberandi____ Hef ekki skoðun____

116) Hvernig metur þú reynsluna af dvöl þinni í Hallormsstaðaskógi á heildina litið?
Mjög ánægjuleg____ Góð____ Sæmileg____ Fremur leiðinleg____ Afleit____
Hef ekki skoðun____

Eitthvað annað varðandi útvíst í skógum, heimsókn þína í Hallormsstaðaskóg eða um þessa könnun sem þú vilt koma á framfæri? _____

***Kærar þakkir fyrir að gefa þér tíma til að svara þessari könnun.
Svörin munu koma að gagni við að bæta aðstöðu til útvistar í skógunum.***

Appendix B
English translation of the questionnaires

Survey Questions for Heidmörk and Kjarni

Section one: Demographics

- 1) I am Female ____ Male ____ and ____ Years old.
- 2) Did you come to the forest alone ____ or with others ____?
- 3) Education:
Primary ____ Secondary ____ University ____
- 4) If you came as part of a group, how is the group best described?
Couple ____ Couple with children ____ Larger family group ____
Friends and acquaintances ____, Other ____
- 5) How many in your group were in the following age categories?
0-5 yrs ____ 6-12 yrs ____ 10-20 yrs ____ 21-35 yrs ____ 36-60 yrs ____
more than 60 yrs ____
- 6) How long did it take you to reach (the name of the forest) from your home?
- 7) Have you visited (name of forest) before? Yes ____ No ____
- 8) If so how often? Weekly ____, A few times a year ____, Less ____
- 9) How long was your visit to (name of forest) on average? ____ Hours
- 10) Why did you choose (name of forest) for your visit and not another area?
- 11) What did you do while you were in the forest?
- 12) Did you visit (name of forest) on a Weekday ____ Weekend ____ or Both ____

Section two: Importance ratings

When planning and providing a recreational area, it is important to know what visitors to forests like (name of forest) feel appropriate and desirable. Below is a list of various items connected to the forest and recreation in the forest and you are asked how important these items are to you. Please mark the answer you feel best describes your opinion. Below each question are lines for any additional information you may want to provide. We urge you to take the opportunity to let us know what you think.

(Unless otherwise indicated each item was followed by a scale of one to 6 with the following ratings 1) undesirable, 2) not important, 3) somewhat important, 4) very important, 5) necessary and 6) no opinion.)

How important are (is)

- 13) To have information signs in the parking areas?

- 14) That there are directional markings on the footpaths?
- 15) That there are facilities for grilling?
- 16) Access to clean water?
- 17) To have trash containers in use areas?
- 18) To have restrooms in use areas?
- 19) To have playground equipment?
- 20) To offer guided walking tours?
- 21) That access roads to the forests are in good condition?
- 22) To provide physically difficult trails?
- 23) To provide trails that are a blend of physically difficult areas and easy walking?
- 24) To provide easy walking trails?
- 25) To provide exercise equipment along the trails?
- 26) To have educational markers along the walking trails?
- 27) To have information regarding the difficulty level, length and time required to walk the trails at the trailheads?
- 28) To have benches at points of interest along the trails?
- 29) To have benches after difficult parts of walking trails?
- 30) To provide picnic facilities for small groups of less than 10?
- 31) To provide picnic facilities for large groups of more than 10?
- 32) That there is a restaurant in close proximity to the forest?
- 33) That forest staff are present in the forest and easily identifiable?
- 34) That there is a visitor center in the forest?
- 35) That there is a grocery store in close proximity to the forest?
- 36) That the forest is free from trash such as paper and plastic?
- 37) That the trees and other vegetation are free from human caused damage?
- 38) That facilities such as tables, benches and grills are in good condition?

- 39) That the trees in the forest are more than 3 meters tall?
- 40) That the forest is more than 10 hectares in area (20 soccer fields)?

Section three

A few special questions about (name of forest)

(Unless otherwise indicated each item was followed by a six point scale 1) very much, 2) somewhat, 3) a little bit, 4) not really, 5) not at all, 6) have no opinion. Again lines were provided below each question for more information.)

- 41) In some places the walking trails merge with the forest roads. Does this detract from your enjoyment of the trail?
- 42) Would the results of thinning or felling of trees such as downed trees and branches detract from your enjoyment of the forest?
- 43) Would streams and ponds add to your enjoyment of the forest?
- 44) Would it detract from your enjoyment of the forest to meet cyclists on the trails?
- 45) Would it detract from your enjoyment of the forest to meet people on horseback on the trails?
- 46) Would signs of horse traffic (such as hoof impressions and manure) detract from your enjoyment of the trails?
- 47) Would things such as traffic noise, plane noise, and electric lines detract from your enjoyment of the forest?
- 48) How long are you willing to drive to visit a forest like (name of forest)?
Hours _____, Minutes _____
- 49) How many other people do you think is desirable to meet in the forest?
None _____, Few (1-20) _____, Several (20-50) _____, Many (50+) _____,
- 50) What type of forest do you think it is best to walk/be in?
Birch _____, Mixed _____, Conifer _____, Do not have an opinion _____
- 51) Is this always the case or does your preference change from place to place?
It does not matter _____, It is always my preference _____, It changes _____, Do not have an opinion _____
- 52) If you think that forest types should change from one place to another, what determines this? _____
- 53) Is it important that the maintenance of (name of forest) be kept as natural as possible?

- 54) Would it detract from your enjoyment to meet a loose dog on the trails?
- 55) Would it detract from your enjoyment to meet a dog on a leash on the trails?
- 56) Would it detract from your enjoyment to meet a skier on the trails?
- 57) Have you made special trips to (the name of the forest) to collect (mark all appropriate spaces) Berries ____, Cones ____, Mushrooms ____, Herbs ____, Other ____?
- 58) Do you think a cross country ski trail should be maintained in (name of forest) in the winter?

Section three: Current conditions

In order to improve the service and facilities in (name of forest), we need to know what people feel about the existing conditions. Please mark the answer below that best describes the current conditions in (name of forest). As before there are lines below for any additional information you would like to provide.

(Unless otherwise indicated questions were followed by a 6 point scale: 1) perfect, 2) good, 3) fair, 4) rather poor, 5) terrible, 6) do not have an opinion.)

How were the following facilities in (name of forest)

- 59) Information signs at the parking areas?
- 60) Direction markers on the trails?
- 61) Other information about trails?
- 62) Picnic facilities for small groups?
Were there enough?
- 63) Were they tidy?
- 64) Picnic facilities for larger groups?
Were there enough?
- 65) Were they tidy?
- 66) Grilling facilities?
Were there enough?
- 67) Were they tidy?
- 68) Access to clean water?
- 69) Trash containers?
Were there enough?
- 70) Were they tidy?
- 71) Restrooms?
Were there enough?
- 72) Were they tidy?

- 73) Playground equipment?
- 74) Access roads to the forest?
- 75) Parking facilities?
- 76) Difficult walking trails?
- 77) Walking trails of medium difficulty?
- 78) Easy walking trails?
- 79) Trail maintenance?
- 80) Information about the length, difficulty and time needed to walk the trails at the trailheads?
- 81) Benches at points of interest?
- 82) Benches after difficult parts of walking trails?
- 83) Forest staff present and clearly identifiable?
- 84) Trash in the forest such as paper and plastic?
- 85) Human caused damage to trees and other vegetation?
- 86) Human caused damage to facilities such as tables, benches?
- 87) How many other people did you meet in the forest?
None ____, Few (1-20) ____, Several (20-50), Many (+50) ____
- 87a) Did you find this to be Too many ____, About right ____, To few ____, Do not have an opinion _____
- 88) Are the trees in (name of forest) tall enough?
- 89) Did you have any unpleasant experiences with other people while you were in the forest, and if so what was the nature of the encounter? _____
- 90) How would you best describe (name of forest) Birch ____, Mixed ____,
Conifer ____, Do not have an opinion _____

Section four: Benefits

What type of benefits did you gain from your visit to (name of the forest)? You may mark as many as you feel appropriate. Please place two marks with the one you feel most important.

- 2-1) Increased feeling of freedom

- 2-2) Increased joy
 - 2-3) Reduced depression or anxiety
 - 2-4) Reduced stress
 - 2-5) Learned something about nature
 - 2-6) Learned something about (name of forest)
 - 2-7) Developed/increased my creativity
 - 2-8) Got closer to my friends
 - 2-9) Got closer to my family
 - 2-10) Increased feeling of independence
 - 2-11) Enjoyed being with people with similar values to mine
 - 2-12) Gained spiritual strength
 - 2-13) Increased inner peace
 - 2-14) Experienced closeness to nature
 - 2-15) Became part of nature
 - 2-16) Improved general physical condition
 - 2-17) Increased strength and stamina
 - 2-18) Increased abilities in a particular area
 - 2-19) Challenged myself
 - 2-20) Other
- 91) Will you visit (name of forest) again? Yes _____, No _____
- 92) How natural did you find (name of forest)? Pristine _____, Very natural _____, Somewhat natural _____, Human influence was fairly obvious _____, Human influence was very obvious _____, Do not have an opinion _____.
- 93) How would you rate your stay in (name of forest)?
- 94) If there is anything about the recreational facilities, your visit in (name of forest) or about this survey that you would like to let us know, please use the lines below.

Thank you for your taking the time to answer this survey. Your answers will be used to help us improve recreational facilities in the forest.

Survey Questions for Hallormsstadur and Vaglir

Section one: Demographics

- 1) I am Female ____ Male ____ and ____ Years old.
- 2) Education: Primary ____, Secondary ____, University ____
- 3) Did you come to the forest alone ____ or with others ____?
- 4) If you came as part of a group, how is the group best described?
Couple ____ Couple with children ____ Larger family group ____
Friends and acquaintances ____, Other ____
- 5) How many in your group were in the following age categories?
0-5 yrs ____ 6-12 yrs ____ 10-20 yrs ____ 21-35 yrs ____ 36-60 yrs ____
more than 60 yrs ____
- 6) Was name of forest the main destination for this trip? Yes ____ No ____
- 7) How long did it take you to reach (the name of the forest) from your home?
- 8) Did you stay at other campgrounds during your trip? Yes ____ No ____
If yes, where? _____
- 9) Have you visited (name of forest) before? Yes ____ No ____
- 10) If so how often? 1-5 times ____ 6-10 times ____ More than 10 times ____
- 11) How long was your visit to (name of forest) _____ Hours ____ Days
- 12) Why did you choose (name of forest) for your visit and not another area?
- 13) What did you do while you were in the forest?
- 14) Did you visit (name of forest) on a Weekday ____ Weekend ____ or Both ____
- 15) If you were staying the night in the forest were you using:
Tent ____, Tent trailer ____, RV ____, Cottage ____
- 16) While you were staying at name of forest did you take any daytrips for example
(names of local points of interest)? Yes ____, No ____
- 17) If yes where did you go _____

Section two: Importance ratings

When planning and providing a recreational area, it is important to know what visitors to forests like (name of forest) feel appropriate and desirable. Below is a list of various items connected to the forest and recreation in the forest and you are asked how

important these items are to you. Please mark the answer you feel best describes your opinion. Below each question are lines for any additional information you may want to provide. We urge you to take the opportunity to let us know what you think.

(Unless otherwise indicated each item was followed by a scale of one to 6 with the following ratings 1) undesirable, 2) not important, 3) somewhat important, 4) very important, 5) necessary and 6) no opinion.)

How important are (is)

- 18) To have information signs in the parking areas?
- 19) That there are directional markings on the footpaths?
- 20) That there are facilities for grilling?
- 21) Access to clean water?
- 22) That camping in general is allowed in (name of forest)?
- 23) To have trash containers in use areas?
- 24) To have restrooms in use areas?
- 25) To have shower facilities at the campsites?
- 26) To have playground equipment at the campsites?
- 27) To offer guided walking tours?
- 28) That access roads to the forests are in good condition?
- 29) To provide physically difficult trails?
- 30) To provide trails that are a blend of physically difficult areas and easy walking?
- 31) To provide easy walking trails?
- 32) To provide exercise equipment along the trails?
- 33) To have educational markers along the walking trails?
- 34) To have information regarding the difficulty level, length and time required to walk the trails at the trailheads?
- 35) To have benches at points of interest along the trails?
- 36) To have benches after difficult parts of walking trails?
- 37) To provide picnic facilities for small groups of less than 10?

- 38) To provide picnic facilities for large groups of more than 10?
- 39) That there is a restaurant in close proximity to the forest?
- 40) To provide electrical hookups at the campsites?
- 41) That forest staff are present in the forest and easily identifiable?
- 42) That there is a visitor center in the forest?
- 43) That there is a grocery store in close proximity to the forest?
- 44) That separate areas are provided for tents, tent trailers and RVs?
- 45) That the campgrounds are well designed?
- 46) That the forest is free from trash such as paper and plastic?
- 47) That the trees and other vegetation are free from human caused damage?
- 48) That facilities such as tables, benches and grills are in good condition?
- 49) That the trees in the forest are more than 3 meters tall?
- 50) That the forest is more than 10 hectares in area (20 soccer fields)?
- 51) That a cross country ski trail is maintained during the winter?

Section three

A few special questions about (name of forest)

(Unless otherwise indicated each item was followed by a six point scale 1) very much, 2) somewhat, 3) a little bit, 4) not really, 5) not at all, 6) have no opinion. Again lines were provided below each question for more information.)

- 52) In some places the walking trails merge with the forest roads. Does this detract from your enjoyment of the trail?
- 53) Would the results of thinning or felling of trees such as downed trees and branches detract from your enjoyment of the forest?
- 54) Besides the trail to the arboretum did you use other trails in the forest?
 Yes _____, No _____
 If no why? Did not know about them _____, Were not suitable for me/us _____, Was not interested _____, Did not have time _____
- 55) Did you use the trail guide booklet? Yes _____, No _____
 If no why? Did not know about it _____, Did not suit the group I was with _____, Know the forest so well it I did not need it _____, Was not interested _____

- 56) Would streams and ponds add to your enjoyment of the forest?
- 57) Would it detract from your enjoyment of the forest to meet cyclists on the trails?
- 58) Would it detract from your enjoyment of the forest to meet people on horseback on the trails?
- 59) Would signs of horse traffic (such as hoof impressions and manure) detract from your enjoyment of the trails?
- 60) Would things such as traffic noise, plane noise, and electric lines detract from your enjoyment of the forest?
- 61) Would it detract from your enjoyment to meet a loose dog on the trails?
- 62) Would it detract from your enjoyment to meet a dog on a leash on the trails?
- 63) Would it detract from your enjoyment to meet a skier on the trails?
- 64) How long are you willing to drive to visit a forest like (name of forest)?
Hours _____, Minutes _____
- 65) Do you think it is appropriate to have cottages in (name of forest)?
- 66) Do you think it is appropriate to have summer houses in (name of forest)?
- 67) Do you think it is appropriate to have a hotel in (name of forest)?
- 68) How many other people do you think is desirable to meet in the forest?
None _____, Few (1-20) _____, Several (20-50) _____, Many (50+) _____,
- 69) What type of forest do you think it is best to walk/be in?
Birch _____, Mixed _____, Conifer _____, Do not have an opinion _____
- 70) Is this always the case or does your preference change from place to place?
It does not matter _____, It is always my preference _____, It changes _____, Do not have an opinion _____
- 71) If you think that forest types should change from one place to another, what determines this? _____
- 72) Do you think camping should be allowed in general in (name of forest)?
Yes _____, No _____, Do not have an opinion _____
- 73) Do you think camping should be restricted to designated campsites?
Yes _____, No _____, Do not have an opinion _____
- 74) Is it important that the maintenance of (name of forest) be kept as natural as possible?

75) Do you think campfires should be allowed in (name of forest)?

Section three: Current conditions

In order to improve the service and facilities in (name of forest), we need to know what people feel about the existing conditions. Please mark the answer below that best describes the current conditions in (name of forest). As before there are lines below for any additional information you would like to provide.

(Unless otherwise indicated questions were followed by a 6 point scale: 1) perfect, 2) good, 3) fair, 4) rather poor, 5) terrible, 6) do not have an opinion.)

How were the following facilities in (name of forest)

76) Information signs at the parking areas?

77) Direction markers on the trails?

78) Other information along the trails?

79) Picnic facilities for small groups?

Were there enough?

80) Were they tidy?

81) Picnic facilities for larger groups?

Were there enough?

82) Were they tidy?

83) Grilling facilities?

Were there enough?

84) Were they tidy?

85) Access to clean water?

86) Trash containers?

Were there enough?

87) Were they tidy?

88) Restrooms?

Were there enough?

89) Were they tidy?

90) Shower facilities?

Were there enough?

91) Were they tidy?

92) Playground equipment?

93) Access roads to the forest?

94) Parking facilities?

- 95) Difficult walking trails?
- 96) Walking trails of medium difficulty?
- 97) Easy walking trails?
- 98) Trail maintenance?
- 99) Information about the length, difficulty and time needed to walk the trails at the trailheads?
- 100) Benches at points of interest?
- 101) Benches after difficult parts of walking trails?
- 102) Electric hookups at campsites?
- 103) Forest staff present and clearly identifiable?
- 104) Campground design?
- 105) Separate camping areas for tents?
- 106) Trash in the forest such as paper and plastic?
- 107) Human caused damage to trees and other vegetation?
- 108) Human caused damage to facilities such as tables, benches?
- 109) How many other people did you meet in the forest?
None ____, Few (1-20) ____, Several (20-50), Many (+50) ____
- 110) Did you find this to be Too many ____, About right ____, To few ____, Do not have an opinion _____
- 111) Are the trees in (name of forest) tall enough?
- 112) Did you have any unpleasant experiences with other people while you were in the forest, and if so what was the nature of the encounter? _____
- 113) How would you best describe (name of forest) Birch ____, Mixed ____, Conifer ____, Do not have an opinion ____

Section four: Benefits

What type of benefits did you gain from your visit to (name of the forest)? You may mark as many as you feel appropriate. Please place two marks with the one you feel most important.

- 2-1) Increased feeling of freedom
- 2-2) Increased joy
- 2-3) Reduced depression or anxiety
- 2-4) Reduced stress
- 2-5) Learned something about nature
- 2-6) Learned something about (name of forest)
- 2-7) Developed/increased my creativity
- 2-8) Got closer to my friends
- 2-9) Got closer to my family
- 2-10) Increased feeling of independence
- 2-11) Enjoyed being with people with similar values to mine
- 2-12) Gained spiritual strength
- 2-13) Increased inner peace
- 2-14) Experienced closeness to nature
- 2-15) Became part of nature
- 2-16) Improved general physical condition
- 2-17) Increased strength and stamina
- 2-18) Increased abilities in a particular area
- 2-19) Challenged myself
- 2-20) Other

114) Will you visit (name of forest) again? Yes _____, No _____

115) How natural did you find (name of forest)? Pristine _____, Very natural _____, Somewhat natural _____, Human influence was fairly obvious _____, Human influence was very obvious _____, Do not have an opinion _____.

116) How would you rate your stay in (name of forest)?

If there is anything about the recreational facilities, your visit in (name of forest) or about this survey that you would like to let us know, please use the lines below.

Thank you for your taking the time to answer this survey. Your answers will be used to help us improve recreational facilities in the forest.

Appendix C

Sign used in Hallormsstadur and Vagfir for recruitment

Letters used in the survey

Ágætu gestir í Hallormsstaðaskógi

Skógrækt ríkisins stendur fyrir könnun á upplifun og væntingum folks sem stundar útivist í nokkrum af skógum landsins, þar á meðal í Hallormsstaðaskógi. Niðurstöðurnar verða nýttar til að bæta aðstöðu í skógunum m.t.t. útivistar.

Ef þú hefur áhuga á að taka þátt og láta þínar skoðanir í ljós, vinsamlega skrifaðu nafn þitt og heimilisfang á blað sem hér fylgir. Þá færð þú senda könnunina í pósti í haust.

Kærar þakkir



Valued Guest in (name of forest)

The Icelandic Forest Service is doing a survey about the experiences and desires of guests in several Icelandic forests including (name of forest). The results of the survey will be used to improve the recreational facilities in the forests.

If you are interested in participating and letting your opinions be known, please add your name and address to the list below. A questionnaire will be sent to you this fall.

Thank you





Kæri viðtakandi,

Takk fyrir að samþykkja að taka þátt í þessari könnun um nýtingu skóga til útivistar þegar þú varst á ferð um Hallormsstaðaskóg s.l. sumar. Þegar þú svarar meðfylgjandi spurningum bið ég þig að rifja upp þessa ferð og svara spurningunum eftir bestu getu. Á þessu ári eru 100 ár liðin frá setningu fyrstu skógræktarlaga árið 1907. Í tilefni afmælisins standa Skógrækt ríkisins, Skógræktarfélag Eyfirðinga og Skógræktarfélag Reykjavíkur að þessari viðamestu könnun sem gerð hefur verið hérlandis meðal fólks sem kýs að notfæra sér íslenska skóga til útivistar.

Það er markmið þessara aðila að bjóða uppá bestu aðstöðu til útivistar sem mögulegt er, en til þess er nauðsynlegt að fá upplýsingar um væntingar og upplifun ykkar sem heimsækið skógana.

Þessi könnun fer fram meðal fólks sem heimsótt hefur Hallormsstaðaskóg, Vaglaskóg, Þórsmörk, Kjarnaskóg og Heiðmörk. Nöfn svarenda verða ekki tengd við svarblöð og nafnleyndar verður gætt. Nafnaskrár verður eytt strax og dagatölin hafa verið send.

Þeir sem svara þessari könnun fyrir 15. nóvember n.k. fá sent myndskreytt dagatal Skógræktar ríkisins fyrir 2008 í þakklætisskyni fyrir aðstoðina.

Vinsamlega notaðu meðfylgjandi umslag til að senda könnunina til baka þegar þú ert búin(n) að svara.

Enn og aftur, kærar þakkir fyrir að taka tíma til að aðstoða okkur við að bæta aðstöðu til útivistar í skógunum.

Skógrækt ríkisins,
Miðvangi 2-4
700 Egilsstaðir



Dear Participant,

Thank you for agreeing to take part in our survey when you were in (name of forest) last summer. When you answer the following questions please recall your trip and answer the questions to the best of your ability. This year marks the 100th anniversary of the signing of the first forestry laws in 1907. To commemorate this, the Icelandic Forest Service in cooperation with the Forestry Society of Eyjafjörður and the Forestry Society of Reykjavík are doing the most comprehensive survey of recreational use of the forests that has been done in Iceland.

It is the goal of these organizations to provide the highest quality recreational forests possible. In order to reach this goal it is necessary to obtain information about the desires and experiences of the guests to these forests.

This survey is being done among people who visited the forests of Hallormsstadur, Vaglir, Kjarni and Heidmörk. The names of respondents will not be connected to the answer sheets and will be kept secret. The names and addresses of respondents will be removed from our records as soon as the calendars have been posted.

Those answering and returning this survey by the 15th of November of this year will receive a copy of the Forest Service's calendar for 2008 as a token of our appreciation for their assistance with this project.

Please use the enclosed envelope to return your questionnaire when you are finished filling it in.

Again, thank you very much for taking the time to help us in our efforts to improve the recreational facilities in the forests.

Skógrækt ríkisins,
Miðvangi 2-4
700 Egilsstaðir



Kæri viðtakandi

Við viljum þakka þeim sem hafa skilað inn könnuninni og minna hina á sem að ekki hafa skilað að það er enn tími. Allir sem að skila fá sent eintak af dagatali Skógræktar ríkisins 2008.

Það er mikilvægt fyrir okkur að sem flestir skili, svo að við getum orðið við óskum sem flestra við endurskipulagningu á útivistarskógunum og tjaldsvæðunum.

Enn og aftur þakkar þú fyrir að gefa þér tíma til að aðstoða okkur við að bæta aðstöðu til útivistar í skógunum.

Skógrækt ríkisins
Miðvangi 2-4
700 Egilsstaðir

Ef að gögnin frá okkur hafa glatast, vinsamlegast hafið samband við okkur símleiðis eða í tölvupósti og við sendum ykkur ný gögn.

Tölvupóstur: skogur@skogur.is
Simi: 471-2100



Dear Participant,

We would like to thank those who have returned their completed questionnaires and remind those who have not yet returned their's there is still time for them to be included in this survey. All of those returning their questionnaires will receive a copy of the Forest Service calendar for 2008.

It is important to us that everyone returns their questionnaires so that we can take your opinions into consideration to improve the recreational facilities in the forest.

Again thank you for taking the time to assist us in improving forest recreation facilities.

Skógrækt ríkisins
Miðvangi 2-4
700 Egilsstaðir

If the material from us has been misplaced, please contact us by telephone or email and we will resent the material

Tölvupóstur: skogur@skogur.is

Sími: 471-2100



Kæri viðtakandi

Við viljum minna á útvistarkönnun í skógum sem þú bauðst til að svara og var send þér í október. Það er mikilvægt fyrir okkur að sem flestir skili, svo við getum orðið við óskum fólks við endurskipulagningu á útvistarskógum og tjaldsvæðum.

Enn er tími til að koma þínum skoðunum á framfæri með því að svara könnuninni. Við biðjum þig vinsamlega að skila könnuninni til okkar fyrir 10. desember n.k., en eftir það förum við að vinna úr niðurstöðunum.

Enn og aftur kærar þakkir fyrir að gefa þér tíma til að aðstoða okkur við að bæta aðstöðu til útivistar í skógunum.

Skógrækt ríkisins
Miðvangi 2-4
700 Egilsstaðir

Ef könnunin hefur glatast, vinsamlegast hafðu samband við okkur símleidis eða í tölvupósti og við sendum þér ný gögn.

Tölvupóstur: skogur@skogur.is

Sími: 471-2100



Dear Participant,

We would like to remind you of the survey you agreed to take part in that was sent to you in October. It is important to this project that everyone returns the questionnaires so we can include your opinions into the restructuring of the recreational areas in the forests.

There is still time to make your opinions known by answering and returning your questionnaire to us. We ask that you return your completed questionnaire by the 10th of December of this year, after that time work on the data will begin.

Again we would like to thank you for assisting us in our efforts to improve the recreational facilities in the forests.

Skógrækt ríkisins
Miðvangi 2-4
700 Egilsstaðir

If your copy of the questionnaire has been misplaced, please contact us at either by email or telephone and we will send you another copy.

Email: skogur@skogur.is

Telephone: 471-2100

Appendix D

ANOVA tables

ANOVA Tables for Tests by Social Group/forest

All tests for normality failed

Kruskal-Wallis One Way Analysis of Variance on Ranks

Post hoc test Dunn's Method for pairwise comparison

Question	N Valid	Mean	Std. Dev.	P
HLA-18	1	5,000		NS
HLB-18	5	4,800	,447	NS
HLC-18	22	4,364	,953	NS
HLD-18	11	3,909	,831	NS
HLE-18	6	4,500	,548	NS
HLF-18	4	4,250	,957	NS
HMA-18	13	3,923	,954	NS
HMB-18	21	3,619	1,161	NS
HMC-18	5	3,600	,548	NS
HMD-18	9	4,222	,972	NS
HME-18	11	3,545	,934	NS
HMF-18	11	4,091	,701	NS
KA-18	1	4,000		NS
KB-18	2	5,000	,000	NS
KC-18	8	4,250	,707	NS
KD-18	8	4,250	1,165	NS
KF-18	4	4,250	,957	NS
VA-18	4	4,500	,577	NS
VB-18	13	4,000	,913	NS
VC-18	21	4,048	1,161	NS
VD-18	21	4,143	,854	NS
VE-18	26	4,077	,744	NS
VF-18	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-19	1	5,000		NS
HLB-19	5	4,600	,548	NS
HLC-19	22	4,341	,714	NS
HLD-19	11	4,091	,831	NS
HLE-19	6	4,500	,548	NS
HLF-19	4	4,250	,957	NS
HMA-19	13	3,769	1,363	NS
HMB-19	21	3,524	1,250	NS
HMC-19	5	3,600	,548	NS
HMD-19	9	3,889	,782	NS
HME-19	11	3,818	,751	NS
HMF-19	11	3,909	,831	NS
KA-19	1	4,000		NS
KB-19	2	4,500	,707	NS
KC-19	8	4,125	,641	NS
KD-19	8	4,125	,991	NS
KF-19	4	4,500	,577	NS
VA-19	4	4,250	,957	NS
VB-19	13	4,154	,801	NS

VC-19	21	4,190	,750	NS
VD-19	21	4,286	,644	NS
VE-19	28	4,214	,686	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-20	1	3,000		NS
HLB-20	5	3,400	1,140	NS
HLC-20	22	3,227	1,110	NS
HLD-20	11	2,909	,944	NS
HLE-20	6	3,667	1,211	NS
HLF-20	4	3,250	1,500	NS
HMA-20	12	2,833	1,403	NS
HMB-20	17	2,824	1,131	NS
HMC-20	5	3,800	,837	NS
HMD-20	8	2,750	1,035	NS
HME-20	10	2,500	1,080	NS
HMF-20	10	3,000	,471	NS
KA-20	1	2,000		NS
KB-20	2	3,000	,000	NS
KC-20	8	3,500	1,195	NS
KD-20	7	3,143	,690	NS
KF-20	4	4,000	,816	NS
VA-20	4	3,250	,500	NS
VB-20	13	3,077	1,115	NS
VC-20	21	2,952	,805	NS
VD-20	19	3,158	,898	NS
VE-20	25	3,040	,935	NS
VF-20	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-21	1	5,000	,000	NS
HLB-21	5	4,800	,447	NS
HLC-21	22	4,727	,767	NS
HLD-21	11	4,455	,934	NS
HLE-21	6	5,000	,000	NS
HLF-21	4	4,750	,500	NS
HMA-21	13	3,654	,000	NS
HMB-21	21	3,000	1,179	NS
HMC-21	5	4,200	1,140	NS
HMD-21	8	4,250	1,304	NS
HME-21	10	3,200	1,035	NS
HMF-21	11	3,273	1,229	NS
KA-21	1	3,000	,905	NS
KB-21	2	5,000	,000	NS
KC-21	8	4,250	,886	NS
KD-21	8	4,375	1,061	NS
KF-21	4	4,500	,577	NS
VA-21	4	4,250	,957	NS
VB-21	13	5,000	,000	NS
VC-21	21	4,857	,359	NS
VD-21	21	4,810	,402	NS
VE-21	26	4,923	,272	NS
VF-21	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-22	1	5,000		NS
HLB-22	5	4,800	,447	NS
HLC-22	22	4,409	,854	NS
HLD-22	11	4,273	,905	NS
HLE-22	6	4,500	,548	NS
HLF-22	4	4,750	,500	NS
VA-22	4	4,500	,577	NS
VB-22	13	4,538	,519	NS
VC-22	21	4,524	,602	NS
VD-22	21	4,190	,814	NS
VE-22	26	4,385	,804	NS
VF-22	2	4,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-23	1	5,000		NS
HLB-23	5	5,000	,000	NS
HLC-23	22	4,818	,501	NS
HLD-23	11	4,636	,674	NS
HLE-23	6	4,500	1,225	NS
HLF-23	4	5,000	,000	NS
HMA-23	13	4,538	,776	NS
HMB-23	21	4,286	1,007	NS
HMC-23	5	4,200	1,304	NS
HMD-23	9	4,444	,882	NS
HME-23	11	4,364	,674	NS
HMF-23	11	4,182	,603	NS
KA-23	1	4,000		NS
KB-23	2	5,000	,000	NS
KC-23	8	4,875	,354	NS
KD-23	8	4,250	,886	NS
KF-23	4	5,000	,000	NS
VA-23	4	4,750	,500	NS
VB-23	13	4,692	,480	NS
VC-23	21	4,762	,436	NS
VD-23	21	4,524	,512	NS
VE-23	26	4,769	,587	NS
VF-23	2	4,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-24	1	5,000		NS
HLB-24	5	4,600	,548	NS
HLC-24	22	4,545	,596	NS
HLD-24	11	4,636	,674	NS
HLE-24	6	4,167	,983	NS
HLF-24	4	5,000	,000	NS
HMA-24	13	3,615	1,387	NS
HMB-24	20	3,500	1,100	P< 0.05
HMC-24	5	4,000	,707	NS
HMD-24	9	4,222	,833	NS
HME-24	11	3,636	,924	P< 0.05
HMF-24	11	3,636	1,120	P< 0.05
KA-24	1	4,000		NS
KB-24	2	4,000	1,414	NS

KC-24	8	4,125	,991	NS
KD-24	8	4,375	,744	NS
KF-24	4	4,750	,500	NS
VA-24	4	4,750	,500	NS
VB-24	13	4,692	,630	NS
VC-24	21	4,762	,436	NS
VD-24	21	4,524	,602	NS
VE-24	26	5,000	,000	P< 0.05
VF-24	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-25	1	3,000		NS
HLB-25	5	4,600	,548	NS
HLC-25	22	3,545	1,057	NS
HLD-25	11	3,818	1,168	NS
HLE-25	6	3,667	,816	NS
HLF-25	4	3,750	1,500	NS
VA-25	4	4,000	,816	NS
VB-25	13	4,462	,877	NS
VC-25	21	4,048	,740	NS
VD-25	21	3,857	,964	NS
VE-25	26	4,423	,902	NS
VF-25	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-26	1	3,000		NS
HLB-26	5	5,000	,000	NS
HLC-26	22	3,955	,899	NS
HLD-26	11	4,182	,751	NS
HLE-26	6	4,333	1,033	NS
HLF-26	4	4,750	,500	NS
HMA-26	11	3,273	1,421	NS
HMB-26	17	3,471	1,007	NS
HMC-26	5	3,800	1,095	NS
HMD-26	9	3,000	,707	NS
HME-26	8	3,125	,991	NS
HMF-26	11	3,273	,905	NS
KB-26	2	4,000	,000	NS
KC-26	8	4,375	,744	NS
KD-26	8	3,750	,707	NS
KF-26	4	4,250	,500	NS
VA-26	4	4,500	,577	NS
VB-26	13	3,692	,751	NS
VC-26	21	4,333	,796	NS
VD-26	21	4,190	,814	NS
VE-26	26	4,385	,697	NS
VF-26	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-27	1	3,000		NS
HLB-27	5	2,800	,447	NS
HLC-27	18	2,778	,732	NS
HLD-27	8	2,875	1,126	NS
HLE-27	6	2,833	,753	NS

HLF-27	4	2,500	,577	NS
HMA-27	11	3,000	1,095	NS
HMB-27	19	2,368	,831	NS
HMC-27	5	2,200	,447	NS
HMD-27	8	2,875	1,126	NS
HME-27	10	2,500	,707	NS
HMF-27	10	2,800	,789	NS
KA-27	1	3,000		NS
KB-27	1	2,000		NS
KC-27	7	2,857	,690	NS
KD-27	8	2,625	,744	NS
KF-27	4	2,750	,500	NS
VA-27	3	2,667	,577	NS
VB-27	11	2,727	,786	NS
VC-27	18	2,417	,493	NS
VD-27	16	2,313	,479	NS
VE-27	25	2,560	,821	NS
VF-27	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-28	1	5,000		NS
HLB-28	5	4,000	1,225	NS
HLC-28	22	4,182	,664	NS
HLD-28	11	4,091	1,136	NS
HLE-28	6	4,333	,816	NS
HLF-28	4	4,250	,957	NS
HMA-28	13	3,615	1,044	NS
HMB-28	21	3,762	,995	NS
HMC-28	5	4,000	1,225	NS
HMD-28	9	4,333	,707	NS
HME-28	11	3,909	1,221	NS
HMF-28	11	4,091	,831	NS
KA-28	1	4,000		NS
KB-28	2	4,500	,707	NS
KC-28	8	4,250	,886	NS
KD-28	8	3,750	,463	NS
KF-28	4	4,000	,000	NS
VA-28	4	4,500	,577	NS
VB-28	13	4,308	,480	NS
VC-28	20	4,150	,933	NS
VD-28	20	4,200	,696	NS
VE-28	26	4,308	,618	NS
VF-28	2	4,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-29	1	4,000		NS
HLB-29	5	2,600	,548	NS
HLC-29	19	2,895	,937	NS
HLD-29	7	3,000	,000	NS
HLE-29	6	2,667	1,033	NS
HLF-29	4	3,250	,957	NS
HMA-29	12	3,250	1,215	NS
HMB-29	15	3,067	1,163	NS
HMC-29	4	2,750	,957	NS

HMD-29	8	2,875	1,126	NS
HME-29	10	3,600	,699	NS
HMF-29	11	3,091	1,044	NS
KA-29	1	3,000		NS
KB-29	2	3,500	,707	NS
KC-29	8	2,875	,641	NS
KD-29	6	2,833	,753	NS
KF-29	4	3,250	,500	NS
VA-29	3	2,667	,577	NS
VB-29	13	3,231	1,166	NS
VC-29	17	3,235	,664	NS
VD-29	16	2,313	,602	NS
VE-29	24	2,958	,999	NS
VF-29	2	2,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-30	1	4,000		NS
HLB-30	5	2,800	,837	NS
HLC-30	19	3,105	,937	NS
HLD-30	7	3,143	,900	NS
HLE-30	6	3,000	,632	NS
HLF-30	4	3,250	,957	NS
HMA-30	11	3,182	1,079	NS
HMB-30	16	3,313	1,014	NS
HMC-30	4	3,000	,816	NS
HMD-30	8	3,500	1,069	NS
HME-30	10	3,500	,707	NS
HMF-30	10	3,200	1,135	NS
KA-30	1	3,000		NS
KB-30	2	3,500	,707	NS
KC-30	8	3,125	,835	NS
KD-30	6	3,000	,894	NS
KF-30	4	3,000	,000	NS
VA-30	3	3,333	,577	NS
VB-30	13	3,462	1,127	NS
VC-30	17	3,353	,786	NS
VD-30	16	2,625	,806	NS
VE-30	24	3,208	1,021	NS
VF-30	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLC-31	2	4,000	,000	NS
HLD-31	10	4,400	,516	NS
HLE-31	6	4,333	,816	NS
HLF-31	4	3,750	,957	NS
HMA-31	12	3,833	,718	NS
HMB-31	20	3,700	1,081	NS
HMC-31	5	4,000	1,000	NS
HMD-31	9	4,444	,726	NS
HME-31	10	4,000	,667	NS
HMF-31	10	3,600	1,174	NS
KA-31	1	4,000		NS
KB-31	2	4,500	,707	NS
KC-31	8	4,250	,463	NS

KD-31	8	4,000	,535	NS
KF-31	4	4,000	,000	NS
VA-31	3	4,333	,577	NS
VB-31	13	3,846	,987	NS
VC-31	18	4,222	,647	NS
VD-31	17	3,176	,529	NS
VE-31	26	3,731	,827	NS
VF-31	2	3,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-32	1	2,000		NS
HLB-32	5	1,800	,447	NS
HLC-32	20	2,050	,394	NS
HLD-32	7	2,571	,787	NS
HLE-32	6	2,167	,408	NS
HLF-32	4	2,000	,000	NS
HMA-32	12	2,333	1,231	NS
HMB-32	16	2,125	,957	NS
HMC-32	3	2,000	,000	NS
HMD-32	9	1,889	,601	NS
HME-32	8	2,500	1,309	NS
HMF-32	8	2,625	1,302	NS
KA-32	1	2,000		NS
KB-32	2	3,000	,000	NS
KC-32	6	2,667	,516	NS
KD-32	7	2,143	,378	NS
KF-32	3	2,667	,577	NS
VA-32	3	2,333	,577	NS
VB-32	9	2,222	,441	NS
VC-32	17	2,059	,556	NS
VD-32	17	2,265	,752	NS
VE-32	25	2,120	,600	NS
VF-32	1	2,000		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-33	1	4,000		NS
HLB-33	5	4,200	,837	NS
HLC-33	21	3,714	,784	NS
HLD-33	11	4,182	,874	NS
HLE-33	6	3,833	,753	NS
HLF-33	4	4,000	1,155	NS
HMA-33	13	3,846	,801	NS
HMB-33	21	3,619	,921	NS
HMC-33	5	3,400	,548	NS
HMD-33	9	4,000	1,000	NS
HME-33	11	3,818	,874	NS
HMF-33	10	3,600	,699	NS
KA-33	1	3,000		NS
KB-33	2	4,000	,000	NS
KC-33	8	3,500	1,069	NS
KD-33	8	3,875	,641	NS
KF-33	4	3,500	,577	NS
VA-33	4	3,500	,577	NS
VB-33	13	3,692	,855	NS

VC-33	20	3,450	,999	NS
VD-33	20	3,700	,657	NS
VE-33	25	3,400	,645	NS
VF-33	2	3,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-34	1	5,000		NS
HLB-34	5	4,600	,548	NS
HLC-34	21	3,905	,768	NS
HLD-34	11	4,364	,809	NS
HLE-34	6	4,333	,816	NS
HLF-34	4	3,750	1,500	NS
HMA-34	12	3,667	,888	NS
HMB-34	20	3,450	1,099	NS
HMC-34	5	3,200	,837	NS
HMD-34	9	4,111	,928	NS
HME-34	11	3,818	,874	NS
HMF-34	11	3,455	,820	NS
KA-34	1	3,000		NS
KB-34	2	4,000	1,414	NS
KC-34	8	4,000	,926	NS
KD-34	8	3,250	,886	NS
KF-34	4	3,750	,500	NS
VA-34	4	3,000	1,155	NS
VB-34	13	3,769	1,166	NS
VC-34	18	3,889	,900	NS
VD-34	19	3,579	,902	NS
VE-34	25	3,400	,913	NS
VF-34	2	3,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-35	1	4,000		NS
HLB-35	5	4,200	1,095	NS
HLC-35	21	3,381	,740	NS
HLD-35	9	3,667	,866	NS
HLE-35	6	4,500	,837	NS
HLF-35	4	4,000	1,414	NS
HMA-35	13	3,923	1,256	NS
HMB-35	21	3,571	,978	NS
HMC-35	5	3,800	1,095	NS
HMD-35	9	4,444	,726	NS
HME-35	11	3,818	,874	NS
HMF-35	11	3,364	1,027	NS
KA-35	1	3,000		NS
KB-35	2	4,000	,000	NS
KC-35	8	4,000	,756	NS
KD-35	8	3,875	,354	NS
KF-35	4	4,000	,816	NS
VA-35	4	3,750	,500	NS
VB-35	12	3,583	,900	NS
VC-35	20	3,300	,923	NS
VD-35	20	3,400	,754	NS
VE-35	26	3,423	,758	NS
VF-35	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-36	1	4,000		NS
HLB-36	5	4,200	1,095	NS
HLC-36	20	3,400	,821	NS
HLD-36	10	3,200	1,033	NS
HLE-36	6	4,167	,753	NS
HLF-36	4	4,000	,816	NS
HMA-36	13	3,846	1,405	NS
HMB-36	18	3,444	,856	NS
HMC-36	5	3,000	1,000	NS
HMD-36	9	4,111	,928	NS
HME-36	11	3,182	1,079	NS
HMF-36	10	3,100	1,197	NS
KA-36	1	3,000		NS
KB-36	2	3,000	1,414	NS
KC-36	8	3,625	,916	NS
KD-36	8	3,750	,707	NS
KF-36	4	4,000	,000	NS
VA-36	4	3,750	1,258	NS
VB-36	12	3,750	,965	NS
VC-36	19	3,316	,885	NS
VD-36	20	3,200	,834	NS
VE-36	26	3,346	,745	NS
VF-36	2	2,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-37	1	4,000		NS
HLB-37	5	3,000	1,225	NS
HLC-37	19	3,263	,806	NS
HLD-37	8	3,875	,835	NS
HLE-37	5	3,400	1,140	NS
HLF-37	4	3,750	,957	NS
HMA-37	12	3,333	1,231	NS
HMB-37	18	3,333	,907	NS
HMC-37	5	3,600	,548	NS
HMD-37	9	3,444	1,236	NS
HME-37	11	3,636	,674	NS
HMF-37	10	3,400	,843	NS
KB-37	2	3,500	,707	NS
KC-37	8	3,625	,518	NS
KD-37	8	4,000	,926	NS
KF-37	4	4,250	,500	NS
VA-37	1	3,000		NS
VB-37	12	2,667	1,073	NS
VC-37	19	3,263	,806	NS
VD-37	18	3,333	,840	NS
VE-37	22	3,227	,922	NS
VF-37	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-38	1	3,000		NS
HLB-38	5	2,800	1,304	NS
HLC-38	17	2,765	,752	NS

HLD-38	7	3,429	1,272	NS
HLE-38	5	2,800	,837	NS
HLF-38	3	3,667	1,155	NS
HMA-38	11	3,000	1,549	NS
HMB-38	16	2,750	,931	NS
HMC-38	4	3,250	,500	NS
HMD-38	9	3,333	1,500	NS
HME-38	11	3,182	,982	NS
HMF-38	10	3,600	,516	NS
KB-38	2	2,500	,707	NS
KC-38	7	3,286	,488	NS
KD-38	8	3,250	1,035	NS
KF-38	4	4,000	,816	NS
VA-38	2	3,000	,000	NS
VB-38	11	2,455	1,214	NS
VC-38	19	2,789	,918	NS
VD-38	18	2,944	,938	NS
VE-38	22	2,909	,921	NS
VF-38	1	2,000		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-39	1	3,000		NS
HLB-39	5	2,400	,894	NS
HLC-39	20	2,700	,979	NS
HLD-39	9	2,889	1,054	NS
HLE-39	6	3,000	1,095	NS
HLF-39	4	2,500	1,732	NS
HMA-39	12	2,208	1,233	NS
HMB-39	21	1,714	,845	NS
HMC-39	4	1,750	,500	NS
HMD-39	9	1,667	,707	NS
HME-39	11	2,182	1,328	NS
HMF-39	11	2,000	,894	NS
KA-39	1	2,000		NS
KB-39	1	2,000		NS
KC-39	7	2,000	,816	NS
KD-39	8	1,875	,354	NS
KF-39	4	1,750	,500	NS
VA-39	3	2,333	1,528	NS
VB-39	12	2,500	1,000	NS
VC-39	21	2,762	1,136	NS
VD-39	19	2,579	,838	NS
VE-39	25	2,520	,918	NS
VF-39	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-40	1	4,000		NS
HLB-40	5	3,600	,894	NS
HLC-40	20	3,550	1,099	NS
HLD-40	11	4,364	1,027	NS
HLE-40	6	4,500	,837	NS
HLF-40	4	3,500	1,291	NS
VA-40	4	3,750	,957	NS
VB-40	13	3,615	1,325	NS

VC-40	21	4,429	,598	NS
VD-40	21	3,857	1,014	NS
VE-40	26	4,308	,928	NS
VF-40	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-41	1	4,000		NS
HLB-41	5	4,200	,837	NS
HLC-41	21	3,762	,768	NS
HLD-41	11	4,091	,944	NS
HLE-41	5	4,400	,548	NS
HLF-41	4	4,250	,500	NS
HMA-41	12	3,167	1,337	NS
HMB-41	18	2,500	,924	NS
HMC-41	5	2,400	,894	NS
HMD-41	9	2,111	,601	NS
HME-41	11	2,545	,820	NS
HMF-41	10	2,400	,516	NS
KA-41	1	3,000		NS
KB-41	2	2,000	,000	NS
KC-41	8	2,750	,707	NS
KD-41	8	2,500	,535	NS
KF-41	4	3,250	,957	NS
VA-41	4	3,500	,577	NS
VB-41	13	3,615	1,121	NS
VC-41	21	3,810	1,078	NS
VD-41	21	3,667	,796	NS
VE-41	26	3,538	,859	NS
VF-41	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-42	1	3,000		NS
HLB-42	4	2,250	,500	NS
HLC-42	14	2,500	,650	NS
HLD-42	6	2,417	,665	NS
HLE-42	6	2,667	1,366	NS
HLF-42	4	2,750	1,500	NS
HMA-42	10	2,400	1,350	NS
HMB-42	18	2,111	,832	NS
HMC-42	5	2,400	,548	NS
HMD-42	8	2,500	1,414	NS
HME-42	10	2,400	,699	NS
HMF-42	10	2,300	,823	NS
KA-42	1	2,000		NS
KB-42	1	2,000		NS
KC-42	6	2,667	,816	NS
KD-42	8	2,125	,354	NS
KF-42	4	2,250	,500	NS
VA-42	3	2,333	,577	NS
VB-42	11	2,364	,674	NS
VC-42	19	2,368	,496	NS
VD-42	19	2,579	,769	NS
VE-42	23	2,478	,665	NS
VF-42	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-43	1	3,000		NS
HLB-43	5	2,800	1,095	NS
HLC-43	20	3,100	,912	NS
HLD-43	11	3,273	1,009	NS
HLE-43	6	3,500	1,517	NS
HLF-43	4	3,250	1,258	NS
HMA-43	12	1,917	1,165	NS
HMB-43	20	1,500	,513	NS
HMC-43	4	1,750	,500	NS
HMD-43	9	2,000	1,225	NS
HME-43	11	2,000	,894	NS
HMF-43	11	1,727	,647	NS
KA-43	1	2,000		NS
KB-43	2	2,000	,000	NS
KC-43	7	1,857	,690	NS
KD-43	8	2,125	,641	NS
KF-43	4	2,250	,500	NS
VA-43	4	3,000	,816	NS
VB-43	12	3,750	,754	NS
VC-43	21	3,762	,944	NS
VD-43	21	3,810	,981	NS
VE-43	26	3,846	1,084	NS
VF-43	2	4,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-44	1	2,000		NS
HLB-44	5	3,600	1,817	NS
HLC-44	18	2,556	1,199	NS
HLD-44	9	2,778	1,202	NS
HLE-44	5	2,400	1,140	NS
HLF-44	3	2,667	1,155	NS
VA-44	4	1,750	,957	NS
VB-44	12	2,750	1,215	NS
VC-44	19	2,421	,769	NS
VD-44	19	2,684	1,157	NS
VE-44	23	3,000	1,087	NS
VF-44	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-45	1	5,000		NS
HLB-45	5	4,400	1,342	NS
HLC-45	21	3,857	1,014	NS
HLD-45	11	4,364	,674	NS
HLE-45	6	4,667	,516	NS
HLF-45	4	4,500	,577	NS
VA-45	4	4,250	,500	NS
VB-45	13	4,385	,768	NS
VC-45	21	4,476	,680	NS
VD-45	21	4,095	,539	NS
VE-45	26	4,308	,736	NS
VF-45	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-46	1	5,000		NS
HLB-46	5	4,600	,894	NS
HLC-46	21	4,667	,483	NS
HLD-46	11	4,727	,467	NS
HLE-46	6	4,833	,408	NS
HLF-46	4	5,000	,000	NS
HMA-46	13	4,615	,650	NS
HMB-46	21	4,857	,359	NS
HMC-46	5	4,600	,548	NS
HMD-46	9	4,778	,667	NS
HME-46	11	4,636	,674	NS
HMF-46	11	4,545	,688	NS
KA-46	1	4,000		NS
KB-46	2	5,000	,000	NS
KC-46	8	4,750	,463	NS
KD-46	8	4,250	,707	NS
KF-46	4	4,750	,500	NS
VA-46	4	5,000	,000	NS
VB-46	13	4,692	,480	NS
VC-46	21	4,667	,577	NS
VD-46	21	4,619	,590	NS
VE-46	26	4,538	,582	NS
VF-46	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-47	1	5,000		NS
HLB-47	5	5,200	,447	NS
HLC-47	20	4,400	,883	NS
HLD-47	11	4,182	,603	NS
HLE-47	6	4,667	,516	NS
HLF-47	4	4,750	,500	NS
HMA-47	13	4,385	,768	NS
HMB-47	21	4,571	,676	NS
HMC-47	5	4,400	,548	NS
HMD-47	9	4,778	,667	NS
HME-47	11	4,364	,809	NS
HMF-47	11	4,182	,874	NS
KA-47	1	4,000		NS
KB-47	2	4,500	,707	NS
KC-47	8	4,000	1,069	NS
KD-47	8	3,750	1,282	NS
KF-47	4	4,250	,500	NS
VA-47	4	4,750	,500	NS
VB-47	13	4,385	,870	NS
VC-47	21	4,238	,889	NS
VD-47	20	4,050	,945	NS
VE-47	25	4,200	,764	NS
VF-47	2	4,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-48	1	5,000		NS
HLB-48	5	4,000	1,000	NS
HLC-48	21	4,095	,700	NS

HLD-48	11	4,182	,751	NS
HLE-48	6	4,333	,816	NS
HLF-48	4	4,250	1,500	NS
HMA-48	13	3,846	1,068	NS
HMB-48	20	3,950	,826	NS
HMC-48	5	4,400	,548	NS
HMD-48	9	4,222	,833	NS
HME-48	11	4,091	,831	NS
HMF-48	11	3,909	,539	NS
KB-48	2	4,500	,707	NS
KC-48	8	4,250	,707	NS
KD-48	8	3,750	,463	NS
KF-48	4	4,500	,577	NS
VA-48	4	4,750	,500	NS
VB-48	13	4,462	,660	NS
VC-48	21	4,238	,700	NS
VD-48	21	4,190	,750	NS
VE-48	26	4,346	,745	NS
VF-48	2	4,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-49	1	2,000		NS
HLB-49	4	2,500	1,000	NS
HLC-49	16	2,688	1,078	NS
HLD-49	8	2,750	1,282	NS
HLE-49	6	2,833	,983	NS
HLF-49	3	2,333	,577	NS
HMA-49	8	2,875	1,126	NS
HMB-49	15	2,733	1,223	NS
HMC-49	4	2,500	1,000	NS
HMD-49	6	3,333	1,506	NS
HME-49	8	2,250	,463	NS
HMF-49	8	2,750	1,035	NS
KA-49	1	3,000		NS
KB-49	1	3,000		NS
KC-49	5	2,800	,837	NS
KD-49	8	2,625	,744	NS
KF-49	4	2,500	,577	NS
VA-49	3	3,000	1,000	NS
VB-49	11	2,455	,934	NS
VC-49	14	3,000	,877	NS
VD-49	20	2,800	,696	NS
VE-49	16	3,063	,929	NS
VF-49	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-50	1	2,000		NS
HLB-50	3	4,000	1,000	NS
HLC-50	15	2,933	,799	NS
HLD-50	7	2,714	,951	NS
HLE-50	6	2,833	,983	NS
HLF-50	4	3,000	1,155	NS
HMA-50	11	3,364	1,120	NS
HMB-50	14	3,143	1,406	NS

HMC-50	5	2,800	1,304	NS
HMD-50	6	4,000	1,549	NS
HME-50	9	3,778	,972	NS
HMF-50	7	3,143	1,069	NS
KA-50	1	3,000		NS
KB-50	1	3,000		NS
KC-50	5	2,800	,837	NS
KD-50	8	2,625	,518	NS
KF-50	2	3,000	,000	NS
VA-50	2	2,500	,707	NS
VB-50	9	2,889	1,054	NS
VC-50	12	2,583	,793	NS
VD-50	17	2,647	1,115	NS
VE-50	15	3,000	1,309	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-51	1	3,000		NS
HLB-51	2	2,500	,707	NS
HLC-51	11	2,727	1,191	NS
HLD-51	2	3,500	2,121	NS
HLE-51	4	2,500	1,291	NS
HLF-51	3	3,333	1,528	NS
HMA-51	11	3,091	1,221	NS
HMB-51	15	2,733	1,223	NS
HMC-51	3	4,333	,577	NS
HMD-51	8	3,375	1,188	NS
HME-51	9	3,556	1,333	NS
HMF-51	10	3,000	1,247	NS
KA-51	1	5,000		NS
KB-51	2	4,000	,000	NS
KC-51	7	3,571	,976	NS
KD-51	7	2,714	1,254	NS
KF-51	3	4,000	,000	NS
VA-51	1	3,000		NS
VB-51	7	2,714	,756	NS
VC-51	12	2,500	,674	NS
VD-51	10	2,100	,316	NS
VE-51	14	2,500	,519	NS
VF-51	1	3,000		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-52	1	4,000		NS
HLB-52	5	3,200	1,643	NS
HLC-52	20	3,950	1,050	NS
HLD-52	8	3,500	1,195	NS
HLE-52	5	3,600	1,517	NS
HLF-52	4	3,250	1,708	NS
HMA-52	12	2,917	1,443	NS
HMB-52	19	2,842	1,385	NS
HMC-52	4	4,000	,816	NS
HMD-52	9	3,556	1,130	NS
HME-52	10	2,600	1,578	NS
HMF-52	11	3,636	1,362	NS
KA-52	1	3,000		NS

KB-52	2	4,000	1,414	NS
KC-52	7	3,286	,951	NS
KD-52	8	2,750	,886	NS
KF-52	4	2,500	1,291	NS
VA-52	4	3,500	1,291	NS
VB-52	12	3,333	1,435	NS
VC-52	20	3,800	1,056	NS
VD-52	20	2,950	1,317	NS
VE-52	22	3,909	1,109	NS
VF-52	2	3,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-53	1	5,000		NS
HLB-53	5	4,000	,707	NS
HLC-53	22	4,000	1,309	NS
HLD-53	9	4,333	,707	NS
HLE-53	6	3,000	1,414	NS
HLF-53	4	4,000	1,414	NS
HMA-53	13	3,385	1,261	NS
HMB-53	20	3,750	1,482	NS
HMC-53	5	4,600	,548	NS
HMD-53	9	3,111	1,453	NS
HME-53	10	3,400	1,506	NS
HMF-53	9	4,222	1,093	NS
KA-53	1	4,000		NS
KB-53	2	4,000	1,414	NS
KC-53	8	4,250	,463	NS
KD-53	8	3,125	1,553	NS
KF-53	3	3,000	1,732	NS
VA-53	4	5,000	,000	NS
VB-53	13	4,538	,660	NS
VC-53	20	4,150	1,040	NS
VD-53	20	3,750	1,118	NS
VE-53	22	3,636	1,255	NS
VF-53	2	4,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-54	1	2,000		NS
HLB-54	5	1,200	,447	NS
HLC-54	20	1,600	,503	NS
HLD-54	11	1,455	,522	NS
HLE-54	6	1,500	,548	NS
HLF-54	4	1,500	,577	NS
VA-54	4	1,000	,000	NS
VB-54	12	1,000	,000	NS
VC-54	21	1,238	,436	NS
VD-54	21	1,333	,483	NS
VE-54	25	1,160	,374	NS
VF-54	2	1,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HL-54a	1	1,000		NS
HLB-54a	1	4,000	1,789	NS
HLC-54a	13	2,231	1,342	NS

HLD-54a	4	2,000	,527	NS
HLE-54a	2	1,500	,753	NS
HLF-54a	2	3,000	,577	NS
VB-54a	1	3,000	1,498	NS
VC-54a	4	2,500	1,424	NS
VD-54a	8	2,625	1,643	NS
VE-54a	5	2,600	1,323	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-55	1	2,000		NS
HLB-55	5	1,200	,707	NS
HLC-55	21	1,667	,744	NS
HLD-55	11	1,545	,535	NS
HLE-55	6	1,500	,500	NS
HLF-55	4	2,000	1,732	NS
VA-55	4	2,000	,899	NS
VB-55	13	1,615	1,191	NS
VC-55	21	1,571	1,361	NS
VD-55	19	1,684	1,334	NS
VE-55	26	1,577	,000	NS
VF-55	2	1,500		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-55a	1	1,000		NS
HLB-55a	1	3,000		NS
HLC-55a	12	1,417		NS
HLD-55a	5	2,600		NS
HLE-55a	2	1,500		NS
HLF-55a	2	1,000		NS
VA-55a	2	1,500		NS
VB-55a	6	1,333		NS
VC-55a	10	1,600		NS
VD-55a	13	1,385		NS
VE-55a	14	2,000		NS
VF-55a	1	3,000		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-56	1	4,000		NS
HLB-56	5	3,200	1,789	NS
HLC-56	20	3,700	1,342	NS
HLD-56	9	4,556	,527	NS
HLE-56	6	3,833	,753	NS
HLF-56	4	4,500	,577	NS
HMA-56	13	4,077	1,498	NS
HMB-56	20	3,650	1,424	NS
HMC-56	5	3,200	1,643	NS
HMD-56	9	4,000	1,323	NS
HME-56	11	3,636	1,362	NS
HMF-56	10	3,400	1,265	NS
KA-56	1	5,000		NS
KB-56	2	2,500	,707	NS
KC-56	8	4,375	,744	NS
KD-56	8	4,500	,535	NS
KF-56	4	4,750	,500	NS

VA-56	4	3,500	1,732	NS
VB-56	13	4,154	,899	NS
VC-56	20	3,950	1,191	NS
VD-56	20	3,800	1,361	NS
VE-56	24	4,042	1,334	NS
VF-56	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-57	1	5,000		NS
HLB-57	5	3,800	1,304	NS
HLC-57	22	4,273	,827	NS
HLD-57	11	3,636	1,433	NS
HLE-57	6	3,667	1,033	NS
HLF-57	4	3,750	1,893	NS
HMA-57	13	2,692	1,377	NS
HMB-57	21	3,190	1,569	NS
HMC-57	5	3,200	1,789	NS
HMD-57	9	2,111	1,167	NS
HME-57	11	2,636	1,748	NS
HMF-57	11	3,818	1,250	NS
KA-57	1	2,000		NS
KB-57	2	1,500	,707	NS
KC-57	8	2,750	1,282	NS
KD-57	8	3,500	1,309	NS
KF-57	3	2,667	2,082	NS
VA-57	4	3,500	1,291	NS
VB-57	13	3,692	1,601	NS
VC-57	20	3,450	1,317	NS
VD-57	19	3,474	1,349	NS
VE-57	24	3,875	1,227	NS
VF-57	2	4,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-58	1	1,000		NS
HLB-58	5	1,600	,894	NS
HLC-58	21	3,286	1,554	NS
HLD-58	11	3,182	1,537	NS
HLE-58	6	2,333	1,751	NS
HLF-58	4	2,000	2,000	NS
HMA-58	13	1,462	,660	NS
HMB-58	21	2,476	1,806	NS
HMC-58	5	1,800	1,095	NS
HMD-58	9	1,667	1,118	NS
HME-58	11	2,000	1,612	NS
HMF-58	11	2,455	1,635	NS
KA-58	1	1,000		NS
KB-58	2	1,000	,000	NS
KC-58	8	2,625	1,768	NS
KD-58	8	2,125	1,458	NS
KF-58	4	2,000	2,000	NS
VA-58	4	2,500	1,915	NS
VB-58	12	2,833	1,642	NS
VC-58	20	2,800	1,576	NS
VD-58	20	2,450	1,605	NS

VE-58	26	2,846	1,666	NS
VF-58	2	3,500	2,121	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-59	1	1,000		NS
HLB-59	5	1,800	,837	NS
HLC-59	22	3,000	1,543	NS
HLD-59	11	3,182	1,662	NS
HLE-59	6	2,333	1,751	NS
HLF-59	4	3,000	1,826	NS
HMA-59	13	1,769	1,092	NS
HMB-59	21	2,143	1,652	NS
HMC-59	5	2,000	1,225	NS
HMD-59	9	2,111	1,691	NS
HME-59	11	1,909	1,578	NS
HMF-59	11	2,182	1,662	NS
KA-59	1	2,000		NS
KB-59	2	1,000	,000	NS
KC-59	8	2,375	1,408	NS
KD-59	8	2,250	1,389	NS
KF-59	4	2,000	2,000	NS
VA-59	4	2,000	2,000	NS
VB-59	13	2,385	1,710	NS
VC-59	20	2,500	1,395	NS
VD-59	21	1,810	1,250	NS
VE-59	26	2,385	1,627	NS
VF-59	2	2,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-60	1	1,000		NS
HLB-60	5	1,800	1,095	NS
HLC-60	22	1,955	1,174	NS
HLD-60	11	1,636	1,027	NS
HLE-60	6	1,333	,816	NS
HLF-60	4	1,500	,577	NS
HMA-60	13	1,385	,768	NS
HMB-60	21	1,810	1,209	NS
HMC-60	5	1,600	,894	NS
HMD-60	9	1,889	1,537	NS
HME-60	11	1,636	1,027	NS
HMF-60	11	1,636	,924	NS
KA-60	1	4,000		NS
KB-60	2	1,000	,000	NS
KC-60	8	1,750	,707	NS
KD-60	8	2,250	1,035	NS
KF-60	4	1,250	,500	NS
VA-60	4	2,500	,650	NS
VB-60	13	1,385	1,071	NS
VC-60	21	1,619	1,118	NS
VD-60	20	1,750	1,458	NS
VE-60	26	1,942	2,121	NS
VF-60	2	2,500		NS

Question	N Valid	Mean	Std. Dev.	P
----------	---------	------	-----------	---

HLA-61	1	1,000		NS
HLB-61	5	2,800	1,789	NS
HLC-61	22	1,864	1,390	NS
HLD-61	11	2,273	1,348	NS
HLE-61	6	1,667	1,633	NS
HLF-61	4	2,500	1,915	NS
HMA-61	13	2,731	1,691	NS
HMB-61	21	2,571	1,660	NS
HMC-61	4	2,500	1,732	NS
HMD-61	8	2,000	1,604	NS
HME-61	11	2,455	1,809	NS
HMF-61	11	2,364	1,912	NS
KA-61	1	2,000		NS
KB-61	2	1,000	,000	NS
KC-61	8	2,250	1,035	NS
KD-61	8	2,250	1,389	NS
KF-61	4	1,500	1,000	NS
VA-61	4	1,000	,000	NS
VB-61	14	2,071	1,639	NS
VC-61	20	2,000	1,298	NS
VD-61	21	1,571	1,165	NS
VE-61	25	1,640	1,114	NS
VF-61	2	2,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-62	1	2,000		NS
HLB-62	5	4,600	,548	NS
HLC-62	22	4,182	1,006	NS
HLD-62	11	4,182	,874	NS
HLE-62	6	3,500	1,225	NS
HLF-62	4	4,500	,577	NS
HMA-62	13	3,462	1,450	NS
HMB-62	21	3,571	1,630	NS
HMC-62	5	4,400	,894	NS
HMD-62	9	3,222	1,716	NS
HME-62	12	3,667	1,557	NS
HMF-62	10	3,500	1,509	NS
KA-62	1	4,000		NS
KB-62	2	2,500	2,121	NS
KC-62	8	4,250	1,389	NS
KD-62	8	3,125	1,808	NS
KF-62	4	4,000	1,414	NS
VA-62	4	2,500	1,732	NS
VB-62	13	3,692	1,494	NS
VC-62	21	4,048	1,203	NS
VD-62	21	3,905	1,044	NS
VE-62	26	3,038	1,661	NS
VF-62	2	4,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-63	1	5,000		NS
HLB-63	4	4,750	,500	NS
HLC-63	20	4,800	,410	NS
HLD-63	10	4,900	,316	NS

HLE-63	5	3,600	1,140	NS
HLF-63	3	4,667	,577	NS
HMA-63	12	4,083	1,084	NS
HMB-63	19	4,421	1,121	NS
HMC-63	5	4,200	1,095	NS
HMD-63	9	4,778	,441	NS
HME-63	11	4,455	1,214	NS
HMF-63	11	4,909	,302	NS
KA-63	1	5,000		NS
KB-63	2	4,500	,707	NS
KC-63	8	4,625	,518	NS
KD-63	8	4,000	,926	NS
KF-63	4	4,750	,500	NS
VA-63	3	4,667	,577	NS
VB-63	10	4,800	,422	NS
VC-63	16	4,688	,479	NS
VD-63	18	4,333	1,029	NS
VE-63	23	4,739	,541	NS
VF-63	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-64	1	480,000		NS
HLB-64	4	240,000	321,248	NS
HLC-64	19	321,316	207,444	NS
HLD-64	7	308,571	106,369	NS
HLE-64	6	205,000	66,858	NS
HLF-64	4	442,500	228,965	NS
HMA-64	13	70,000	57,228	NS
HMB-64	18	58,333	26,844	NS
HMC-64	4	33,750	7,500	NS
HMD-64	9	68,333	48,348	NS
HME-64	11	51,818	18,203	NS
HMF-64	11	43,636	15,667	NS
KA-64	1	20,000		NS
KB-64	2	22,500	10,607	NS
KC-64	7	51,429	33,381	NS
KD-64	7	41,429	14,639	NS
KF-64	4	45,000	17,321	NS
VA-64	3	260,000	295,973	NS
VB-64	10	300,000	90,554	NS
VC-64	19	251,053	157,864	NS
VD-64	18	215,000	138,150	NS
VE-64	23	186,522	119,985	NS
VF-64	2	240,000	169,706	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-65	1	1,000		NS
HLB-65	4	2,500	,577	NS
HLC-65	15	2,733	1,100	NS
HLD-65	4	2,250	,957	NS
HLE-65	6	2,833	,408	NS
HLF-65	4	3,000	1,633	NS
VA-65	2	3,500	,707	NS
VB-65	9	2,444	1,424	NS

VC-65	17	2,647	,702	NS
VD-65	18	2,278	,826	NS
VE-65	18	2,722	1,274	NS
VF-65	1	3,000		NS

Question	N Valid	Mean	Std. Dev.	P
HLA-66	1	1,000		NS
HLB-66	4	1,500	,577	NS
HLC-66	17	1,529	,800	NS
HLD-66	6	1,167	,408	NS
HLE-66	6	1,833	,983	NS
HLF-66	4	2,000	,816	NS
VA-66	3	2,000	1,732	NS
VB-66	11	1,545	,688	NS
VC-66	18	2,500	1,043	NS
VD-66	18	1,944	,802	NS
VE-66	18	1,722	,752	NS
VF-66	2	2,000	1,414	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-67	1	2,000		NS
HLB-67	5	3,400	1,140	NS
HLC-67	19	3,053	1,079	NS
HLD-67	6	2,333	,816	NS
HLE-67	5	3,200	1,095	NS
HLF-67	4	3,250	1,258	NS
VA-67	4	1,750	,957	NS
VB-67	11	1,818	,982	NS
VC-67	19	2,105	,875	NS
VD-67	20	2,150	,933	NS
VE-67	22	2,318	,995	NS
VF-67	2	2,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-68	1	5,000		NS
HLB-68	5	4,200	1,304	NS
HLC-68	20	3,950	1,395	NS
HLD-68	9	4,889	,333	NS
HLE-68	5	3,200	1,643	NS
HLF-68	4	3,500	1,732	NS
HMA-68	10	2,800	1,229	NS
HMB-68	19	3,421	1,742	NS
HMC-68	3	5,000	,000	NS
HMD-68	9	2,000	,500	NS
HME-68	11	2,364	,924	NS
HMF-68	10	3,400	1,713	NS
KA-68	1	1,000		NS
KB-68	2	3,500	2,121	NS
KC-68	8	4,000	1,414	NS
KD-68	8	3,250	1,488	NS
KF-68	4	3,500	1,732	NS
VA-68	4	4,500	1,000	NS
VB-68	13	3,923	1,441	NS
VC-68	19	4,526	1,020	NS

VD-68	20	3,800	1,436	NS
VE-68	24	3,833	1,465	NS
VF-68	2	5,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-69	1	2,000		NS
HLB-69	4	2,000	,000	NS
HLC-69	17	2,176	,951	NS
HLD-69	8	2,375	1,061	NS
HLE-69	3	2,667	1,155	NS
HLF-69	2	2,000	,000	NS
HMA-69	9	1,889	,601	NS
HMB-69	17	1,941	,659	NS
HMC-69	4	1,500	,577	NS
HMD-69	8	2,000	,535	NS
HME-69	8	2,500	1,069	NS
HMF-69	7	2,571	,976	NS
KA-69	1	2,000		NS
KB-69	2	2,000	,000	NS
KC-69	7	2,286	,756	NS
KD-69	7	2,286	,756	NS
KF-69	2	2,000	,000	NS
VA-69	3	2,000	,000	NS
VB-69	10	1,800	,919	NS
VC-69	17	2,000	,612	NS
VD-69	15	2,200	,775	NS
VE-69	20	2,150	1,089	NS
VF-69	2	1,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-70	1	1,000		NS
HLB-70	4	1,500	1,000	NS
HLC-70	16	2,063	1,482	NS
HLD-70	9	2,333	1,225	NS
HLE-70	3	1,333	,577	NS
HLF-70	3	2,333	1,155	NS
HMA-70	11	2,455	1,293	NS
HMB-70	12	2,583	1,165	NS
HMC-70	3	1,333	,577	NS
HMD-70	8	2,500	1,069	NS
HME-70	8	2,125	,991	NS
HMF-70	5	2,800	1,095	NS
KA-70	1	4,000		NS
KB-70	2	1,500	,707	NS
KC-70	4	3,250	,500	NS
KD-70	8	1,750	1,035	NS
KF-70	2	2,000	1,414	NS
VA-70	4	1,500	,577	NS
VB-70	9	2,222	,833	NS
VC-70	14	2,357	,842	NS
VD-70	15	2,200	1,014	NS
VE-70	21	2,238	,944	NS
VF-70	2	3,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLB-73	5	1,200	,447	NS
HLC-73	17	1,176	,393	NS
HLD-73	7	1,286	,488	NS
HLE-73	4	1,500	,577	NS
HLF-73	3	1,333	,577	NS
VA-73	4	1,500	,577	NS
VB-73	13	1,462	,519	NS
VC-73	20	1,200	,523	NS
VD-73	18	1,222	,548	NS
VE-73	25	1,520	,586	NS
VF-73	2	1,000	,000	NS

Question	N Valid	Mean	Std. Dev.	P
HLA-74	1	5,000		NS
HLB-74	5	4,400	,548	NS
HLC-74	20	4,450	,605	NS
HLD-74	10	4,500	,972	NS
HLE-74	6	4,833	,408	NS
HLF-74	4	4,250	,957	NS
HMA-74	13	4,462	,660	NS
HMB-74	21	4,381	,921	NS
HMC-74	5	4,200	,837	NS
HMD-74	9	3,889	1,269	NS
HME-74	11	4,182	,982	NS
HMF-74	11	4,091	,701	NS
KA-74	1	4,000		NS
KB-74	2	4,500	,707	NS
KC-74	8	4,125	,641	NS
KD-74	8	4,125	,991	NS
KF-74	4	4,000	,816	NS
VA-74	4	5,000	,000	NS
VB-74	13	4,308	,855	NS
VC-74	21	3,810	1,123	NS
VD-74	21	4,429	,676	NS
VE-74	25	4,400	,764	NS
VF-74	2	4,500	,707	NS

Question	N Valid	Mean	Std. Dev.	P
HLB-75	5	2,000	1,414	NS
HLC-75	22	2,182	1,259	NS
HLD-75	9	2,222	1,641	NS
HLE-75	6	2,333	1,033	NS
HLF-75	4	2,500	1,291	NS
VA-75	4	2,250	,957	NS
VB-75	13	2,231	1,166	NS
VC-75	20	1,850	1,182	NS
VD-75	19	2,316	,946	NS
VE-75	23	2,348	,832	NS
VF-75	2	2,500	,707	NS

ANOVA Table for Tests by Benefit Group/Forest

All tests for normality failed

Kruskal-Wallis One Way Analysis of Variance on Ranks

Post hoc test Dunn's Method for pairwise comparison

Question	N Valid	Mean	Std. Dev.	P
18AHL	5	4,800	,447	NS
18AHM	20	4,050	,945	NS
18AK	3	4,667	,577	NS
18AV	11	4,455	1,036	NS
18LHL	22	4,318	,894	NS
18LHM	39	3,923	,870	NS
18LK	13	4,308	,947	NS
18LV	35	4,200	,759	NS
18NHL	16	4,625	,719	NS
18NHM	21	3,762	,944	NS
18NK	3	4,000	1,000	NS
18NV	20	4,150	,933	NS
18PHL	13	4,385	1,044	NS
18PHM	43	3,767	,841	NS
18PK	10	4,200	1,135	NS
18PV	25	4,200	,816	NS
18RHL	37	4,324	,884	NS
18RHM	69	3,855	,912	NS
18RK	18	4,333	,907	NS
18RV	69	4,130	,821	NS
18SBHL	43	4,349	,870	NS
18SBHM	55	3,855	,870	NS
18SBK	19	4,211	,918	NS
18SBV	79	4,139	,780	NS
18SPHL	30	4,333	,884	NS
18SPHM	51	3,804	,939	NS
18SPK	12	4,417	,669	NS
18SPV	49	4,102	,872	NS

Question	N Valid	Mean	Std. Dev.	P
19AHL	5	4,800	,447	NS
19AHM	20	4,050	,999	NS
19AK	3	4,000	,000	NS
19AV	11	4,455	,688	NS
19LHL	22	4,205	,797	NS
19LHM	38	3,921	,850	NS
19LK	13	4,000	,816	NS
19LV	35	4,343	,591	NS
19NHL	16	4,469	,806	NS
19NHM	21	3,619	1,071	NS
19NK	3	3,667	,577	NS
19NV	20	4,200	,696	NS
19PHL	13	4,538	,660	NS
19PHM	42	3,810	,833	NS
19PK	10	4,100	,994	NS
19PV	25	4,280	,542	NS

19RHL	37	4,338	,708 NS
19RHM	68	3,824	,945 NS
19RK	18	4,167	,786 NS
19RV	70	4,257	,736 NS
19SBHL	43	4,337	,746 NS
19SBHM	54	3,852	,878 NS
19SBK	19	4,158	,765 NS
19SBV	79	4,291	,644 NS
19SPHL	30	4,350	,756 NS
19SPHM	51	3,725	1,078 NS
19SPK	12	4,083	,515 NS
19SPV	49	4,286	,707 NS

Question	N Valid	Mean	Std. Dev.	P
20AHL	5	3,800	1,304	NS
20AHM	19	3,000	1,247	NS
20AK	3	3,000	1,000	NS
20AV	11	3,091	,701	NS
20LHL	22	3,227	1,110	NS
20LHM	36	2,833	1,183	NS
20LK	12	3,333	1,073	NS
20LV	34	3,118	,769	NS
20NHL	16	3,813	1,167	NS
20NHM	19	3,158	1,167	NS
20NK	3	3,667	1,528	NS
20NV	20	3,050	,759	NS
20PHL	13	3,692	1,182	NS
20PHM	36	2,833	1,108	NS
20PK	10	3,600	1,075	NS
20PV	25	3,080	,759	NS
20RHL	37	3,351	1,060	NS
20RHM	61	2,902	1,091	NS
20RK	18	3,500	,985	NS
20RV	67	3,060	,833	NS
20SBHL	43	3,419	1,139	NS
20SBHM	49	2,980	1,070	NS
20SBK	18	3,444	,984	NS
20SBV	76	3,066	,914	NS
20SPHL	30	3,567	1,165	NS
20SPHM	45	2,800	1,100	NS
20SPK	12	3,333	,985	NS
20SPV	47	3,149	,859	NS

Question	N Valid	Mean	Std. Dev.	P
21AHL	5	4,800	,447	NS
21AHM	19	3,711	1,097	P< 0.05
21AK	3	4,000	1,000	NS
21AV	11	4,818	,405	NS
21LHL	22	4,500	,964	NS
21LHM	37	3,473	1,118	P< 0.05
21LK	13	4,231	1,013	NS
21LV	35	4,800	,473	NS
21NHL	16	4,938	,250	P< 0.05
21NHM	21	3,405	1,158	P< 0.05
21NK	3	4,000	1,000	NS
21NV	20	4,800	,523	P< 0.05

21PHL	13	4,692	,855 NS
21PHM	41	3,549	1,048 P< 0.05
21PK	10	4,200	1,033 NS
21PV	25	4,840	,473 P< 0.05
21RHL	37	4,649	,789 NS
21RHM	67	3,485	1,184 P< 0.05
21RK	18	4,389	,916 NS
21RV	70	4,886	,320 P< 0.05
21SBHL	43	4,698	,741 P< 0.05
21SBHM	53	3,453	1,170 P< 0.05
21SBK	19	4,316	,885 NS
21SBV	79	4,873	,371 P< 0.05
21SPHL	30	4,700	,794 P< 0.05
21SPHM	49	3,500	1,242 P< 0.05
21SPK	12	4,417	,793 NS
21SPV	49	4,837	,373 P< 0.05

Question	N Valid	Mean	Std. Dev.	P
22AHL	5	4,800	,447 NS	
22AV	11	4,364	,674 NS	
22LHL	22	4,455	,739 NS	
22LV	35	4,457	,657 NS	
22NHL	16	4,563	,629 NS	
22NV	20	4,350	,671 NS	
22PHL	13	4,615	,650 NS	
22PV	25	4,560	,583 NS	
22RHL	37	4,554	,643 NS	
22RV	70	4,386	,728 NS	
22SBHL	43	4,488	,768 NS	
22SBV	79	4,392	,706 NS	
22SPHL	30	4,500	,682 NS	
22SPV	49	4,571	,645 NS	

Question	N Valid	Mean	Std. Dev.	P
23AHL	5	5,000	,000 NS	
23AHM	20	4,350	,875 NS	
23AK	3	4,667	,577 NS	
23AV	11	5,000	,000 NS	
23LHL	22	4,818	,501 NS	
23LHM	39	4,308	,893 NS	
23LK	13	4,846	,376 NS	
23LV	35	4,743	,505 NS	
23NHL	16	4,813	,544 NS	
23NHM	21	4,286	1,007 NS	
23NK	3	4,667	,577 NS	
23NV	20	4,900	,308 NS	
23PHL	13	5,000	,000 NS	
23PHM	43	4,349	,813 NS	
23PK	10	4,800	,422 NS	
23PV	25	4,800	,500 NS	
23RHL	37	4,757	,683 NS	
23RHM	69	4,348	,855 NS	
23RK	18	4,778	,548 NS	
23RV	70	4,714	,515 NS	
23SBHL	43	4,767	,649 NS	
23SBHM	55	4,382	,828 NS	

23SBK	19	4,632	,684 NS
23SBV	79	4,671	,548 NS
23SPHL	30	4,733	,740 NS
23SPHM	51	4,255	,913 NS
23SPK	12	4,583	,669 NS
23SPV	49	4,673	,555 NS

Question	N Valid	Mean	Std. Dev.	P
24AHL	74	4,800	,447 NS	
24AHM	59	3,850	,988 P< 0.05	
24AK	76	4,000	1,000 NS	
24AV	68	4,909	,302 P< 0.05	
24LHL	57	4,455	,671 NS	
24LHM	40	3,692	1,127 P< 0.05	
24LK	66	4,308	,855 NS	
24LV	44	4,829	,382 P< 0.05	
24NHL	63	4,688	,602 NS	
24NHM	59	3,300	1,174 P< 0.05	
24NK	76	4,667	,577 NS	
24NV	59	5,000	,000 P< 0.05	
24PHL	66	4,769	,439 NS	
24PHM	36	3,721	1,182 P< 0.05	
24PK	69	4,600	,699 NS	
24PV	54	4,880	,332 P< 0.05	
24RHL	42	4,622	,639 NS	
24RHM	11	3,735	1,087 P< 0.05	
24RK	61	4,333	,840 NS	
24RV	9	4,814	,392 P< 0.05	
24SBHL	36	4,605	,660 NS	
24SBHM	24	3,709	1,165 P< 0.05	
24SBK	60	4,316	,820 NS	
24SBV	0	4,759	,486 NS	
24SPHL	49	4,567	,728 NS	
24SPHM	29	3,720	1,179 P< 0.05	
24SPK	67	4,083	,900 NS	
24SPV	30	4,816	,441 P< 0.05	

Question	N Valid	Mean	Std. Dev.	P
25AHL	78	4,200	1,095 NS	
25AV	72	4,545	,688 NS	
25LHL	61	3,636	1,002 NS	
25LV	48	4,343	,873 NS	
25NHL	67	3,938	,998 NS	
25NV	63	4,300	,923 NS	
25PHL	70	3,846	1,214 NS	
25PV	58	4,400	,764 NS	
25RHL	46	3,770	,990 NS	
25RV	13	4,200	,844 NS	
25SBHL	40	3,721	1,054 NS	
25SBV	4	4,215	,901 NS	
25SPHL	53	3,700	1,088 NS	
25SPV	34	4,327	,875 NS	

Question	N Valid	Mean	Std. Dev.	P
26AHL	5	4,200	,837 NS	

26AHM	19	3,368	1,012 NS
26AK	2	4,000	,000 NS
26AV	11	4,727	,467 P< 0.05
26LHL	22	3,955	,899 NS
26LHM	37	3,162	1,167 P< 0.05
26LK	12	4,250	,452 NS
26LV	35	4,229	,843 NS
26NHL	16	4,250	,775 NS
26NHM	20	3,400	,995 NS
26NK	2	4,500	,707 NS
26NV	20	4,600	,754 P< 0.05
26PHL	13	4,385	,768 NS
26PHM	38	3,289	1,113 P< 0.05
26PK	9	4,222	,441 NS
26PV	25	4,360	,700 NS
26RHL	37	4,149	,889 NS
26RHM	61	3,344	1,047 NS
26RK	18	4,111	,758 NS
26RV	70	4,243	,806 NS
26SBHL	43	4,233	,868 NS
26SBHM	50	3,380	1,028 NS
26SBK	19	4,053	,705 NS
26SBV	79	4,228	,800 NS
26SPHL	30	4,233	,858 NS
26SPHM	45	3,311	1,083 P< 0.05
26SPK	11	4,091	,831 NS
26SPV	49	4,347	,751 NS

Question	N Valid	Mean	Std. Dev.	P
27AHL	4	2,500	,577	NS
27AHM	19	2,842	1,015	NS
27AK	3	2,667	,577	NS
27AV	11	2,591	,801	NS
27LHL	19	2,842	,834	NS
27LHM	37	2,784	,976	NS
27LK	13	2,692	,751	NS
27LV	32	2,641	,785	NS
27NHL	15	2,867	,834	NS
27NHM	19	2,684	,885	NS
27NK	3	3,000	,000	NS
27NV	19	2,684	,885	NS
27PHL	12	2,833	,718	NS
27PHM	39	2,718	,857	NS
27PK	9	2,889	,601	NS
27PV	22	2,659	,836	NS
27RHL	35	2,886	,796	NS
27RHM	62	2,661	,904	NS
27RK	17	2,706	,686	NS
27RV	59	2,483	,676	NS
27SBHL	38	2,816	,766	NS
27SBHM	51	2,627	,916	NS
27SBK	18	2,667	,594	NS
27SBV	70	2,507	,673	NS
27SPHL	27	2,778	,801	NS
27SPHM	45	2,644	,802	NS
27SPK	12	2,583	,515	NS

27SPV	41	2,598	,768 NS
-------	----	-------	---------

Question	N Valid	Mean	Std. Dev.	P
28AHL	5	4,400	,894	NS
28AHM	20	3,700	1,031	NS
28AK	3	3,667	,577	NS
28AV	11	4,545	,688	NS
28LHL	22	4,136	,941	NS
28LHM	39	3,821	,970	NS
28LK	13	3,923	,641	NS
28LV	35	4,343	,765	NS
28NHL	16	4,563	,629	NS
28NHM	21	3,619	,973	NS
28NK	3	4,000	1,000	NS
28NV	20	4,250	,910	NS
28PHL	13	4,000	1,291	NS
28PHM	43	3,907	,921	NS
28PK	10	4,100	,568	NS
28PV	25	4,520	,653	NS
28RHL	37	4,243	,863	NS
28RHM	69	3,913	,996	NS
28RK	18	4,000	,686	NS
28RV	68	4,324	,701	NS
28SBHL	43	4,186	,906	NS
28SBHM	55	3,909	1,005	NS
28SBK	19	3,947	,621	NS
28SBV	78	4,269	,715	NS
28SPHL	30	4,133	1,008	NS
28SPHM	51	3,902	1,025	NS
28SPK	12	3,750	,622	NS
28SPV	48	4,292	,743	NS

Question	N Valid	Mean	Std. Dev.	P
29AHL	5	2,600	1,140	NS
29AHM	19	3,421	1,305	NS
29AK	3	3,000	,000	NS
29AV	11	3,273	1,104	NS
29LHL	19	2,842	,765	NS
29LHM	37	3,270	1,194	NS
29LK	12	2,917	,669	NS
29LV	31	3,129	,846	NS
29NHL	16	3,000	,894	NS
29NHM	17	3,353	1,115	NS
29NK	3	3,000	,000	NS
29NV	19	2,947	,970	NS
29PHL	13	3,077	1,188	NS
29PHM	38	3,184	1,111	NS
29PK	10	3,100	,568	NS
29PV	22	3,091	,921	NS
29RHL	35	2,986	,809	NS
29RHM	59	3,136	1,058	NS
29RK	17	2,941	,659	NS
29RV	58	2,931	,896	NS
29SBHL	38	2,974	,885	NS
29SBHM	49	3,204	1,099	NS
29SBK	17	2,882	,600	NS

29SBV	70	2,900	,950 NS
29SPHL	27	3,111	,892 NS
29SPHM	44	3,023	1,067 NS
29SPK	11	2,909	,539 NS
29SPV	39	3,051	,887 NS

Question	N Valid	Mean	Std. Dev.	P
30AHM	18	3,500	1,150 NS	
30AK	3	3,000	,000 NS	
30AV	11	3,545	1,036 NS	
30LHL	19	3,263	,653 NS	
30LHM	36	3,361	1,046 NS	
30LK	12	3,000	,739 NS	
30LV	31	3,516	,851 NS	
30NHM	15	3,533	,915 NS	
30NK	3	3,333	,577 NS	
30NV	19	3,263	,933 NS	
30PHM	38	3,316	,962 NS	
30PK	10	3,100	,568 NS	
30PV	22	3,409	1,008 NS	
30RHL	35	3,229	,808 NS	
30RHM	58	3,259	,965 NS	
30RK	17	3,000	,707 NS	
30RV	58	3,138	,945 NS	
30SBHL	38	3,184	,865 NS	
30SBHM	46	3,326	,967 NS	
30SBK	17	3,000	,707 NS	
30SBV	70	3,157	,973 NS	
30SPHL	27	3,296	,953 NS	
30SPHM	43	3,186	,982 NS	
30SPK	11	3,000	,632 NS	
30SPV	39	3,333	,927 NS	
31AHL	5	4,600	,548 NS	
31NHL	16	4,344	,598 NS	
31PHL	13	4,500	,500 NS	

Question	N Valid	Mean	Std. Dev.	P
32AHL	5	2,000	,000 NS	
32AHM	16	2,750	1,125 NS	
32AK	3	2,667	,577 NS	
32AV	11	2,000	,632 NS	
32LHL	20	2,150	,671 NS	
32LHM	35	2,343	1,136 NS	
32LV	31	2,097	,539 NS	
32NHL	16	2,313	,602 NS	
32NHM	16	2,375	1,088 NS	
32NK	3	2,667	,577 NS	
32NV	19	2,158	,602 NS	
32PHL	13	2,385	,650 NS	
32PHM	33	2,394	1,116 NS	
32PK	10	2,700	,483 NS	
32PV	22	2,045	,575 NS	
32RHL	36	2,167	,561 NS	
32RHM	55	2,255	1,022 NS	
32RK	15	2,467	,516 NS	
32RV	58	2,112	,585 NS	

32SBHL	38	2,211	,577 NS
32SBHM	43	2,349	1,089 NS
32SBK	16	2,438	,512 NS
32SBV	67	2,142	,602 NS
32SPHL	27	2,259	,656 NS
32SPHM	40	2,250	,954 NS
32SPK	11	2,545	,522 NS
32SPV	41	2,134	,559 NS

Question	N Valid	Mean	Std. Dev.	P
31AHL	5	4,600	,548 NS	
31AHM	19	3,895	1,150 NS	
31AK	3	4,000	,000 NS	
31AV	11	4,182	,982 NS	
31LHL	21	4,238	,625 NS	
31LHM	39	3,949	1,075 NS	
31LK	13	4,077	,494 NS	
31LV	34	4,029	,797 NS	
31NHL	16	4,344	,598 NS	
31NHM	19	3,737	,806 NS	
31NK	3	4,000	,000 NS	
31NV	19	3,842	,834 NS	
31PHL	13	4,500	,500 NS	
31PHM	43	3,930	1,055 NS	
31PK	10	4,200	,422 NS	
31PV	23	3,826	,887 NS	
31RHL	36	4,056	,630 NS	
31RHM	66	3,909	,956 NS	
31RK	18	4,167	,383 NS	
31RV	62	3,726	,890 NS	
31SBHL	42	4,131	,635 NS	
31SBHM	53	3,906	,986 NS	
31SBK	19	4,053	,405 NS	
31SBV	74	3,770	,837 NS	
31SPHL	28	4,196	,614 NS	
31SPHM	48	3,875	1,003 NS	
31SPK	12	4,000	,000 NS	
31SPV	43	3,814	,824 NS	

Question	N Valid	Mean	Std. Dev.	P
32AHL	5	2,000	,000 NS	
32AHM	16	2,750	1,125 NS	
32AK	3	2,667	,577 NS	
32AV	11	2,000	,632 NS	
32LHL	20	2,150	,671 NS	
32LHM	35	2,343	1,136 NS	
32LV	31	2,097	,539 NS	
32NHL	16	2,313	,602 NS	
32NHM	16	2,375	1,088 NS	
32NK	3	2,667	,577 NS	
32NV	19	2,158	,602 NS	
32PHL	13	2,385	,650 NS	
32PHM	33	2,394	1,116 NS	
32PK	10	2,700	,483 NS	
32PV	22	2,045	,575 NS	
32RHL	36	2,167	,561 NS	

32RHM	55	2,255	1,022 NS
32RK	15	2,467	,516 NS
32RV	58	2,112	,585 NS
32SBHL	38	2,211	,577 NS
32SBHM	43	2,349	1,089 NS
32SBK	16	2,438	,512 NS
32SBV	67	2,142	,602 NS
32SPHL	27	2,259	,656 NS
32SPHM	40	2,250	,954 NS
32SPK	11	2,545	,522 NS
32SPV	41	2,134	,559 NS

Question	N Valid	Mean	Std. Dev.	P
33AHM	19	4,053	,911 NS	
33AK	3	3,667	,577 NS	
33AV	11	3,545	1,128 NS	
33LHL	22	3,909	,971 NS	
33LHM	39	3,923	,900 NS	
33LK	13	3,692	,751 NS	
33LV	35	3,657	,838 NS	
33NHM	21	3,571	,926 NS	
33NK	3	3,333	,577 NS	
33NV	20	3,500	,889 NS	
33PHM	43	3,837	,871 NS	
33PK	10	3,800	,632 NS	
33PV	25	3,600	1,000 NS	
33RHM	68	3,765	,848 NS	
33RK	18	3,667	,840 NS	
33RV	67	3,537	,804 NS	
33SBHM	54	3,741	,851 NS	
33SBK	19	3,579	,769 NS	
33SBV	76	3,553	,790 NS	
33SPHM	50	3,720	,882 NS	
33SPK	12	3,417	,515 NS	
33SPV	47	3,511	,831 NS	

Question	N Valid	Mean	Std. Dev.	P
34AHL	5	4,600	,894 NS	
34AHM	20	3,900	,968 NS	
34AK	3	3,667	1,155 NS	
34AV	11	3,455	1,293 NS	
34LHL	22	4,273	,883 NS	
34LHM	39	3,615	,935 NS	
34LK	13	3,615	,961 NS	
34LV	32	3,656	1,004 NS	
34NHL	16	4,250	,683 NS	
34NHM	20	3,750	,851 NS	
34NK	3	3,667	1,155 NS	
34NV	19	3,579	1,017 NS	
34PHL	13	4,308	,751 NS	
34PHM	43	3,581	,906 NS	
34PK	10	3,600	,966 NS	
34PV	24	3,500	1,063 NS	
34RHL	37	4,216	,854 NS	
34RHM	67	3,642	,965 NS	
34RK	18	3,667	,907 NS	

34RV	64	3,547	1,053 NS
34SBHL	42	4,190	,833 NS
34SBHM	55	3,691	,940 NS
34SBK	19	3,579	,838 NS
34SBV	73	3,589	,998 NS
34SPHL	29	4,276	,751 NS
34SPHM	49	3,633	,972 NS
34SPK	12	3,500	,798 NS
34SPV	43	3,442	1,119 NS

Question	N Valid	Mean	Std. Dev.	P
35AHL	5	4,200	1,304	NS
35AHM	20	4,250	,851	NS
35AK	3	3,333	,577	NS
35AV	11	3,455	1,128	NS
35LHL	22	3,636	,953	NS
35LHM	39	3,872	1,056	NS
35LK	13	3,769	,599	NS
35LV	34	3,647	,849	NS
35NHL	16	3,813	,911	NS
35NHM	21	3,714	1,146	NS
35NK	3	3,333	,577	NS
35NV	20	3,550	,945	NS
35PHL	13	4,000	1,000	NS
35PHM	43	3,860	1,060	NS
35PK	10	3,800	,632	NS
35PV	24	3,417	,929	NS
35RHL	37	3,784	,976	NS
35RHM	69	3,812	1,033	NS
35RK	18	4,000	,594	NS
35RV	68	3,397	,813	NS
35SBHL	40	3,800	,911	NS
35SBHM	55	3,891	,975	NS
35SBK	19	3,895	,567	NS
35SBV	76	3,395	,818	NS
35SPHL	29	3,828	,889	NS
35SPHM	51	3,843	1,027	NS
35SPK	12	3,750	,622	NS
35SPV	47	3,404	,901	NS

Question	N Valid	Mean	Std. Dev.	P
36AHL	5	3,600	1,517	NS
36AHM	20	3,700	1,081	NS
36AK	3	2,667	,577	NS
36AV	11	3,364	1,286	NS
36LHL	21	3,571	,978	NS
36LHM	38	3,421	1,106	NS
36LK	13	3,692	,751	NS
36LV	35	3,486	,981	NS
36NHL	16	3,625	,885	NS
36NHM	19	3,421	1,170	NS
36NK	3	3,333	,577	NS
36NV	20	3,450	1,050	NS
36PHL	13	3,846	1,144	NS
36PHM	42	3,476	1,110	NS
36PK	10	3,700	,823	NS

36PV	24	3,375	1,013 NS
36RHL	37	3,716	,947 NS
36RHM	65	3,508	1,106 NS
36RK	18	3,722	,826 NS
36RV	67	3,299	,871 NS
36SBHL	40	3,725	,877 NS
36SBHM	53	3,434	1,083 NS
36SBK	19	3,737	,733 NS
36SBV	75	3,347	,878 NS
36SPHL	29	3,793	,861 NS
36SPHM	48	3,438	1,183 NS
36SPK	12	3,417	,669 NS
36SPV	46	3,435	,958 NS

Question	N Valid	Mean	Std. Dev.	P
37AHM	19	3,579	,769 NS	
37AK	2	3,000	,000 NS	
37AV	10	3,600	1,174 NS	
37LHL	19	3,474	,964 NS	
37LHM	37	3,432	1,015 NS	
37LK	12	3,667	,651 NS	
37LV	29	3,310	1,072 NS	
37NHM	18	3,500	,924 NS	
37NK	2	3,500	,707 NS	
37NV	18	3,500	,985 NS	
37PHM	40	3,300	,966 NS	
37PK	9	3,889	,782 NS	
37PV	23	3,304	1,020 NS	
37RHL	34	3,441	,927 NS	
37RHM	64	3,484	,959 NS	
37RK	18	3,944	,725 NS	
37RV	57	3,298	,906 NS	
37SBHL	38	3,395	,887 NS	
37SBHM	52	3,519	,852 NS	
37SBK	19	3,895	,737 NS	
37SBV	68	3,176	,913 NS	
37SPHL	27	3,481	,893 NS	
37SPHM	48	3,313	,949 NS	
37SPK	11	4,000	,632 NS	
37SPV	40	3,250	1,032 NS	
38AHL	4	4,000	1,414 NS	
38NHL	15	3,067	1,033 NS	
38PHL	12	3,083	1,165 NS	

Question	N Valid	Mean	Std. Dev.	P
38AHL	4	4,000	1,414 NS	
38AHM	18	3,111	1,132 NS	
38AK	2	2,500	,707 NS	
38AV	10	3,400	1,174 NS	
38LHL	18	2,944	,998 NS	
38LHM	36	3,028	1,183 NS	
38LK	11	3,091	,831 NS	
38LV	29	3,000	1,102 NS	
38NHL	15	3,067	1,033 NS	
38NHM	16	3,125	1,147 NS	

38NK	2	3,500	,707 NS
38NV	19	3,211	1,134 NS
38PHL	12	3,083	1,165 NS
38PHM	38	2,947	1,138 NS
38PK	9	3,111	1,054 NS
38PV	22	3,136	,990 NS
38RHL	31	3,065	,964 NS
38RHM	60	3,167	1,122 NS
38RK	17	3,412	,939 NS
38RV	58	2,983	,964 NS
38SBHL	34	2,971	,937 NS
38SBHM	49	3,245	1,011 NS
38SBK	19	3,421	,838 NS
38SBV	67	2,821	,952 NS
38SPHL	24	3,042	,955 NS
38SPHM	45	3,044	1,107 NS
38SPK	11	3,636	,809 NS
38SPV	39	3,128	,978 NS

Question	N Valid	Mean	Std. Dev.	P
39AHL	5	4,200	1,304	NS
39AHM	20	2,025	1,057	NS
39AK	3	2,333	,577	NS
39AV	10	3,300	1,418	NS
39LHL	19	3,053	1,224	NS
39LHM	39	1,885	,970	NS
39LK	12	2,083	,515	NS
39LV	32	2,625	1,040	NS
39NHL	14	2,857	1,099	NS
39NHM	21	2,119	1,024	NS
39NK	3	2,667	,577	NS
39NV	19	3,105	1,197	NS
39PHL	13	3,231	1,301	NS
39PHM	42	1,845	1,073	NS
39PK	9	2,111	,601	NS
39PV	24	3,250	1,189	NS
39RHL	34	2,882	1,122	NS
39RHM	67	1,903	,966	NS
39RK	17	1,882	,600	NS
39RV	67	2,612	,984	NS
39SBHL	38	2,737	1,032	NS
39SBHM	54	1,907	,976	NS
39SBK	19	1,895	,567	NS
39SBV	74	2,608	,977	NS
39SPHL	26	2,846	1,084	NS
39SPHM	49	1,827	,899	NS
39SPK	12	2,000	,603	NS
39SPV	46	2,587	1,024	NS

Question	N Valid	Mean	Std. Dev.	P
39AHL	5	4,200	1,304	NS
39AHM	20	2,025	1,057	NS
39AK	3	2,333	,577	NS
39AV	10	3,300	1,418	NS
39LHL	19	3,053	1,224	NS
39LHM	39	1,885	,970	NS

39LK	12	2,083	,515 NS
39LV	32	2,625	1,040 NS
39NHL	14	2,857	1,099 NS
39NHM	21	2,119	1,024 NS
39NK	3	2,667	,577 NS
39NV	19	3,105	1,197 NS
39PHL	13	3,231	1,301 NS
39PHM	42	1,845	1,073 NS
39PK	9	2,111	,601 NS
39PV	24	3,250	1,189 NS
39RHL	34	2,882	1,122 NS
39RHM	67	1,903	,966 NS
39RK	17	1,882	,600 NS
39RV	67	2,612	,984 NS
39SBHL	38	2,737	1,032 NS
39SBHM	54	1,907	,976 NS
39SBK	19	1,895	,567 NS
39SBV	74	2,608	,977 NS
39SPHL	26	2,846	1,084 NS
39SPHM	49	1,827	,899 NS
39SPK	12	2,000	,603 NS
39SPV	46	2,587	1,024 NS

Question	N Valid	Mean	Std. Dev.	P
40AHL	5	3,800	1,304	NS
40AV	11	4,727	,467	NS
40LHL	21	3,714	1,007	NS
40LV	35	4,343	,968	NS
40NHL	16	4,000	1,095	NS
40NV	20	4,500	,827	NS
40PHL	13	3,846	1,281	NS
40PV	25	4,480	,872	NS
40RHL	36	3,917	,967	NS
40RV	70	4,243	,908	NS
40SBHL	41	3,878	1,077	NS
40SBV	79	4,101	,995	NS
40SPHL	28	4,000	1,089	NS
40SPV	49	4,224	,985	NS

Question	N Valid	Mean	Std. Dev.	P
41AHL	5	4,400	,894	NS
41AHM	20	2,800	1,105	NS
41AK	3	2,667	,577	NS
41AV	11	4,273	,647	NS
41LHL	22	4,000	,756	NS
41LHM	38	2,711	1,113	NS
41LK	13	2,615	,650	NS
41LV	35	3,800	,994	NS
41NHL	15	4,333	,617	NS
41NHM	19	2,579	1,017	NS
41NK	3	2,667	,577	NS
41NV	20	4,150	,813	NS
41PHL	13	4,231	,725	NS
41PHM	41	2,756	1,113	NS
41PK	10	2,800	,789	NS
41PV	25	3,760	,879	NS

41RHL	36	4,056	,826 NS
41RHM	64	2,578	,973 NS
41RK	18	2,778	,732 NS
41RV	70	3,714	,919 NS
41SBHL	41	4,073	,755 NS
41SBHM	53	2,585	,989 NS
41SBK	19	2,684	,671 NS
41SBV	79	3,671	,944 NS
41SPHL	28	4,036	,744 NS
41SPHM	47	2,574	,950 NS
41SPK	12	2,583	,669 NS
41SPV	49	3,694	1,004 NS

Question	N Valid	Mean	Std. Dev.	P
42AHL	4	3,625	1,702	NS
42AHM	18	2,556	1,042	NS
42AK	3	2,667	1,155	NS
42AV	8	2,875	1,126	NS
42LHL	14	2,750	1,221	NS
42LHM	35	2,314	1,132	NS
42LK	12	2,333	,651	NS
42LV	31	2,484	,677	NS
42NHL	11	2,682	1,146	NS
42NHM	17	2,471	,943	NS
42NK	3	3,000	1,000	NS
42NV	17	2,765	,970	NS
42PHL	12	2,625	1,025	NS
42PHM	38	2,237	1,025	NS
42PK	9	2,444	,726	NS
42PV	21	2,476	,814	NS
42RHL	26	2,712	,982	NS
42RHM	60	2,317	,965	NS
42RK	16	2,375	,619	NS
42RV	61	2,525	,721	NS
42SBHL	30	2,583	,911	NS
42SBHM	48	2,438	,987	NS
42SBK	17	2,294	,588	NS
42SBV	71	2,465	,714	NS
42SPHL	20	2,575	,907	NS
42SPHM	42	2,214	,813	NS
42SPK	12	2,167	,937	NS
42SPV	43	2,465	,702	NS

Question	N Valid	Mean	Std. Dev.	P
43AHL	5	4,200	1,304	P< 0.05
43AHM	19	1,947	,911	P< 0.05
43AK	3	2,333	,577	NS
43AV	11	4,273	,786	P< 0.05
43LHL	20	3,300	1,218	P< 0.05
43LHM	38	1,789	,935	P< 0.05
43LK	12	2,000	,603	P< 0.05
43LV	35	3,886	,993	P< 0.05
43NHL	15	3,133	1,356	NS
43NHM	20	1,950	1,050	P< 0.05
43NK	3	2,333	,577	NS
43NV	20	4,250	,967	P< 0.05

43PHL	13	3,308	1,437 P< 0.05
43PHM	40	1,725	,784 P< 0.05
43PK	10	2,200	,422 NS
43PV	25	4,000	1,080 P< 0.05
43RHL	35	3,286	1,100 P< 0.05
43RHM	66	1,788	,851 P< 0.05
43RK	17	2,059	,659 P< 0.05
43RV	70	3,829	,992 P< 0.05
43SBHL	40	3,125	1,067 P< 0.05
43SBHM	52	1,865	,908 P< 0.05
43SBK	19	2,053	,621 P< 0.05
43SBV	78	3,782	,962 P< 0.05
43SPHL	27	3,037	1,160 NS
43SPHM	48	1,708	,651 P< 0.05
43SPK	12	2,083	,669 NS
43SPV	49	4,020	,924 P< 0.05

Question	N Valid	Mean	Std. Dev.	P
44AHL	4	2,750	,957	NS
44AV	10	3,000	,943	NS
44LHL	19	2,421	1,017	NS
44LV	32	2,969	1,121	NS
44NHL	16	2,688	1,078	NS
44NV	18	3,000	1,237	NS
44PHL	12	2,750	1,422	NS
44PV	22	2,864	1,082	NS
44RHL	33	2,545	1,034	NS
44RV	62	2,661	1,039	NS
44SBHL	36	2,750	1,131	NS
44SBV	71	2,704	1,113	NS
44SPHL	26	2,923	1,230	NS
44SPV	43	2,674	1,210	NS

Question	N Valid	Mean	Std. Dev.	P
45AHL	5	4,600	,894	NS
45AV	11	4,636	,809	NS
45LHL	22	4,227	,869	NS
45LV	35	4,400	,812	NS
45NHL	16	4,438	,727	NS
45NV	20	4,550	,686	NS
45PHL	13	4,154	1,214	NS
45PV	25	4,360	,810	NS
45RHL	37	4,270	,769	NS
45RV	70	4,314	,692	NS
45SBHL	42	4,167	,908	NS
45SBV	79	4,329	,729	NS
45SPHL	29	4,207	,940	NS
45SPV	49	4,347	,751	NS

Question	N Valid	Mean	Std. Dev.	P
46AHL	5	5,000	,000	NS
46AHM	20	4,700	,571	NS
46AK	3	4,667	,577	NS
46AV	11	4,818	,405	NS
46LHL	22	4,773	,429	NS
46LHM	39	4,692	,569	NS

46LK	13	4,538	,660 NS
46LV	35	4,800	,406 NS
46NHL	16	4,625	,619 NS
46NHM	21	4,571	,598 NS
46NK	3	4,667	,577 NS
46NV	20	4,750	,444 NS
46PHL	13	4,846	,376 NS
46PHM	43	4,628	,618 NS
46PK	10	4,600	,699 NS
46PV	25	4,720	,542 NS
46RHL	37	4,757	,495 NS
46RHM	69	4,710	,571 NS
46RK	18	4,667	,594 NS
46RV	70	4,657	,562 NS
46SBHL	42	4,738	,497 NS
46SBHM	55	4,673	,610 NS
46SBK	19	4,526	,612 NS
46SBV	79	4,658	,552 NS
46SPHL	29	4,759	,435 NS
46SPHM	51	4,745	,523 NS
46SPK	12	4,667	,492 NS
46SPV	49	4,653	,561 NS

Question	N Valid	Mean	Std. Dev.	P
47AHL	5	5,000	,000 NS	
47AHM	20	4,550	,686 NS	
47AK	3	3,667	,577 NS	
47AV	11	4,455	,934 NS	
47LHL	22	4,591	,590 NS	
47LHM	39	4,487	,644 NS	
47LK	13	4,077	,641 NS	
47LV	35	4,343	,765 NS	
47NHL	15	4,400	,828 NS	
47NHM	21	4,333	,730 NS	
47NK	3	4,000	1,000 NS	
47NV	20	4,400	,821 NS	
47PHL	12	4,583	,900 NS	
47PHM	43	4,442	,734 NS	
47PK	10	4,100	,738 NS	
47PV	24	4,375	,924 NS	
47RHL	36	4,500	,811 NS	
47RHM	69	4,449	,738 NS	
47RK	18	4,111	,832 NS	
47RV	68	4,250	,870 NS	
47SBHL	40	4,400	,778 NS	
47SBHM	55	4,436	,764 NS	
47SBK	19	3,895	1,049 NS	
47SBV	77	4,273	,821 NS	
47SPHL	27	4,444	,751 NS	
47SPHM	51	4,471	,731 NS	
47SPK	12	4,167	,577 NS	
47SPV	47	4,383	,739 NS	

Question	N Valid	Mean	Std. Dev.	P
48AHL	5	4,000	1,000 NS	
48AHM	20	4,150	,813 NS	

48AV	11	4,545	,688 NS
48LHL	22	4,091	,811 NS
48LHM	39	4,026	,903 NS
48LV	35	4,400	,695 NS
48NHL	16	4,313	,793 NS
48NHM	20	3,900	,718 NS
48NV	20	4,400	,681 NS
48PHL	13	4,077	,862 NS
48PHM	43	3,977	,963 NS
48PV	25	4,440	,712 NS
48RHL	37	4,189	,845 NS
48RHM	68	4,029	,828 NS
48RV	70	4,357	,682 NS
48SBHL	42	4,214	,842 NS
48SBHM	55	4,055	,756 NS
48SBV	79	4,329	,729 NS
48SPHL	29	4,345	,721 NS
48SPHM	50	3,980	,869 NS
48SPV	49	4,367	,755 NS
48TK	18	4,167	,618 NS
48TK	12	4,083	,515 NS
48TK	19	4,105	,658 NS
48TK	12	3,917	1,311 NS
48TK	2	5,000	,000 NS
48TK	9	4,444	,726 NS
48TK	2	4,500	,707 NS

Question	N Valid	Mean	Std. Dev.	P
49AHL	4	2,000	1,633	NS
49AHM	14	2,929	1,328	NS
49AK	3	3,000	,000	NS
49AV	9	3,222	,972	NS
49LHL	17	2,529	,943	NS
49LHM	29	2,862	1,156	NS
49LK	11	2,909	,701	NS
49LV	25	3,080	,909	NS
49NHL	16	2,438	1,632	NS
49NHM	13	2,615	1,193	NS
49NK	3	3,333	,577	NS
49NV	17	3,000	,866	NS
49PHL	12	2,917	1,165	NS
49PHM	30	2,833	1,117	NS
49PK	9	3,000	,707	NS
49PV	19	3,053	,970	NS
49RHL	31	2,710	1,039	NS
49RHM	48	2,771	1,115	NS
49RK	15	2,733	,704	NS
49RV	53	2,849	,841	NS
49SBHL	33	2,727	1,008	NS
49SBHM	38	2,763	1,101	NS
49SBK	17	2,647	,702	NS
49SBV	59	2,881	,853	NS
49SPHL	25	2,720	,980	NS
49SPHM	32	2,719	1,114	NS
49SPK	12	2,750	,622	NS
49SPV	40	2,875	,822	NS

Question	N Valid	Mean	Std. Dev.	P
50AHL	5	3,000	1,000	NS
50AHM	14	3,857	1,167	NS
50AK	3	3,000	,000	NS
50AV	6	3,667	1,033	NS
50LHL	17	3,118	,993	NS
50LHM	30	3,433	1,194	NS
50LK	10	2,800	,422	NS
50LV	22	3,182	1,097	NS
50NHL	16	2,688	1,401	NS
50NHM	17	3,294	1,359	NS
50NK	3	3,000	,000	NS
50NV	13	3,000	1,080	NS
50PHL	12	3,333	,985	NS
50PHM	35	3,457	1,197	NS
50PK	8	3,000	,000	NS
50PV	15	3,267	1,223	NS
50RHL	31	2,935	,964	NS
50RHM	53	3,358	1,226	NS
50RK	13	2,692	,480	NS
50RV	42	2,714	1,043	NS
50SBHL	34	3,029	,969	NS
50SBHM	41	3,415	1,224	NS
50SBK	15	2,733	,594	NS
50SBV	49	2,796	1,118	NS
50SPHL	25	3,000	1,041	NS
50SPHM	36	3,472	1,253	NS
50SPK	10	2,800	,632	NS
50SPV	33	2,818	1,158	NS

Question	N Valid	Mean	Std. Dev.	P
51AHL	2	5,000	,000	NS
51AHM	18	3,000	1,328	NS
51AK	3	3,667	1,528	NS
51AV	8	3,000	,756	NS
51LHL	10	2,800	1,317	NS
51LHM	32	3,125	1,289	NS
51LK	11	3,364	1,027	NS
51LV	20	2,650	,671	NS
51NHL	16	1,563	1,861	NS
51NHM	18	3,056	1,211	NS
51NK	3	3,333	1,528	NS
51NV	14	2,643	,745	NS
51PHL	8	3,375	1,302	NS
51PHM	34	2,912	1,311	NS
51PK	9	3,778	,833	NS
51PV	15	2,667	,724	NS
51RHL	18	2,889	1,231	NS
51RHM	55	3,145	1,239	NS
51RHM	45	3,267	1,136	NS
51RK	15	3,333	1,113	NS
51RV	35	2,457	,611	NS
51SBHL	20	3,000	1,214	NS
51SBK	17	3,294	1,105	NS
51SBV	39	2,487	,601	NS

51SPHL	18	3,056	1,259 NS
51SPHM	40	3,025	1,250 NS
51SPK	10	3,100	1,287 NS
51SPV	27	2,593	,636 NS

Question	N Valid	Mean	Std. Dev.	P
52AHL	5	3,600	1,342	NS
52AHM	20	3,050	1,191	NS
52AK	3	3,333	,577	NS
52AV	11	3,636	,924	NS
52LHL	21	4,190	,873	NS
52LHM	37	3,189	1,244	NS
52LK	13	3,231	,832	NS
52LV	31	3,806	1,167	NS
52NHL	16	3,875	1,310	NS
52NHM	18	3,333	1,414	NS
52NK	3	3,667	,577	NS
52NV	20	3,650	1,182	NS
52PHL	13	3,538	1,450	NS
52PHM	40	3,050	1,339	NS
52PK	10	3,000	1,155	NS
52PV	21	3,571	1,076	NS
52RHL	35	3,743	1,146	NS
52RHM	64	3,063	1,379	NS
52RK	17	2,824	1,015	NS
52RV	64	3,625	1,228	NS
52SBHL	39	3,692	1,260	NS
52SBHM	52	3,096	1,404	NS
52SBK	18	2,944	,998	NS
52SBV	72	3,542	1,266	NS
52SPHL	27	3,481	1,341	NS
52SPHM	48	2,938	1,311	NS
52SPK	12	3,083	,900	NS
52SPV	44	3,659	1,275	NS

Question	N Valid	Mean	Std. Dev.	P
53AHL	5	4,000	,707	NS
53AHM	20	3,000	1,622	NS
53AK	3	3,667	,577	NS
53AV	11	3,909	,944	NS
53LHL	22	4,000	1,069	NS
53LHM	39	3,410	1,482	NS
53LK	12	3,667	1,155	NS
53LV	33	3,848	1,228	NS
53NHL	16	4,250	1,183	NS
53NHM	20	4,200	,951	NS
53NK	3	4,000	,000	NS
53NV	20	3,650	1,182	NS
53PHL	13	4,154	,899	NS
53PHM	43	3,512	1,454	NS
53PK	10	3,500	1,434	NS
53PV	23	3,739	1,322	NS
53RHL	37	4,000	1,202	NS
53RHM	66	3,591	1,392	NS
53RK	17	3,471	1,375	NS
53RV	64	3,984	1,148	NS

53SBHL	42	4,000	1,169 NS
53SBHM	52	3,635	1,456 NS
53SBK	18	3,500	1,295 NS
53SBV	73	3,945	1,117 NS
53SPHL	29	4,069	1,252 NS
53SPHM	49	3,571	1,399 NS
53SPK	11	3,182	1,250 NS
53SPV	45	3,933	1,214 NS

Question	N Valid	Mean	Std. Dev.	P
54AHL	5	1,200	,447	NS
54AV	11	1,000	,000	NS
54LHL	21	1,333	,577	NS
54LV	35	1,057	,236	NS
54NHL	16	1,438	,512	NS
54NV	20	1,100	,308	NS
54PHL	13	1,308	,480	NS
54PV	24	1,083	,282	NS
54RHL	37	1,486	,507	NS
54RV	70	1,221	,448	NS
54SBHL	42	1,500	,506	NS
54SBV	79	1,234	,452	NS
54SPHL	30	1,500	,509	NS
54SPV	49	1,235	,469	NS

Question	N Valid	Mean	Std. Dev.	P
55AHL	5	2,000	,707	NS
55AV	11	1,273	,467	NS
55LHL	21	1,429	,676	NS
55LV	33	1,242	,435	NS
55NHL	16	1,500	,632	NS
55NV	19	1,474	,513	NS
55PHL	13	1,615	,506	NS
55PV	25	1,480	,510	NS
55RHL	37	1,541	,605	NS
55RV	68	1,647	,593	NS
55SBHL	42	1,571	,547	NS
55SBV	77	1,597	,544	NS
55SPHL	30	1,600	,563	NS
55SPV	47	1,553	,583	NS

Question	N Valid	Mean	Std. Dev.	P
56AHL	5	4,400	,894	NS
56AHM	19	3,947	1,129	NS
56AK	3	2,667	1,528	NS
56AV	11	4,455	,934	P< 0.05
56LHL	21	3,952	1,071	NS
56LHM	38	3,737	1,309	NS
56LK	13	1,769	,927	P< 0.05
56LV	35	4,200	1,158	NS
56NHL	16	4,063	1,124	NS
56NHM	20	4,000	1,298	NS
56NK	3	2,000	1,000	NS
56NV	20	4,800	,410	P< 0.05
56PHL	13	4,077	1,115	NS
56PHM	42	3,667	1,337	NS

56PK	10	1,800	1,135 P< 0.05
56PV	25	4,240	1,012 NS
56RHL	36	4,125	1,038 NS
56RHM	67	3,761	1,361 NS
56RK	18	1,556	,856 P< 0.05
56RV	66	3,985	1,234 NS
56SBHL	40	3,975	1,097 NS
56SBHM	53	3,830	1,252 NS
56SBK	19	1,526	,612 P< 0.05
56SBV	75	3,973	1,262 NS
56SPHL	29	4,241	,988 NS
56SPHM	50	3,780	1,389 NS
56SPK	12	1,833	,937 P< 0.05
56SPV	49	4,061	1,197 NS

Question	N Valid	Mean	Std. Dev.	P
57AHL	5	4,200	,837 NS	
57AHM	20	3,150	1,309 NS	
57AK	3	2,333	1,528 NS	
57AV	11	4,091	1,300 NS	
57LHL	21	3,952	,973 NS	
57LHM	39	3,000	1,469 NS	
57LK	12	3,083	1,084 NS	
57LV	32	3,875	1,185 NS	
57NHL	15	4,200	,775 NS	
57NHM	21	3,619	1,532 NS	
57NK	3	3,000	1,000 NS	
57NV	19	3,842	1,302 NS	
57PHL	13	4,077	,862 NS	
57PHM	43	2,767	1,445 NS	
57PK	10	2,600	1,265 NS	
57PV	25	3,960	1,369 NS	
57RHL	36	3,861	1,150 NS	
57RHM	69	2,971	1,495 NS	
57RK	17	2,941	1,435 NS	
57RV	65	3,738	1,302 NS	
57SBHL	42	4,024	1,093 NS	
57SBHM	55	3,127	1,491 NS	
57SBK	18	3,000	1,414 NS	
57SBV	74	3,595	1,364 NS	
57SPHL	29	4,138	,833 NS	
57SPHM	51	2,980	1,503 NS	
57SPK	11	2,636	1,502 NS	
57SPV	45	3,600	1,388 NS	

Question	N Valid	Mean	Std. Dev.	P
58AHL	5	4,000	1,414 NS	
58AHM	20	2,300	1,625 NS	
58AK	3	2,333	2,309 NS	
58AV	11	3,455	1,293 NS	
58LHL	22	2,636	1,529 NS	
58LHM	39	1,923	1,365 NS	
58LK	13	2,308	1,548 NS	
58LV	34	3,265	1,463 NS	
58NHL	15	2,467	1,642 NS	
58NHM	21	2,524	1,632 NS	

58NK	3	2,333	2,309 NS
58NV	20	3,250	1,482 NS
58PHL	13	2,538	1,664 NS
58PHM	43	1,860	1,320 NS
58PK	10	1,800	1,687 NS
58PV	25	3,320	1,574 NS
58RHL	36	2,556	1,629 NS
58RHM	69	2,072	1,458 NS
58RK	18	2,389	1,685 NS
58RV	67	2,731	1,591 NS
58SBHL	42	2,738	1,609 NS
58SBHM	55	2,236	1,527 NS
58SBK	19	2,211	1,619 NS
58SBV	76	2,750	1,609 NS
58SPHL	29	2,793	1,634 NS
58SPHM	51	2,059	1,515 NS
58SPK	12	2,083	1,564 NS
58SPV	46	2,870	1,572 NS

Question	N Valid	Mean	Std. Dev.	P
59AHL	5	3,800	1,643	NS
59AHM	20	2,050	1,701	NS
59AK	3	2,333	1,528	NS
59AV	11	1,909	1,044	NS
59LHL	22	2,545	1,535	NS
59LHM	39	1,872	1,454	NS
59LK	13	2,308	1,182	NS
59LV	35	2,571	1,501	NS
59NHL	16	2,438	1,711	NS
59NHM	21	2,238	1,578	NS
59NK	3	2,333	1,528	NS
59NV	20	2,000	1,257	NS
59PHL	13	2,615	1,710	NS
59PHM	43	1,837	1,379	NS
59PK	10	1,900	1,449	NS
59PV	25	2,280	1,595	NS
59RHL	37	2,568	1,573	NS
59RHM	69	2,014	1,470	NS
59RK	18	2,333	1,495	NS
59RV	69	2,188	1,478	NS
59SBHL	43	2,791	1,597	NS
59SBHM	55	2,145	1,568	NS
59SBK	19	2,158	1,425	NS
59SBV	78	2,205	1,471	NS
59SPHL	30	2,600	1,567	NS
59SPHM	51	2,000	1,483	NS
59SPK	12	2,083	1,379	NS
59SPV	48	2,250	1,551	NS

Question	N Valid	Mean	Std. Dev.	P
60AHL	5	2,200	,837	NS
60AHM	20	1,900	1,252	NS
60AK	3	2,000	1,732	NS
60AV	11	2,227	1,506	NS
60LHL	22	1,591	,854	NS
60LHM	39	1,692	1,195	NS

60LK	13	1,769	,927 NS
60LV	34	2,000	1,348 NS
60NHL	16	2,000	1,265 NS
60NHM	21	1,524	,873 NS
60NK	3	2,333	1,528 NS
60NV	20	1,625	,985 NS
60PHL	13	1,769	1,092 NS
60PHM	43	1,814	1,097 NS
60PK	10	1,600	,966 NS
60PV	25	1,660	1,143 NS
60RHL	37	1,568	,959 NS
60RHM	69	1,696	1,075 NS
60RK	18	1,556	,616 NS
60RV	69	1,848	1,241 NS
60SBHL	43	1,744	1,071 NS
60SBHM	55	1,745	1,142 NS
60SBK	19	1,842	,898 NS
60SBV	78	1,788	1,231 NS
60SPHL	30	1,700	1,149 NS
60SPHM	51	1,529	,924 NS
60SPK	12	2,000	,953 NS
60SPV	48	1,906	1,398 NS

Question	N Valid	Mean	Std. Dev.	P
61AHL	5	3,200	1,789	NS
61AHM	19	2,868	1,763	NS
61AK	3	1,667	,577	NS
61AV	11	1,818	1,471	NS
61LHL	22	2,000	1,480	NS
61LHM	38	2,461	1,604	NS
61LK	13	2,308	,947	NS
61LV	34	1,941	1,413	NS
61NHL	16	1,875	1,586	NS
61NHM	21	2,500	1,628	NS
61NK	3	2,667	1,155	NS
61NV	20	1,900	1,373	NS
61PHL	13	2,000	1,472	NS
61PHM	41	2,378	1,654	NS
61PK	10	1,600	,966	NS
61PV	25	1,880	1,424	NS
61RHL	37	1,919	1,460	NS
61RHM	67	2,396	1,632	NS
61RK	18	2,222	1,166	NS
61RV	69	1,681	1,207	NS
61SBHL	43	1,907	1,444	NS
61SBHM	53	2,396	1,645	NS
61SBK	19	2,105	1,197	NS
61SBV	78	1,808	1,280	NS
61SPHL	30	2,133	1,570	NS
61SPHM	49	2,439	1,553	NS
61SPK	12	2,500	1,243	NS
61SPV	48	1,896	1,341	NS

Question	N Valid	Mean	Std. Dev.	P
62AHL	5	4,400	,894	NS
62AHM	20	3,600	1,536	NS

62AK	3	3,333	2,082 NS
62AV	11	3,091	1,758 NS
62LHL	22	4,000	1,113 NS
62LHM	39	3,615	1,498 NS
62LK	13	3,923	1,553 NS
62LV	35	3,514	1,502 NS
62NHL	16	4,063	1,181 NS
62NHM	21	3,476	1,601 NS
62NK	3	4,667	,577 NS
62NV	20	3,600	1,536 NS
62PHL	13	3,923	1,038 NS
62PHM	43	3,558	1,485 NS
62PK	10	3,500	1,581 NS
62PV	25	3,320	1,651 NS
62RHL	37	3,973	1,067 NS
62RHM	69	3,507	1,530 NS
62RK	18	4,000	1,455 NS
62RV	70	3,529	1,452 NS
62SBHL	43	4,140	,990 NS
62SBHM	55	3,600	1,448 NS
62SBK	19	3,684	1,600 NS
62SBV	79	3,671	1,393 NS
62SPHL	30	4,233	,971 NS
62SPHM	51	3,510	1,502 NS
62SPK	12	4,000	1,651 NS
62SPV	49	3,571	1,472 NS

Question	N Valid	Mean	Std. Dev.	P
63AHL	4	4,750	,500	NS
63AHM	20	4,500	,761	NS
63AK	3	4,667	,577	NS
63AV	10	4,900	,316	NS
63LHL	19	4,737	,452	NS
63LHM	39	4,410	1,019	NS
63LK	13	4,462	,519	NS
63LV	30	4,867	,346	NS
63NHL	15	4,800	,414	NS
63NHM	20	4,600	,995	NS
63NK	3	5,000	,000	NS
63NV	18	4,889	,323	NS
63PHL	12	4,667	,492	NS
63PHM	43	4,163	1,174	NS
63PK	10	4,700	,483	NS
63PV	25	11,440	18,305	NS
63RHL	32	4,688	,535	NS
63RHM	66	4,500	,932	NS
63RK	18	4,444	,784	NS
63RV	59	4,644	,663	NS
63SBHL	38	4,658	,669	NS
63SBHM	54	4,481	,947	NS
63SBK	19	4,421	,769	NS
63SBV	66	4,652	,690	NS
63SPHL	28	4,643	,731	NS
63SPHM	48	4,458	,967	NS
63SPK	12	4,417	,900	NS
63SPV	40	4,650	,770	NS

Question	N Valid	Mean	Std. Dev.	P
64AHM	20	49,500	25,231	NS
64AK	3	21,667	7,638	NS
64AV	11	215,455	149,891	NS
64LHL	17	333,529	200,933	NS
64LHM	39	57,564	40,211	NS
64LK	12	42,083	28,401	NS
64LV	30	251,000	163,461	NS
64NHM	20	42,750	18,882	NS
64NK	3	56,667	55,076	NS
64NV	18	231,667	158,012	NS
64PHM	41	60,610	40,531	NS
64PK	10	39,500	30,591	NS
64PV	23	228,391	163,313	NS
64RHM	65	56,923	35,835	NS
64RK	16	43,438	25,081	NS
64RV	61	217,869	138,337	NS
64SBHM	53	54,811	35,368	NS
64SBK	18	46,111	23,298	NS
64SBV	68	218,824	137,043	NS
64SPHM	48	57,604	38,551	NS
64SPK	11	45,909	29,565	NS
64SPV	44	231,136	149,732	NS

Question	N Valid	Mean	Std. Dev.	P
65AHL	5	2,800	1,483	NS
65AV	8	2,625	,518	NS
65LHL	13	2,692	1,109	NS
65LV	27	2,630	1,006	NS
65NHL	11	2,364	1,206	NS
65NV	17	2,706	,772	NS
65PHL	12	2,250	,754	NS
65PV	19	2,421	,902	NS
65RHL	27	2,593	1,118	NS
65RV	51	2,608	,981	NS
65SBHL	30	2,700	1,022	NS
65SBV	60	2,600	1,028	NS
65SPHL	23	2,565	1,121	NS
65SPV	37	2,676	1,082	NS

Question	N Valid	Mean	Std. Dev.	P
66AHL	5	1,400	,548	NS
66AV	8	2,250	,707	NS
66LHL	18	1,500	,786	NS
66LV	28	1,929	,940	NS
66NHL	14	1,643	,842	NS
66NV	17	2,118	,928	NS
66PHL	13	1,538	,776	NS
66PV	21	1,857	,910	NS
66RHL	32	1,594	,798	NS
66RV	53	2,113	,934	NS
66SBHL	33	1,667	,816	NS
66SBV	64	2,000	,943	NS
66SPHL	26	1,731	,827	NS
66SPV	39	1,949	1,025	NS

Question	N Valid	Mean	Std. Dev.	P
67AHL	4	3,000	1,633	NS
67AV	10	2,200	,919	NS
67LHL	16	2,938	1,389	NS
67LV	34	2,176	,869	NS
67NHL	15	3,000	1,195	NS
67NV	18	2,167	,924	P< 0.05
67PHL	12	3,000	1,206	NS
67PV	23	2,304	,765	NS
67RHL	31	3,000	1,155	NS
67RV	62	2,145	,956	P< 0.05
67SBHL	35	3,029	1,071	P< 0.05
67SBV	71	2,141	,930	P< 0.05
67SPHL	27	3,148	1,134	P< 0.05
67SPV	45	2,067	,837	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
68AHL	5	5,000	,000	NS
68AHM	18	2,444	1,294	NS
68AK	3	3,667	2,309	NS
68AV	11	4,182	1,401	NS
68LHL	20	4,000	1,414	NS
68LHM	35	2,829	1,465	NS
68LK	13	3,000	1,472	NS
68LV	31	4,161	1,344	NS
68NHL	15	4,333	1,175	NS
68NHM	18	3,389	1,501	NS
68NK	3	3,667	2,309	NS
68NV	18	3,833	1,505	NS
68PHL	13	4,385	1,044	NS
68PHM	38	2,816	1,468	NS
68PK	10	3,400	1,713	NS
68PV	22	4,182	1,296	NS
68RHL	34	3,912	1,401	NS
68RHM	61	3,016	1,500	NS
68RK	18	3,444	1,464	NS
68RV	66	4,106	1,302	NS
68SBHL	38	3,974	1,345	NS
68SBHM	49	2,980	1,479	NS
68SBK	19	3,632	1,499	NS
68SBV	75	4,053	1,335	NS
68SPHL	27	4,000	1,301	NS
68SPHM	45	3,044	1,522	NS
68SPK	12	3,250	1,603	NS
68SPV	46	4,000	1,366	NS

Question	N Valid	Mean	Std. Dev.	P
69AHL	4	2,500	1,000	NS
69AHM	14	2,000	,679	NS
69AK	3	2,000	,000	NS
69AV	11	1,818	,982	NS
69LHL	13	2,308	,751	NS
69LK	10	2,200	,632	NS
69LSPH	30	2,067	,640	NS

Mecq

69LV	28	2,036	,693 NS
69NHL	12	2,250	,866 NS
69NHM	21	1,667	1,155 NS
69NK	3	2,000	,000 NS
69NV	18	1,833	,707 NS
69PHL	11	2,000	,775 NS
69PHM	35	1,771	,415 NS
69PK	9	2,000	,000 NS
69PV	20	1,950	,686 NS
69RHL	29	2,345	,897 NS
69RHM	54	1,963	,740 NS
69RK	14	2,143	,535 NS
69RV	54	2,093	,917 NS
69SBHL	30	2,133	,819 NS
69SBHM	43	2,000	,831 NS
69SBK	16	2,250	,683 NS
69SBV	61	2,082	,862 NS
69SPHL	23	2,130	,815 NS
69SPHM	38	1,947	,782 NS
69SPK	10	2,000	,000 NS
69SPV	37	2,108	,774 NS

Question	N Valid	Mean	Std. Dev.	P
70AHL	4	2,000	1,155	NS
70AHM	15	2,733	1,100	NS
70AK	3	2,667	1,528	NS
70AV	11	1,727	1,191	NS
70LHL	13	1,846	,987	NS
70LHM	27	2,481	1,156	NS
70LK	10	2,300	1,160	NS
70LV	30	2,167	,834	NS
70NHL	11	2,273	1,009	NS
70NHM	14	2,214	1,122	NS
70NK	3	3,333	,577	NS
70NV	17	2,471	,800	NS
70PHL	9	1,889	,928	NS
70PHM	33	2,394	1,171	NS
70PK	9	2,333	1,118	NS
70PV	23	2,087	,900	NS
70RHL	30	2,000	1,050	NS
70RHM	47	2,447	1,100	NS
70RK	13	2,000	1,155	NS
70RV	53	2,245	,918	NS
70SBHL	31	1,903	1,044	NS
70SBHM	37	2,432	1,094	NS
70SBK	14	2,214	1,122	NS
70SBV	61	2,246	,907	NS
70SPHL	22	2,045	,999	NS
70SPHM	36	2,333	1,095	NS
70SPK	10	2,100	1,197	NS
70SPV	41	2,220	,852	NS

Question	N Valid	Mean	Std. Dev.	P
73AHL	3	1,500	,500	NS
73AV	11	1,364	,674	NS
73LHL	16	1,219	,407	NS

73LV	34	1,324	,535 NS
73NHL	12	1,208	,396 NS
73NV	19	1,211	,535 NS
73PHL	11	1,182	,405 NS
73PV	25	1,480	,653 NS
73RHL	28	1,268	,441 NS
73RV	65	1,323	,533 NS
73SBHL	34	1,221	,412 NS
73SBV	76	1,355	,559 NS
73SPHL	24	1,229	,416 NS
73SPV	47	1,340	,522 NS

Question	N Valid	Mean	Std. Dev.	P
74AHL	5	4,200	,837	NS
74AHM	20	4,350	,988	NS
74AK	3	4,333	,577	NS
74AV	11	4,182	,751	NS
74LHL	21	4,429	,676	NS
74LHM	39	4,308	,863	NS
74LK	13	4,000	,707	NS
74LV	34	4,294	,836	NS
74NHL	15	4,400	,737	NS
74NHM	21	4,286	1,007	NS
74NK	3	4,333	,577	NS
74NV	20	4,100	,852	NS
74PHL	13	4,538	,519	NS
74PHM	43	4,326	,892	NS
74PK	10	4,000	,943	NS
74PV	25	4,080	1,320	NS
74RHL	36	4,500	,697	NS
74RHM	69	4,261	,902	NS
74RK	18	4,167	,786	NS
74RV	69	4,246	,881	NS
74SBHL	40	4,500	,641	NS
74SBHM	55	4,218	,854	NS
74SBK	19	4,105	,809	NS
74SBV	78	4,269	,893	NS
74SPHL	30	4,433	,679	NS
74SPHM	51	4,294	,944	NS
74SPK	12	4,333	,651	NS
74SPV	48	4,229	,951	NS

Question	N Valid	Mean	Std. Dev.	P
75AHL	5	2,400	1,342	NS
75AV	9	2,222	,833	NS
75LHL	22	2,000	1,345	NS
75LV	32	2,063	,982	NS
75NHL	16	2,500	1,673	NS
75NV	18	2,278	1,018	NS
75PHL	13	2,000	1,225	NS
75PV	20	2,150	,813	NS
75RHL	36	2,333	1,331	NS
75RV	65	2,138	,998	NS
75SBHL	42	2,190	1,292	NS
75SBV	73	2,205	1,013	NS
75SPHL	30	2,367	1,377	NS
75SPV	46	2,283	1,089	NS

ANOVA Tables for Tests by Forest

All tests for normality failed

Kruskal-Wallis One Way Analysis of Variance on Ranks

Post hoc test Dunn's Method for pairwise comparison

Mann-Whitney Rank Sum for questions with one degree of freedom

Question	N Valid	Mean	Std. Dev.	P
HL18	53	4,358	,834	P< 0.05
V18	86	4,105	,812	NS
HM18	72	3,819	,954	P< 0.05
K18	23	4,304	,876	NS

Question	N Valid	Mean	Std. Dev.	P
HL19	53	4,330	,727	P< 0.05
V19	87	4,218	,706	NS
HM19	71	3,803	,935	P< 0.05
K19	23	4,217	,736	NS

Question	N Valid	Mean	Std. Dev.	P
HM20	53	3,302	1,137	NS
V20	84	3,048	,890	NS
HM20	64	2,891	1,071	NS
K20	22	3,364	,953	NS

Question	N Valid	Mean	Std. Dev.	P
HL21	53	4,736	,684	P< 0.05
V21	87	4,862	,379	P< 0.05
HM21	70	3,464	1,174	P< 0.05
K21	23	4,348	,885	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL22	53	4,481	,747	NS
V22	87	4,391	,705	NS

Question	N Valid	Mean	Std. Dev.	P
HL23	53	4,792	,600	P< 0.05
V23	87	4,678	,539	NS
HM23	72	4,361	,844	P< 0.05
K23	23	4,652	,647	NS

Question	N Valid	Mean	Std. Dev.	P
HL24	53	4,604	,631	P< 0.05
V24	87	4,770	,475	P< 0.05
HM24	71	3,718	1,071	P< 0.05
K24	23	4,304	,822	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
25HL	53	3,726	1,031	P< 0.05
25V	87	4,161	,913	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL26	53	4,160	,865	P< 0.05

V26	87	4,207	,809	P< 0.05
HM26	63	3,333	1,032	P< 0.05
K26	22	4,091	,684	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL27	46	2,783	,758	NS
V27	75	2,500	,663	NS
HM27	65	2,646	,891	NS
K27	21	2,714	,644	NS

Question	N Valid	Mean	Std. Dev.	P
HL28	53	4,189	,833	NS
V28	85	4,247	,706	NS
HM28	72	3,917	,989	NS
K28	23	4,043	,638	NS

Question	N Valid	Mean	Std. Dev.	P
HL29	53	2,538	1,278	NS
V29	75	2,893	,924	NS
HM29	61	3,148	1,046	NS
K29	21	3,000	,632	NS

Question	N Valid	Mean	Std. Dev.	P
HL30	46	3,109	,875	NS
V30	75	3,147	,954	NS
HM30	61	3,295	,955	NS
K30	21	3,095	,700	NS

Question	N Valid	Mean	Std. Dev.	P
HL31	50	4,090	,698	NS
V31	79	3,747	,839	NS
HM31	69	3,913	,935	NS
K31	23	4,130	,458	NS

Question	N Valid	Mean	Std. Dev.	P
HL32	47	2,149	,589	NS
V32	72	2,160	,598	NS
HM32	58	2,259	1,036	NS
K32	58	2,259	1,036	NS

Question	N Valid	Mean	Std. Dev.	P
HL33	52	3,942	,802	P< 0.05
V33	84	3,524	,768	P< 0.05
HM33	71	3,761	,853	NS
K33	23	3,652	,775	NS

Question	N Valid	Mean	Std. Dev.	P
HL34	52	4,135	,841	P< 0.05
V34	81	3,580	,973	P< 0.05
HM34	70	3,629	,951	P< 0.05
K34	23	3,652	,885	NS

Question	N Valid	Mean	Std. Dev.	P
HL35	50	3,720	,904	NS

V35	84	3,405	,808	NS
HM35	72	3,792	1,020	NS
K35	23	3,913	,596	NS

Question	N Valid	Mean	Std. Dev.	P
HL36	50	3,630	,908	NS
V36	83	3,349	,889	NS
HM36	68	3,485	1,099	NS
K36	23	3,652	,775	NS

Question	N Valid	Mean	Std. Dev.	P
HL37	46	3,413	,884	NS
V37	74	3,149	,902	P< 0.05
HM37	67	3,463	,943	NS
K37	22	3,864	,710	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL38	42	3,000	,937	NS
V38	73	2,808	,952	NS
HM38	63	3,159	1,096	NS
K38	21	3,333	,856	NS

Question	N Valid	Mean	Std. Dev.	P
HL39	48	2,792	1,031	P< 0.05
V39	82	2,610	1,003	P< 0.05
HM39	70	1,936	,978	P< 0.05
K39	21	1,905	,539	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL40	51	3,882	1,052	NS
V40	87	4,080	1,003	NS

Question	N Valid	Mean	Std. Dev.	P
HL41	51	3,980	,812	P< 0.05
V41	87	3,644	,940	P< 0.05
HM41	67	2,582	,972	P< 0.05
K41	23	2,696	,703	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HM42	38	2,566	,871	NS
V42	77	2,481	,700	NS
HL42	63	2,333	,967	NS
K42	20	2,300	,571	NS

Question	N Valid	Mean	Std. Dev.	P
HL43	50	3,120	1,062	P< 0.05
V43	86	3,767	,966	P< 0.05
HM43	69	1,783	,838	P< 0.05
K43	22	2,045	,575	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL44	45	2,800	1,236	NS
V44	79	2,696	1,090	NS

	N Valid:	Mean:	Std. Dev:	P
HL45	52	4,173	,923	NS
V45	87	4,287	,714	NS
Question	N Valid	Mean	Std. Dev.	P
HL46	52	4,788	,457	NS
V46	87	4,644	,549	NS
HM46	72	4,708	,568	NS
K46	23	4,565	,590	NS
Question	N Valid	Mean	Std. Dev.	P
HL47	50	4,460	,762	NS
V47	85	4,235	,840	NS
HM47	72	4,458	,730	NS
K47	23	4,000	1,000	NS
Question	N Valid	Mean	Std. Dev.	P
HL48	52	4,173	,785	NS
V48	87	4,310	,720	NS
HM48	71	4,042	,818	NS
K48	22	4,136	,640	NS
Question	N Valid	Mean	Std. Dev.	P
HL49	42	2,643	1,008	NS
V49	66	2,848	,846	NS
HM49	51	2,745	1,093	NS
K49	19	2,684	,671	NS
Question	N Valid	Mean	Std. Dev.	P
HL50	39	3,000	,973	NS
V50	55	2,764	1,071	P< 0.05
HM50	54	3,352	1,216	P< 0.05
K50	17	2,765	,562	NS
Question	N Valid	Mean	Std. Dev.	P
HL51	25	2,840	1,179	NS
V51	45	2,467	,588	NS
HM51	58	3,103	1,252	NS
K51	20	3,450	1,099	NS
Question	N Valid	Mean	Std. Dev.	P
HL52	47	3,638	1,241	NS
V52	80	3,513	1,243	P< 0.05
HM52	67	3,119	1,376	P< 0.05
K52	22	3,000	1,024	P< 0.05
Question	N Valid	Mean	Std. Dev.	P
HL53	51	4,020	1,175	NS
V53	81	4,012	1,090	NS
HM53	68	3,618	1,383	NS
K53	22	3,636	1,255	NS
Question	N Valid	Mean	Std. Dev.	P
HL54	51	1,510	,505	P< 0.05

V54 85 1,188 ,393 P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL55	49	1,531	,504	NS
V55	81	1,556	,500	NS

Question	N Valid	Mean	Std. Dev.	P
HL56	49	3,949	1,147	NS
V56	83	3,976	1,239	NS
HM56	70	3,714	1,364	NS
K56	23	4,348	,832	NS

Question	N Valid	Mean	Std. Dev.	P
HL57	52	3,923	1,202	P< 0.05
V57	82	3,634	1,319	NS
HM57	72	3,000	1,520	P< 0.05
K57	22	2,864	1,390	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL58	52	2,692	1,615	NS
V58	84	2,738	1,607	NS
HM58	72	2,069	1,457	NS
K58	23	2,130	1,576	NS

Question	N Valid	Mean	Std. Dev.	P
HL59	53	2,755	1,555	P< 0.05
V59	86	2,244	1,495	NS
HM59	72	2,014	1,468	P< 0.05
K59	23	2,130	1,392	NS

Question	N Valid	Mean	Std. Dev.	P
HL60	53	1,755	1,054	NS
V60	86	1,773	1,212	NS
HM60	72	1,667	1,061	NS
K60	23	1,870	,968	NS

Question	N Valid	Mean	Std. Dev.	P
HL61	53	1,981	1,434	NS
V61	86	1,756	1,246	NS
HM61	70	2,450	1,664	NS
K61	23	2,000	1,128	NS

Question	N Valid	Mean	Std. Dev.	P
HL62	53	35	1,045	NS
V62	87	1	1,427	NS
HM62	72	16	1,519	NS
K62	23	65	1,584	NS

Question	N Valid	Mean	Std. Dev.	P
HL63	47	4,681	,629	NS
V63	72	4,639	,678	NS
HM63	69	4,449	1,008	NS
K63	23	4,435	,728	NS

Question	N Valid	Mean	Std. Dev.	P
HL64	45	312,333	192,181	P< 0.05
V64	75	229,200	141,199	P< 0.05
HM64	68	57,941	36,223	P< 0.05
K64	21	42,619	23,325	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL65	37	2,892	,737	NS
V65	65	2,569	1,030	NS

Question	N Valid	Mean	Std. Dev.	P
HM66	42	1,524	,740	NS
V66	70	1,971	,932	NS

Question	N Valid	Mean	Std. Dev.	P
HL67	44	2,932	1,087	P< 0.05
V67	78	2,128	,931	P< 0.05

Question	N Valid	Mean	Std. Dev.	P
HL68	48	3,938	1,420	P< 0.05
V68	82	4,061	1,337	P< 0.05
HM68	64	3,016	1,496	P< 0.05
K68	23	3,478	1,534	NS

Question	N Valid	Mean	Std. Dev.	P
HL69	39	2,256	,880	NS
V69	67	2,045	,843	NS
HM69	57	2,053	,766	NS
K69	19	2,211	,631	NS

Question	N Valid	Mean	Std. Dev.	P
HL70	39	1,949	1,075	NS
V70	65	2,231	,897	NS
HM70	49	2,449	1,119	NS
K70	17	2,235	1,147	NS

Question	N Valid	Mean	Std. Dev.	P
HL73	41	1,232	,420	NS
V73	82	1,354	,553	NS

Question	N Valid	Mean	Std. Dev.	P
HL74	50	4,440	,733	NS
V74	86	4,279	,877	NS
HM74	72	4,264	,888	NS
K74	23	4,130	,757	NS

Question	N Valid	Mean	Std. Dev.	P
HL75	50	3,860	1,229	NS
V75	81	3,802	1,005	NS

Question	N Valid	Median	P
HL1b	47	42	P< 0.05
HM1b	64	50,5	P< 0.05
V1b	75	47	P< 0.05
K1b	23	40	P< 0.05

Appendix E

Priority Indices

Priority index for over-night users

Question	N Valid:	%responding	Mean	Std. Dev.	Priority rate
C21	140	100,0020	4,8143	0,5171	481,44
C23	140	100,0020	4,7214	0,5635	472,15
C24	140	100,0020	4,7071	0,5431	470,72
C46	139	99,2877	4,6763	0,5277	464,30
C22	140	100,0020	4,4250	0,7195	442,51
C19	140	100,0020	4,2607	0,7134	426,08
C48	139	99,2877	4,2590	0,7454	422,87
C74	136	97,1448	4,3382	0,8275	421,44
C45	139	99,2877	4,2230	0,7898	419,29
C26	140	100,0020	4,1893	0,8277	418,94
C18	139	99,2877	4,2014	0,8269	417,15
C28	138	98,5734	4,2246	0,7547	416,44
C47	135	96,4305	4,2963	0,8111	414,29
C25	140	100,0020	3,9964	0,9791	399,65
C63	119	85,0017	1,3441	0,6566	-114 ,213
C40	138	98,5734	4,0072	1,0216	395,01
C53	132	94,2876	1,9741	1,1188	-186,43
C62	140	100,0020	2,2430	1,3119	-224,30
C56	132	94,2876	3,9659	1,2015	373,94
C68	130	92,8590	4,0154	1,3639	372,86
C41	138	98,5734	3,7681	0,9065	371,44
C34	133	95,0019	3,7970	0,9595	360,72
C57	134	95,7162	2,2544	1,2784	-216,21
C33	136	97,1448	3,6838	0,8046	357,86
C75	131	93,5733	3,8244	1,0918	357,86
C31	129	92,1447	3,8798	0,8023	357,51
C43	136	97,1448	3,5294	1,0466	342,86
C35	134	95,7162	3,5224	0,8559	337,15
C36	133	95,0019	3,4549	0,9034	328,22
C52	127	90,7161	3,5591	1,2386	322,86
C20	137	97,8591	3,1460	0,9966	307,86
C37	120	85,7160	3,2500	0,9005	278,58
C30	121	86,4303	3,1322	0,9214	270,72
C58	136	97,1448	3,2834	1,6041	-319,42
C29	121	86,4303	2,9050	0,8952	251,08
C39	130	92,8590	2,6769	1,0132	248,58
C59	139	99,2877	3,5632	1,5328	-354,44
C44	124	88,5732	2,7097	1,1027	240,00
C38	115	82,1445	2,8783	0,9473	236,43
C27	121	86,4303	2,6074	0,7107	225,36
C49	108	77,1444	2,7685	0,9131	213,58
C67	122	87,1446	3,5822	1,0589	-312,34
C42	115	82,1445	2,5087	0,7579	206,08
C65	102	72,8586	3,3123	0,9438	-241,41
C50	94	67,1442	2,8617	1,0328	192,15
C32	119	85,0017	2,1555	0,5921	183,22
C61	139	99,2877	1,9812	1,3202	-186,32
C60	139	99,2877	4,2360	1,1505	-420,59

C69	106	75,7158	2,1226	0,8586	160,72
Question	N Valid:	%responding	Mean	Std. Dev.	Priority rate
C70	104	74,2872	2,1250	0,9723	157,86
C66	112	80,0016	4,2434	0,8888	-336,23
C55	130	92,8590	1,5462	0,4998	143,57
C51	70	50,0010	2,6000	0,8580	130,00
C54	136	97,1448	1,3088	0,4637	127,15
C73	123	87,8589	1,3130	0,5137	115,36
C64	120	85,7160	260,3750	166,3955	

Priority index for day-use

Question	N Valid:	% Responding	Mean	Std. Dev.	Priority rating
D46	95	99,75	4,674	,573	466,20
D23	95	99,75	4,432	,808	442,05
D47	95	99,75	4,260	,822	-424,89
D63	92	96,60	1,553	,942	-150,03
D74	95	99,75	4,232	,856	422,10
D48	93	97,65	4,065	,777	396,90
D28	95	99,75	3,947	,915	393,75
D18	95	99,75	3,937	,954	392,70
D19	94	98,70	3,904	,905	385,35
D31	92	96,60	3,967	,845	383,25
D24	94	98,70	3,862	1,043	381,15
D35	95	99,75	3,821	,934	381,15
D56	93	97,65	3,871	1,279	378,00
D33	94	98,70	3,734	,832	368,55
D21	93	97,65	3,683	1,170	359,63
D62	95	99,75	2,433	1,527	-243,32
D34	93	97,65	3,634	,930	354,90
D53	90	94,50	2,381	1,346	-225,30
D36	91	95,55	3,527	1,026	337,05
D37	89	93,45	3,562	,904	332,85
D26	85	89,25	3,529	1,007	315,00
D57	94	98,70	3,032	1,484	-299,03
D52	89	93,45	3,090	1,294	288,76
D68	87	91,35	3,138	1,511	286,65
D38	84	88,20	3,202	1,039	282,45
D30	82	86,10	3,244	,897	279,30
D20	86	90,30	3,012	1,057	271,95
D29	82	86,10	3,110	,956	267,75
D51	78	81,90	3,192	1,217	261,45
D41	90	94,50	2,611	,908	246,75
D27	86	90,30	2,663	,835	240,45
D50	71	74,55	3,211	1,120	239,40
D61	93	97,65	1,982	1,555	-369,25
D58	95	99,75	3,283	1,478	-391,10
D59	95	99,75	3,951	1,443	-395,28
D42	83	87,15	2,325	,885	202,65
D49	70	73,50	2,729	,992	200,55
D32	77	80,85	2,312	,936	186,90
D39	91	95,55	1,929	,893	184,28
D43	91	95,55	1,846	,788	176,40
D60	95	99,75	1,716	1,038	171,15
D69	76	79,80	2,092	,734	166,95
D70	66	69,30	2,394	1,122	165,90
D64	89	93,45	54,326	34,139	