

R-200-2008

A data book of outdoor activities in Austria and Japan

Research category: Bilateral Joint Project in 2005 and 2006 by JSPS (JSPS, 1-109 project)



“Wanderung”



“Hanami”

Edited by AOKI, Yoji and ARNBERGER, Arne

独立行政法人 国立環境研究所

NATIONAL INSTITUTE FOR ENVIRONMENTAL STUDIES

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A data book of outdoor activities in Austria and Japan

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Photo "Wanderung" by Mariko HANDA

Photo "Hanami" by Yoji AOKI

Aims of this report

AOKI, Yoji

National Institute for Environmental Studies, Japan

Key Words : comparison of outdoor activities, climatic condition, Austria, Japan

This report aims to summarize the research activities of the cooperative research between Japan and Austria promoted by JSPS, Japan Society for the Promotion of Science, and FWF, Fonds zur Foederung der wissenschaftlichen Forschung, during the fiscal year of 2005 to 2006 in Japan and from October of 2005 to December of 2008 in Austria. The National Institute of Environmental Studies, Tsukuba, and the University of Natural Resources and Applied Life Sciences, Vienna (BOKU) had tried to clarify the differences and commonalities in outdoor activities between Austria and Japan. This was the first trial of the comparison of outdoor activities in different climatic conditions and cultural backgrounds. We have significant problems in climatic conditions, because Austria is located in a mostly cool temperate climatic zone and Japan is located from a subtropical zone to a cool temperate climatic zone. So the Austria side devoted itself to visitor behavior at parks in Vienna by the BOKU and the Japan side focused on visitor behavior in several climatic zones by different universities. Each university developed and established methods of measurements on human behaviors to make a comparison between Japan and Austria (Table 1).

Table 1 Categories of research areas and methods of measurement

	Questionnaire	Observatory
Urban area	1.1 Asakawa (Sapporo City)	1.10 Brandenburg (Vienna City)
Urban parks	1.8 Tashiro (Yoyogi Park)	1.7 Obase (Doho Park)
	1.11 Arnberger (Vienna Parks)	1.12 Brandenburg (Wien erberg Park)
Garden	1.5 Koyanagi (Kairakuen Garden)	1.11 Arneberger (Schoenbrunn Garden)
Suburban area	1.3 Aikoh (Nopporo Forest)	1.2 Aikoh (Nopporo Forest)
	1.4 Fujita (Japan and Europe)	1.9 Usuki (Vienna)
Nature area	1.6 Ito (Mt. Tsukuba)	1.13 Aoki (Japan and Veinna)
		1.14 Soshiroda (Tirol)

Their trials have not yet been completed, although the financial support was ended. But we had better introduce our activities for the Fourth International Conference on the MMV, Monitoring and Management of Visitor Flows in Recreational and Protected Areas at Montecitini Terme in Italy from 14 to 19 October 2008. Although this publication was delayed for the conference, we can deliver it to the participants of the conference afterwards. This project was also the first trial on the comparison of recreational activities in different climatic and cultural environments, so our experiences will be effective for other researchers in various countries.

The first chapter described and gave a brief explanation of their trials and the results which were obtained (Table 2). Hokkaido University and BOKU studied on the differences of seasonal impression and activities between Sapporo and Vienna. And they also measured the visitor behavior and feeling of crowdedness at Nopporo Forest Park and Viennese Lobau Forest. Aomori University focused the difference of wandering behavior in Europe and Japan. Ibaraki University compared the usage of French style garden of Schoenburnn and Japanese style garden Kairakuen. Tsukuba University focused the

different behaviors between at Stadtpark in Vienna and at Doho Park in Tsukuba. And they also measured the hiking routes at Mt. Tsukuba to compare the data at Vienna Forest. Tokyo Institute of Technology observed the different outdoor activities in Tyrol to compare the data of Shinshu in Japan. Chiba University measured the visitor behavior and the impression of Yoyogi Park in Tokyo to compare the data in Austria. National Institute for Environmental Studies, BOKU and University of the Ryukyus compared the effects of climatic condition to the fluctuation of visitor numbers. The second chapter showed the data obtained and reportable results. The third chapter described the chronology of this project concluding remarks. The additional chapter showed the profiles of contributors.

Table 2 Categories of research areas and results obtained

	impression	crowdedness	visitor numbers	activities
Urban area	1.1 Asakawa (Sapporo City)			1.10 Brandenburg (Vienna City)
Urban park	1.8 Tashiro (Yoyogi Park)	1.11 Arnberger (Vienna Parks)	1.12 Brandenburg (Wienerberg Park)	1.7 Obase (Doho Park)
Garden			1.11 Arnberger (Schoebrunn)	1.5 Koyanagi (Kairakuen Garden)
Suburban area	1.9 Usuki (Vienna City)	1.3 Aikoh (Nopporo Forest)	1.2 Aikoh (Nopporo Forest)	1.4 Fujita (Japan and Europe)
Nature area		1.6 Ito (Mt. Tsukuba)	1.13 Aoki (Japan and Vienna)	1.14 Soshiroda (Tirol)

These data will be effective for other recreation researchers in various countries, particularly for those who target on cross-cultural differences and commonalities in outdoor activities under different climatic conditions. The results will also be useful for the green space management in both countries, as well as for green space administrations in other countries.

Foreword

Ryutaro OHTSUKA, D. Sc.

President, National Institute for Environmental Studies

One of the most important purposes of environmental studies is to develop our ability in sustainable management of the environment which surrounds us or in which we live. The targets include not only hazardous areas, such as industrial zones, and heavy traffic zones, but also green spaces such as parks and waterfronts. In Japan, for instance, environmental degradation progressed all over the country in the rapid economic growth period, i.e., 1960s and 1970s. It was in the 1980s that the idea of amenities was widely recognized as a key concept in urban planning; in the same period, quality of life (QOL) was also recognized as the key words for desired lifestyle or society. Since then, construction or restoration projects of public spaces have been carried out, following this new idea, although there is still much debate about their desired structure and function. One of the major reasons has come from the lack of *in situ* investigations, especially about the practical use of these public spaces.

The joint research project, on which this report is based, aims to elucidate how people recognize the public spaces, how they use them, and what they want in the future, all of which have long been ignored in environmental studies. This project is also outstanding, owing to the uniqueness in comparative analysis between Austria and Japan, which differ considerably geographically, historically and culturally. Thus, the research results, which demonstrate both similarities and differences between them, are interesting from a scientific aspect and useful in city planning or, in a wider sense, environmental policy making. Thus, my sincere gratitude should go to the research members, especially Dr. Arne ARNBERGER, Dr. Andreas MUHAR and Dr. Yoji AOKI, and to the Austrian Science Foundation (FWF) and the Japan Society for the Promotion of Science (JSPS) for financial support.

I would like to add a few words. In the present-day world, urban population accounts for three-fourths in developed countries and more than 40% in developing countries, with rapid increase in the latter. As reported by mass media in the world, the urban environment, in general, has still been less secure, less hygienic and excessively artificial, and many urban dwellers are partly relieved to spend time in green spaces distributed spottily, although scientific investigation on this has seldom been conducted. It is thus expected that follow-up studies are conducted in more countries to contribute to the understanding of desired human-environment relationships for environmental policy.

Foreword

Assoc. Prof. Dr. ARNBERGER, Arne and Assoc. Prof. Dr. MUHAR, Andreas
University of Natural Resources and Applied Life Sciences, Vienna, Austrian Project Leader

Green spaces are important components of cities, providing counter-spaces to the many types of over-stimulation characteristic of urban life. They offer important recreation opportunities for urban residents and are places for diverse outdoor activities, social gathering and refuges from hectic city life, as well as valuable habitats for wildlife and important for urban ecology. At the same time, these areas suffer from intense use and multiple user activities. Attractive urban and suburban parks in Austrian and Japan are experiencing increasing numbers of visitors, often exceeding the social as well as ecological carrying capacities of such parks. Given the prominence of recreation areas in urban daily life, it is surprising that knowledge about urban recreation use is so limited. In particular standardized inter-area and cross-country comparisons of urban park use are very rare. Reliable and valid research about recreation use supports green space management and provides useful data for urban planning. It also demonstrates the importance of urban green space.

This 2.5-year cooperative research project funded by the Austrian Science Foundation (FWF) and the Japan Society for the Promotion of Science (JSPS) aims at enhancing the understanding of urban park use assisting urban planning and recreation area management in Austria and Japan. Cross-cultural and inter-area recreation use comparisons across several Viennese and Japanese urban recreation areas were carried out in a standardized manner, applying sophisticated outdoor recreation research methods. This project involved several researchers from different disciplines and targeted on a range of research topics such as visitor satisfaction, use patterns, crowding, user conflicts, visitor motives, user conflicts, park design, spatial distribution of visitors within a recreation area, use displacement, and the influence of weather on recreation. The settings investigated were urban pocket parks, historical gardens and sites, urban forests and conservation areas differing in size, physical setting and recreation uses. Although there was a high diversity of areas studied, management problems were often similar both in Japan and Austria.

We want to thank all our Austrian and Japanese colleagues, supporting us in carrying out research in Austria and Japan, the park administrations which assisted us in collecting recreation use data, and the FWF and the JSPS for their financial support. Special thanks go to Dr. Yoji Aoki who initiated and pushed forward this fruitful cooperation. It has been an exceptional experience visiting Japan and its wonderful green spaces, observing recreation use, working together with passionate Japanese researchers and discussing with local green space administrations about park management. We hope that further cooperation can be established, enlarging the research network and deepening existing relationships.

We are convinced that these research results will lead to a better understanding and management of urban recreation use and will, at the end, increase the recreation quality of urban green space users not only in Japan and Austria, but also in other countries.

Contribution: Significance of comparing outdoor activities, interaction of man and nature, between Austria and Japan



Mariko HANDA, Ph.D.

Director, The Organization for Landscape and Urban Greenery Technology Development

Significance of the research — Fact finding

At the beginning of 1980 I was studying landscape planning at the Technical University (TU) of Vienna, by Prof. Dr. Ralph Gaelzer, fascinated by the parks, gardens, alleys and green spaces in this “green city”. I walked so far around the Vienna Forest (275km in total). I met various people there, the families walking (Wanderung) through the forest, a man meditating alone on a bench in a park, an aged couple enjoying conversation at a coffee terrace, finally to find the existence of unique “philosophy of lifestyle in green areas”.

This comparison research between Austria and Japan, under the scheme of the bilateral joint project, is a challenge to compare outdoor activities by actual proofs, analyzing the data collected on site. The results show valuable facts, apart from vague images. Among the articles I found quite interesting, agreeable results. The outdoor activities are, so as to say, the interaction between man and nature, reflecting the philosophy of lifestyle in green areas. This is the first comprehensive research on outdoor activities to find the differences and similarities of feeling and way of thinking, from various aspects, between Austria and Japan. This is the most important significance of this research.

Development of the research — Further interpretation

In case of such comparison researches, it may be difficult to come to the final conclusion, because the respondents are living in different countries, under different climates and cultures. For example, the urban areas in Austria connote the forests, which are physically and mentally near to citizens (so called “Near Forest”). Meanwhile the Japanese feel the existence of the forests far from citizens (so called “Far Forest”). Generally speaking, the image for the word “autumn color” may be, in Austria, mainly yellow, mixed with gradation of colors. It is different from the image of the Japanese forests in autumn, mainly covered with red colors, mixed with diverse colors, as if they are brocades. The Austrian people enjoy the process of activities, while the Japanese people tend to aim at final objects. To the contrary, both countries have similarities; love of nature, intimate relation to nature, and delicacy to nature. I expect that the researchers, recognizing the basic differences and similarities, try to make further interpretations about the reasons, backgrounds and meanings of the data obtained this time. Through such a process the research will be developed to find more conclusions.

Application of the research — “Green-Culture” and “Global Environment”

From the global viewpoint, the existence of affluent vegetation in the outdoor and the distinct change of four seasons are the fundamental similarity between Austria and Japan. Today the global environment is getting worse, e.g. global warming, the loss of biodiversity, etc. By taking the mitigation/adaptation measures for environmental problems, it is important to find the relationship between man and nature in the region, to make clearer the philosophy of nature, and to apply the way of thinking to urban design. In this way, I hope that the conclusions of this research would be positively applied to configuration of “green-culture” suitable to each region, and conservation of our planet Earth.

Acknowledgements

Our project was originated by the work of Dipl.-Ing. Wilfried KIRCHNER of Oestreichisches Institute fuer Raumplanung, in Vienna and Prof. Takasuke WATANABE of Tokyo Institute of Technology in Tokyo. We express our gratitude to the pioneers of this research field. The proposal of the project was stimulated by the meeting of MMV, organized by Universitaet fuer Bodenkultur, Vienna. Information of recreation activities were offered by Japan National Tourism Organization, Director Kiyoshi HAYASHI of the Japan Travel Bureau Foundation and National Park Foundation. The grant was supported by JSPS: Japan Society of the Promotion of Science and FWF: Fonds zur Foederung der wissenschaftlichen Forschung. Their contributions are acknowledged.

The investigation of park use in Japan was supported by Parks and Recreation Foundation, Mr. Sinji KOAKUTSU of Takino Suzuran Hillside National Park, Noppro Forest Park Office of Hokkaido Government, Okinawa Oceanic Exposition Commemorative Park Management Foundation, Showa Kinen Park, Mt. Moiwa Ropeway Company, Mt. Tsukuba Cable Railway Company, Tokyo Metropolitan Park Association and Ms. Mayumi TOUYAMA of Urban Science Associates in Naha. Each investigation was supported by Dr. Hajime MATSUSHIMA of Hokkaido University, Aomori University, Ibaraki University, University of Tsukuba, School of Landscape Architecture of Chiba University, Toyo University, Tokyo Institute of Technology, Prof. Seigo ITOH of Shinshu University, and University of the Ryukyus. All contributors are thanked.

The investigations of Vienna parks and the questionnaire tests were supported by Japanische Botschaft Information – und Kulturzentrum in Vienna, Frau Keiko ARAI and BOKU. The on-site visits and the information of the local sites were supported by the many local administrators. The text of this report was corrected by Prof. Martin E. PAULY of Tsukuba University of Technology. We thanked them.

The Austrian research group thanks the Forest Department of the City of Vienna (Municipal Department 42), the Department for Parks and Gardens of the City of Vienna (Municipal Department 42), and the Federal Gardens Administration Vienna – Innsbruck.

We also want to thank to National Institute for Environmental Studies, Tsukuba, for their help in establishing the cross-cultural studies, as well as all researchers and green space managers participating in the project.

Research was supported by the Austrian Science Fund (FWF) and the Japan Society for the Promotion of Science (JSPS). We express gratitude to them.

AOKI, Yoji and ARNBERGER, Arne

Abstract

In order to clarify the differences in outdoor activities between Austria and Japan, a cooperative research project was conducted by BOKU – University of Natural Resources and Applied Life Sciences, Vienna and National Institute of Environmental Studies, in Tsukuba. They investigated differences and commonalities in outdoor recreation activities between Austria and Japan. This project was the first effort in comparing outdoor activities based on the precise measurements under different climatic conditions and with different cultural backgrounds.

While Austria is located almost in the cool temperate climatic zone, Japan ranges over the subtropical zone to the cool temperate climatic zone. The Austrian research team analyzed visitor behaviors, visitor preferences, visitor motives and visitor numbers in several green spaces of Vienna. The Japanese research team consisting of several universities focused on visitor behaviors in several climatic zones, as well as on visitor preferences, visitor motives, and visitor numbers. A common standardized research approach using the same methods and data collection procedures was established to guarantee comparative analyses between the countries. Several data collection methods were applied.

Both sides are now analyzing the results and testing the data obtained and conducting further investigation to get their validation. Their results showed the different outdoor activities and different modes of the activities. Similar effects of climatic conditions and the day of the week on the visitor numbers were found. But difficulties were found in the comparison of the different activities and crowdedness. Several publications and presentations were done and are planned. Some research results were presented at the fourth international conference on Monitoring and Management of Visitor Flows in Recreational and Protected Areas (MMV) in Italy in October 2008.

This report is in four parts. The first chapter describes the research goals and research approaches. The second chapter includes the data which were obtained and the discussion of the results. The third chapter describes the chronology of this project and conclusions. The additional chapter presents the profiles of the contributors.

Key Words : comparison of outdoor activities, climatic condition, Austria, Japan, visitor preferences, visitor motives, visitor behavior

AOKI, Yoji and ARNBERGER, Arne

Introduction

Dr.-Eng. AOKI, Yoji, National Institute for Environmental Studies, Tsukuba, Japan

In environmental planning, it is normal to adjust that all environmental standards are similar throughout the world. This criterion is warranted in the case of environmental pollution problems. For example, all human beings should be assured of a healthy environment for their daily life. But in the case of quality of life, the standard should be changed by the natural and cultural conditions. This modification is caused by the different natural and cultural backgrounds (Watsuji, 1997). For example, people enjoy open air for a longer term in a warmer area than in a colder area. To investigate this phenomenon, we focused on the activities in outdoor or open space areas and intended to measure the frequency of the recreational activities. We had some experience to measure and to analyse the activities (Kanbe 1982, Aoki and Fujinuma 1997, Brandenburg 2001, and Arnberger 2003). The first trial research on this phenomenon was conducted by enthusiastic groups in Austria and Japan.

In 1970, Wilfrid KIRCHNER (1970) of BOKU showed details of park use, which were reported in the journal of AU. In the same period, Takasuke WATANABE of Tokyo Institute of Technology reported on a detailed analysis of visitors' behavior at the recreational sites in his doctoral thesis (Aoki, 2000). Two world advanced research projects were simultaneously studied in Austria and Japan. This interesting fact was found in 1984 by Yoji AOKI (2002) during his stay at Technological University of Munich. He published the report of the investigation methods of the recreational activities and delivered them throughout the world (Aoki, 2000). In January of 2002, BOKU organized the first international conference "MMV", Monitoring and Management of Visitors, on the research of recreational activities at BOKU in Vienna (Arnberger, Brandenburg and Muhar, 2002).

This stimulated proposals for research in both countries. The Japanese side proposed to JSPS, Japan Society of Promotion of Science, for a bilateral project in September of 2003 and was awarded a research grant from June of 2005 to March of 2007. The Austrian side proposed this project to FWF, Foederung der wissenschaftlichen Forschung, in October of 2004 and was awarded a grant from October of 2005 to January of 2008. This project focused on park use, because the former works had commonly investigated this activity. So we aimed to clarify the differences of outdoor activities in park areas between Austria and Japan.

This report will briefly give the results obtained by the scientists who joined the project and show some of the detailed data resulting from the investigation. Section one shows the profiles of the researchers who joined, and the second section the details of the procedure of the project. The third section shows the main result obtained in each research group, in a page only because of the shortage of publication and because some are yet under the judgement of journals. The fourth section shows the detailed data which were already reported in the publications or were possible to be open to the public.

The valuable appreciation on this report was given in the foreword by Ryutaro OHTSUKA; the president of National Institute of Environmental Studies and the important future prospect was given by the forewords of the Austrian side, Arne ARNBERGER and Andreas Muhr, Associate Professors of Bodenkultur University. The encouragement for our research was given by Mariko HANDA; she had studied and enjoyed open spaces of Vienna at Technological University of Vienna in 1980-1982.

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1. Research activities

In this project, each subject independently investigated outdoor activities and related information, and obtained useful results. Due to the shortage of the publication budget and the judgment under editorial boards of journals, each subjects reported in one page here. If you are interested in some subjects or need the paper published, please ensure the details of these studies asking the contributors directly. The name contributors, their titles, contact addresses and responsible sections are listed below (Alphabetical order).

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1.1 Comparative Study on Feeling of Seasons and Outdoor Activities in Seasons

Prof. Emeritus ASAKAWA, Shoichro, Hokkaido University, Spporo

Prof. BRANDENBURG, Christiane of University of Natural Resources and Applied Life Sciences, Vienna

Key Words: seasonality, seasonal preference, associated words, Japan, Austria

(1) Introduction: Although yearly climate changes are clear and four seasons are usually separated in temperate regions, people's perception of seasons may be different by countries and regions, because of many factors. Our objective in this study was to find out some factors which affect seasonal images and outdoor activities based on similar questionnaire surveys carried out in Japan and Vienna.

(2) Method: Students of the Department of Agriculture at Hokkaido Univ. etc. (N=261) and Univ. of Natural Resources and Applied Life Sciences in Vienna (N=65) were selected. The Japanese students were divided into Hokkaido (N=98) and Mainland (N=173). They were asked to respond about their hometowns.

(3) Results: The associated words of seasons are shown in Table 1. *Spring*: "Flowers" rank first in all regions. Japanese students especially associated "cherry blossom" and "cherry blossom viewing" was a typical activity in Japan. High rank of entrance/ graduation in Japan was because of the social system. *Summer*: Although "hot" was found in each region, "humidity/sweat" was found in Japan, because of the rainy season in "Mainland". The word "insects (mainly cicada)" was chosen often in Japan. *Autumn*: "Autumn colors" was found as the most popular phrase of autumn in all regions and going to see them was a typical activity in Japan. The characteristic word in Vienna was "fog" and that of Japan was "fruits." "Bicycling" and "wandering" were the main activities in Vienna. *Winter*: "Snow", "cold" and "skiing" were a common choice for winter in all regions. But their rates were lower in "Mainland" because of higher temperatures. "Kotatu" a traditional heater was in a high rank in Japan. "New Year's Day" and "Christmas" were higher in rank in Japan and Vienna respectively.

The relationship between the preference rating and the mean temperatures of months is as follows;
 $P=4.0012+0.0821T-0.0050(T-12.7979)^2-0.0004(T-12.7979)^3$ ($R^2:0.435$)

P: Preference ratings (7-points scale), T: Mean temperatures of months.

Some differences in preference of months and beginnings and endings of seasons by the regions were found.

Table 1.1 Associated words of each seasons (up to 3, %)

	Hokkaido	Japan	Vienna
Spring	flowers (84) thaw (34) entrance/graduation (23)	flowers (94) entrance/graduation (22) greenery* (19)	flowers (60) sun/light (29) greenery* (27)/warm(27)
Summer	sea/swimming in the ocean (47) hot (33) greenery* (17)	hot (46) sea/swimming in the ocean (34) insects (24)	hot (53) swimming/bathing (29) sun/light (37)
Autumn	autumn colors (55) fruits (17) fallen leaves (17)	autumn colors (58) fruits (17) fallen leaves (17)	autumn colors (58) fallen leaves (20) fog (19)
Winter	snow (74) cold (33) skiing/snowboarding (24)	snow (50) cold (38) skiing/snowboarding (13)	snow (72) cold (59) skiing/snowboarding (20)

*include some plants

1.2 An analysis of visitor characteristics and visit patterns in Noppro Park in Sapporo

Associate Prof. AIKOH, Tetsuya of Hokkaido University

Key Words: visit pattern, Noppro Park, video monitoring

Most developed countries are facing an unprecedented rapid increase in the numbers of elderly people, with 23% of the population of Japan currently being at least 65 years of age. This rise has led to a diversification of recreational activities in natural areas. In our rapidly aging society, demands for public parks situated close to residential areas is expected to increase, particularly in suburban forest parks with rich natural environments. It is anticipated that increasing demands and diversifying activities will lead to congestion and conflict in the near future.

Currently, basic data and analysis of the recreational use of suburban forest parks in Japan is relatively scarce. The objectives of this survey were therefore to explore visitor characteristics and analyze visit patterns in Noppro Forest Park, located close to Sapporo, which has a population of around 1.89 million. This 2,051 ha park is located about 10 km east of the city center. Video monitoring, observations of visitors and interviews were addressed at trailheads in spring and early summer in 2006. Interviewers located at two access points in the park asked visitors to complete a questionnaire regarding demographic information, past experiences of using the park, frequency of visits and mode of travel to trailheads.

The results indicated that 80% of observed visitors were walkers, followed by joggers, bikers, and dog walkers, that 80% of interviewed visitors were aged over 50 years, and that about 80% of interviewed visitors lived less than 30 minutes from the park. Nonetheless, 65% of the interviewed visitors drove to the trailheads. On the other hand, some visitors who lived much further from the park visited more than 100 times per year. From the results, visitors were characterized into groups according to time from home and frequency of visits, frequent visitors on foot, less frequent visitors on foot, frequent visitors by car, and less frequent visitors by car. Each of these groups was further categorized by the time of day of visit and by activities. The results are expected to be useful for managers and administrative bodies of similar areas to help solve management issues.

Table 1.2 Results of factor analysis of motivations for visiting

factors	items	mean	I	II	III
nature	nature	3.21	0.690	0.086	0.087
	scene	3.04	0.673	0.155	0.109
	learning	2.80	0.642	0.160	0.036
	rest	2.95	0.532	0.278	0.176
solitude	alone	1.73	0.067	0.732	0.148
	meditation	2.03	0.138	0.676	0.163
	urban escape	2.27	0.401	0.534	-0.008
	quiet	2.64	0.369	0.493	0.140
	decreasing stress	2.90	0.407	0.416	0.283
exercise	health	3.40	0.231	0.088	0.767
	sports	2.83	0.016	0.194	0.663

Cronbach's coefficient alpha 0.824

Motivations for visiting Noppro Forest Park, 1=least important - 4=very important

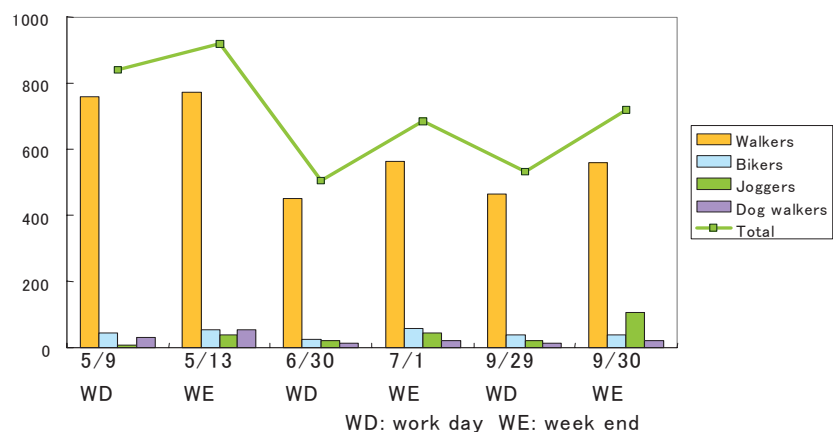


Fig. 1.1 Number of visitors in Noppro Forest Park

1.3 Quantitative evaluation of crowding and conflict perception in Nopporo Forest Park

Associate Prof. AIKOH, Tetsuya of Hokkaido University

Key Words: crowding perception, user conflict, Nopporo Forest Park

In our rapidly aging society, it is expected that demands for natural recreational areas nearby residential areas will increase, leading to an increase in the number of visitors. The types of visitor activity and visitor behavior are expected to vary, to include, for example, bicycling, jogging, wild plant picking, and dog walking. In such areas, this diversification of activity, combined with an increase in visitor numbers, is expected to detract from the recreation experiences the park should provide. The Nopporo Forest Park is designated as a natural park and, as such, the park is required to provide scenic beauty and a natural experience. However, as it is located close to Sapporo, which has a population of approximately 1.89 million, the park also serves as an urban park.

The purpose of this study was to estimate visitor preferences toward activity types and congestion in a natural park located close to a big city, using an image-based stated choice approach. Developed images depicted different usage levels of various activity types (walking, bicycling, jogging, wild plant picking, and walking with a leashed or unleashed dog) and different numbers of users. The experiment was administered on site to 401 park visitors. Visitors were asked to rank three images in their preferred order. Data provided by 322 of the 401 visitors was analyzed using econometric models.

The quantitative results suggest that, compared with the most common and usual activity of walking, certain activity types and behaviors have considerable influence on recreation experience. In particular, wild plant picking and dog walking were found to increase perception of crowding by 4-fold. Moreover, the socio-demographics of visitors influenced their perception toward different activity types and behaviors. These findings suggest that park managers can greatly improve recreational experience by controlling undesirable visitor activity and visitor behavior.



Fig. 1.2 An example of computer-generated choice set images

Table 1.3 Effects of the five variables on crowding

Attribute	coefficient
Number of walkers	-0.24**
Number of joggers	-0.24**
Number of bikers	-0.47**
Number of dog walkers	-0.84**
Number of plant pickers	-0.89**

** $p < .01$ t-test

1.4 Comparison of wandering in Europe and Japan

Prof. FUJITA, Hitoshi of Aomori University

Associate Prof. ARNBERGER, Arne, University of Natural Resources and Applied Life Sciences, Vienna

Key Words: wandering in nature, Europe, Japan

Japanese don't walk in nature as well as Europeans. But Japanese like walking. So I have done questionnaire surveys of walking to 249 Europeans, e.g., Leuven in Belgium, Munich in Germany, Peak District National Park in U.K., and Venice in Italy, etc. and to 424 Japanese in 1990. The surveys were supported by Mr. Roger Deneef and Dipl.-Ing. Winfrid Jerney and we asked people who met at the famous recreation sites e. g. Isar river in Muenchen, Oirase stream in Aomori and etc. by interview method. As a result, 32% of Japanese children (10-14 years) enjoy taking a walk of 1 hour compared with 59% of Europeans of the same age who enjoy walking. This result also affects adults. In childhood, 37% of Japanese enjoy walking compared with 80% of Europeans. So it is very important to develop good habits of walking from childhood. This was also observed in average time of walking 1 hour and 5 minutes for Europeans, and 36 minutes for Japanese. In 2006, the average time of 41 Austrians 20-39 years old was observed at 55.6 minutes in Vienna by Dr. Arne Arnberger using a questionnaire test to the students at Bodenkultur University in Vienna.

Table 1.4 Wandering time in Europe

	10-14 year old children in Japan	10-14 year old children in Europe	15-19 year old students in Japan	15-19 year old students in Europe	more than 20 year old adult in Japan	more than 20 year old adult in Europe
more than 2hour wandering about 1hour		22	22	10	7	27
30minutes wandering do not walking		31	21	11	16	36
total		53	14	15	14	47
		60	16	50	23	59
total		166	73	86	60	169
						115

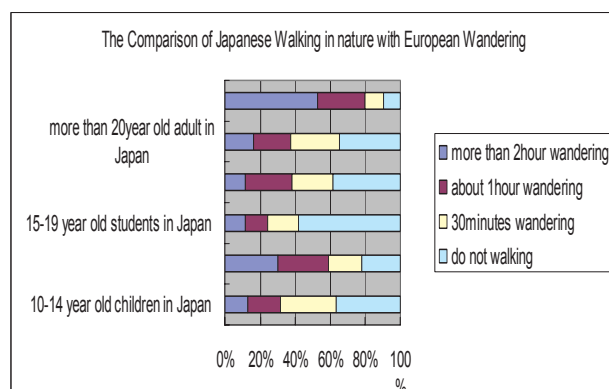


Fig. 1.3 Wandering time in Japan

Table 1.5 Wandering time in Vienna

hours/day	persons
0	7
half-hour	12
1 hour	12
2 hours	5
More than 3 hours	5

Table 1.6 Reasons of wandering by Europeans (1990, 1995)

- Leave from the civilization
- ◆ In the forest, I'm alone and peace, there is no stress, no crowds.
 - ◆ In nature, there are not many people. (Belgian)
 - ◆ I enjoy the nature peace.
 - ◆ Because I like to walk alone.
 - ◆ I enjoy the wonder of nature. (Welshman)
 - ◆ I love wildlife. (British)
 - ◆ I like nature life. (Belgian)
 - ◆ I feel most at home and relaxed and happy there. (Scot)
 - ◆ Jesus be as I walk in nature. (Irishman)
 - ◆ I can do a lot of experiences when I am away from civilization. (2 respondents)
 - ◆ It's my need!
 - ◆ Nature has the best answer for my needs. (Belgian)
 - ◆ Nature talks to me.
 - ◆ You are alone in nature with animals and flowers. (Belgian)
 - ◆ Because there are few cars and motorcycles.

Thinking

- ◆ Collect thoughts.
- ◆ I can spend time freely in a forest.
- ◆ I can be in solitude.

Quietness (calm)

- ◆ I enjoy walking in the countryside because it's peaceful and beautiful.
- ◆ There is no noise as in the city.
- ◆ Nature is very quiet.
- ◆ Nature is calm and quiet.
- ◆ Nature is solitude and there is quietness.
- ◆ It is quiet (and cool) there. (Belgian)
- ◆ It is quiet and healthy. (Belgian)
- ◆ I love silence. (Belgian)
- ◆ Quietness (Tranquility) is necessary for me. (Weil ich meine Ruhe habe.)
- ◆ I don't like the noisy, smelly, crowded streets of cities.

1.5 Comparison of the Use Patterns of Kairakuen Park and Schönbrunn Garden

Prof. KOYANAGI, Takekazu, Ibaraki University

Lecturer Dr. KUWAHARA, Yuji, Ibaraki University

Dr. ISHIUCHI, Teppei, Ibaraki University

Prof. ARNBERGER, Arne, BOKU-University of Natural Resources and Applied Life Science, Vienna

Key Words: park use, Kairakuen, Schönbrunn Garden

We measured visitors' activities in Kairakuen Park at the two terms of observation, i.e., at the term of Plum-Blossom or Azalea Festival and the ordinary time. We investigated the visitors' attributes and their curiosities, and their behaviors using seven interview surveys from December 2005 to March 2007. Table 1 shows the summary of the surveys, and Fig. 3.5 shows the frequencies of wandering behavior (People enjoy azaleas and sightseeing) and Fig. 3.6 shows the frequencies of walking (People enjoy only walking).

At Schönbrunn Garden, most tourists walked along the main street that runs from the entrance in front of the palace to the Gloriette and rarely visited to areas beside it. The local residents avoided using this entrance to escape from many sightseers. They often used the Maria Theresia Gate, the Meidlinger Gate or the Hietzinger Gate, which accepted fewer tourists. They also avoided walking along the main street which was crowded with sightseers. This similarity was also found in the local visitors of Kairakuen.

Table 1.7 The summary of the surveys

Survey in December 2005	Event	None (winter)	Survey in October 2006	Event	None (autumn)
	Number of Respondents	108 people		Number of Respondents	169 people
	Questionnaire methods	Interview		Questionnaire methods	Interview
	Date of survey	December 28, 2005, Sunday		Date of survey	October 28, 2006, Saturday
	Area covered	Kairakuen Park		Area covered	Kairakuen Park
	Weather	fair		Weather	fair
	Temperature	4°C/0°C		Temperature	21°C/9°C
Survey in May 2006	Event	Azalea Festival	Survey in December 2006	Event	None (winter)
	Number of Respondents	121 people		Number of Respondents	110 people
	Questionnaire methods	Interview		Questionnaire methods	Interview
	Date of survey	May 6, 2006, Saturday		Date of survey	December 23, 2006, Saturday
	Area covered	Kairakuen Garden		Area covered	Kairakuen Park
	Weather	fair		Weather	fair
	Temperature	25°C/13°C		Temperature	12°C/0°C
Survey in June 2006	Event	None (spring)	Survey in March 2007	Event	Plum Festival
	Number of Respondents	169 people		Number of Respondents	62 people
	Questionnaire methods	Interview		Questionnaire methods	Interview / Pursue survey
	Date of survey	June 24, 2006, Saturday		Date of survey	March 16, 2007, Friday
	Area covered	Kairakuen Park		Area covered	March 17, 2007, Saturday Kairakuen Garden
	Weather	fair		Weather	fair
	Temperature	26°C/19°C		Temperature	March 16, 11°C/0°C March 17, 9°C/2°C
Survey in September 2006	Event	None (summer)			
	Number of Respondents	147 people			
	Questionnaire methods	Interview			
	Date of survey	September 2, 2006, Saturday			
	Area covered	Kairakuen Park			
	Weather	fair			
	Temperature	27°C/16°C			

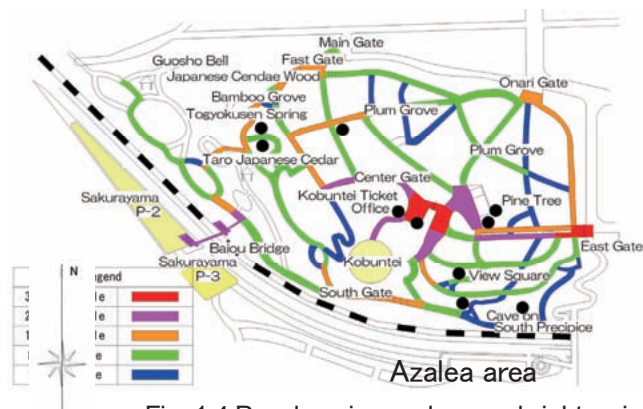


Fig. 1.4 People enjoy azaleas and sightseeing



Fig. 1.5 People enjoy walking

1.6 The Influence of Motorized Access on Hikers' Route Selection at Mt. Tsukuba

Prof. ITO, Taichi, University of Tsukuba

Dr. RYUGO, Mariko, University of Tsukuba

Key Words: car-dependency, circulation, motorized access, Mt. Tsukuba, route selection, trailhead, walking experience

Mt. Tsukuba, designated as a part of a quasi-national park of Japan, has been a major outdoor recreational area since the 730s. As a result, in spite of its modest altitude of 877 meters, diverse hiking routes to its twin peaks have been developed from all directions. Thus, the hikers have diverse route options to choose from almost 200 combinations at Mt. Tsukuba. The authors surveyed their route choices and reasons focusing on the mode of traffic access, in 2003 and 2005 by interviews. The survey revealed that their choices are quite limited, in spite of diverse possibilities (Fig. 3.7). Popular trailheads are located close to cableway terminals with large parking lots. Such a trend brought crowding and soil impact on specific trails. Further analysis on the route selection patterns among visitors showed that almost three fourths of them took different routes for descending (Fig. 3.8). It is understandable that visitors prefer to choose a different route on their way back to enjoy diverse environment and landscape. The traversing may supply more diverse experiences than circulating, but those who left their cars have to walk on roadways to recover them. Thus, car-dependent hikers must have chosen a circulating route as a compromise. It also became clear that almost 70% of visitors came to Mt. Tsukuba by their own cars while the shuttle bus service from the railway station had become available. Those who came by their cars have more freedom to choose diverse trailheads, compared with bus passengers, because bus stops are limited to two major trailheads. However, while 70% of car-dependent hikers took exactly the same route to descend, 70% of those who arrived by bus chose a different route on their way back. From these data, it can be said that automobiles restrict visitors' routes once they leave their car near trailheads; Visitors have just two choices, a simple return or a circulating route with relatively shorter distance from the starting trailhead abandoning other combinations. Comparisons with Vienna's Forest revealed the importance of traffic access. While the Forest is located at the urban fringe and accessible by diverse public transportation, Mt. Tsukuba has just one bus route with a distance of 20 km.

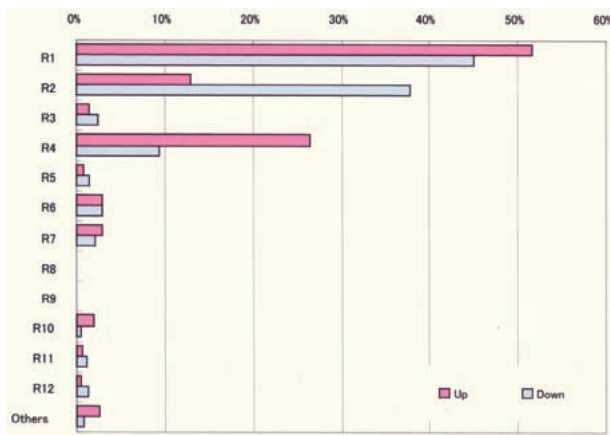


Fig. 1.6 Ratio of Visitors on Each Route

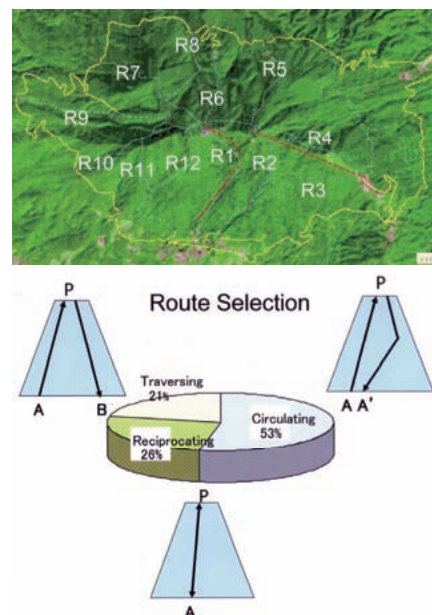


Fig. 1.7 Three Patterns of Visitors' Route Choice (N=485)

1.7 The change of environment influences to the user behavior at the city park

Prof. Dr. OBASE, Reiji, University of Tsukuba
 UENO Tomoya of University of Tsukuba

Key Words: urban park, user behaviour, Doho Park

(1) Research background

The city park was designed in artificial form 26 years before. The greenery was changed by the growing of the vegetation. The facilities in the garden were becoming decrepit and are being renewed now. The park environment has changed by the passage of time. The effects of environmental change were examined by the user behavior.

(2) Method of research

The aging of the environment and the aging of the user behavior were examined by the mapping methods. Doho Park opened in 1980 with the playing areas e.g., soccer field and baseball field near the Doho Swamp. It has also various spaces e.g., athletics, open area which provided various user behaviors.

(3) Analysis

The environmental factors and user behavior are examined by 10m mesh in the map and obtained numerical data in each mesh. The data of 1982, referred from Kanbe (1982), was compared to the data of 2006.

(4) Conclusion

The following 2 points are given to it as a conclusion of this research.

Growing of trees reduced the variety of the user behavior.

The decrease of lawn at the water side caused the user behavior to be monotonous. Then the variety of the use behavior was lost by the decrease of the lawn area.

The lawn area should be preserved to keep various activities and behavioral pattern of users.



Doho Park 1981



Doho Park 2006

Fig. 1.8 Change of landscape at Doho

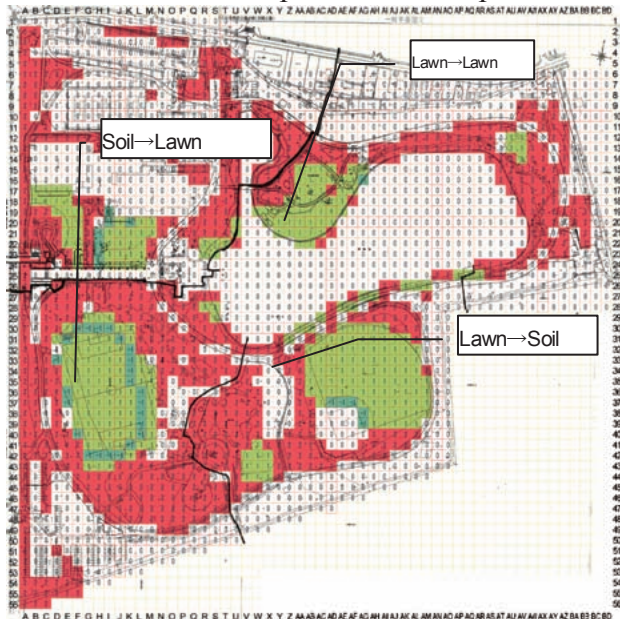


Fig. 1.9 Lawn area changes into soil in 24 years

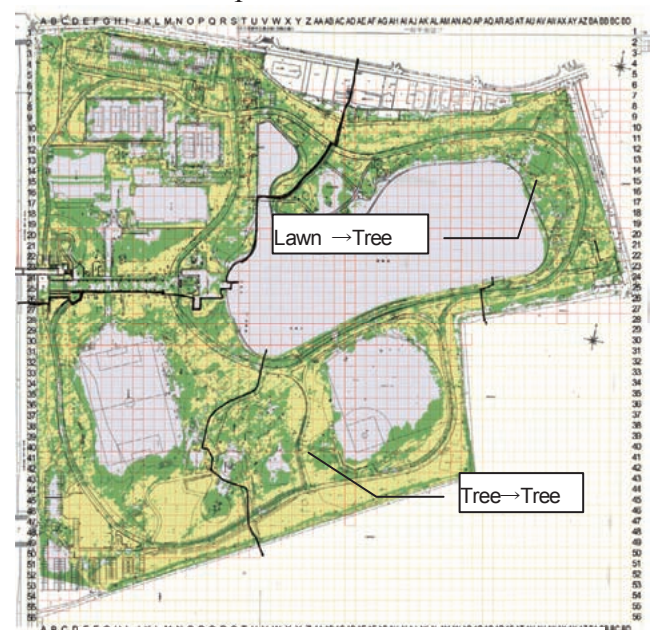


Fig.1.10 Lawn area changes into trees in 24 years

1.8 Distribution and Preference of Visitors at Yoyogi Park, Tokyo Metropolitan Park Authority

Prof. TASHIRO Yoritaka Graduate School of Horticulture, Chiba University

INOUE, Masato Graduate School of Horticulture, Chiba University

Key Words: park user, visit pattern, landscape quality

(1) Survey structure

The research was conducted to show the visitors performances through the following items in the form of an on-site survey; group organization, access, time required for the visits, reason of selecting this park, activities, frequency of visits and the degree of satisfaction to the park use, etc.

(2) Visit pattern of users at Yoyogi Park are briefly shown by group organization, access tools and frequency of visits were made clear. These show that, even in a large park like this in Tokyo, most users are neighborhood residents who travel on foot alone or with family accompanying. Neighboring users visit at least two or three times a week, and there is no evident pattern of visiting the park by the difference of distance.

(3) Users are satisfied with the following settings of the park, the place of walking and resting, natural environment, openness, landscapes. Satisfaction to the park settings were known by the rate of individual items, as shown in table 1. The evaluation pattern is to be separated into two groups; one is highly satisfied, and other is less satisfied. The former can be represented by the natural landscape quality of the park which seems to be the most important factor the park can offer to the users. Noise, homeless, toilets, and lack of management of facilities, on the other hand, are given a negative evaluation by the users. Users' attitudes for the park are divided into two aspects; one is environment-oriented satisfaction, and the other is the use-opportunity oriented satisfaction.

(4) Most typical acceptance of the park setting by the users to this park is the scale merit with rich natural landscape which residents can enjoy only in a park like this. When managed properly, the wide open landscape with grass and tall trees attracts users from nearby districts around the park.

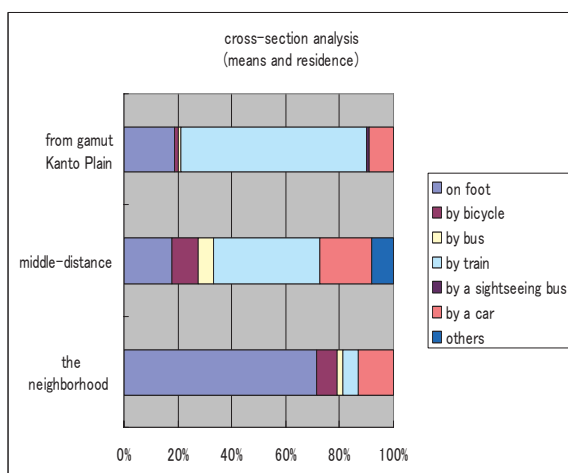


Fig. 1.11 Visit means

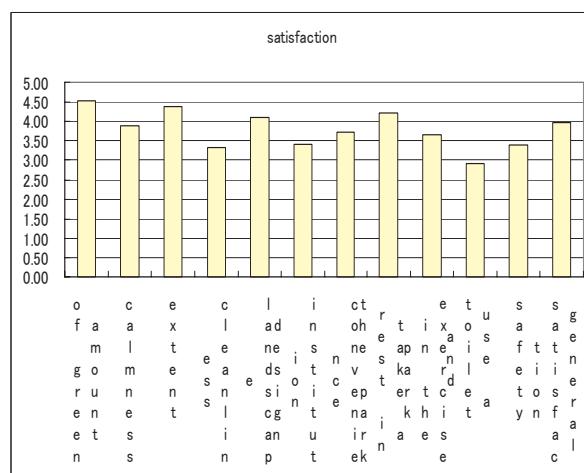


Fig. 1.12 Satisfaction of park settings

1.9 Field Study Visit to Wien and its Environs, 15-18 December 2005

Prof. USUKI, Mitsuo, Toyo University,
KIKUCHI, Masayoshi, Tokyo Metropolitan Government,
OGUCHI, Suguru, Tokyo Institute of Technology

Key Words: on-site investigation, Vienna parks

(1) National Park Donau-Auen (IUCN Category II, 100km²) is an urban-type natural park, scattered-style established on a flooding field of Donau River. It is therefore difficult for the survival of big trees with long lives whose landscape looks like the secondary forest of Japan. Park Authority of Wien City provides several devices for nature interpretation, including large sample of tree-roots, soil profile and educational panels along nature trails, as well as for park utilization, including jogging courses with dog-hike, cycling courses, permanent facility for barbecue and public lavatory, the management of which is one of the hardest tasks according to the authority.

(2) Marchfeldkanal was created for water provision for the fertile agricultural area of north-eastern Wien and also for mitigating floods from the lower Wien to Bratislava which nowadays became citizen's recreational site, especially walking and cycling. The canal has a high value as green corridor for wildlife, since both sides of the canal have already been developed for agriculture fields. A private company manages this park and canal water rather nicely, under subsidies provided by Wien City Authority.

(3) Der Wiener Prater is the widest park (IUCN Category V, 6.5km²) in the city center of Wien, located along the flooding field of Donau River which was used as hunting grounds of Austrian Emperor, and nowadays used for citizen's recreational site including jogging, cycling, horse riding, football (outside of lawn), picnic and the most popular dog-hike. Since the park receives around 5 million visitors annually, the City Park Authority casts management staff of 150 to this park, among them 50–60 landscape gardeners during summer season and around 30 in winter season.

(4) The most different aspect of parks in Vienna and in Tokyo is the existence of sports facilities. Tennis courts and ballparks are set up at Hibiya Park, Ueno Park, and Yoyogi Park in Tokyo which are typical parks in an urban center. Sports facilities are not found, although restaurants and amusements, etc., are established in Prater Park, a typical park in Vienna. This seems a different use of the park, based on different cultures, and it profits significantly to Tokyo parks than those of Vienna.



Fig. 1.13 Views of visiting areas

Loubau National Park

Marchfeldkanal

Der Wiener

1.10 Seasonal activities and impression in Vienna

Prof. BRANDENBURG, Christiane, University of Natural Resources and Applied Life Science, Vienna
 Prof. Emeritus ASAKAWA, Shoichiro, Hokkaido University.

Key Words: seasonal activities, seasonal impression, Vienna

Among other questions, students of the University of Applied Life Sciences, in Vienna, Austria have been asked to list their main impressions of the four seasons. In Japan the same procedure has been arranged at three universities distributed over the islands of Japan. 64 Viennese and 261 Japanese questionnaires have been used for the analysis.

The terms of the associations towards the seasons have been aggregated and generic terms have been identified. The investigation of the terms, considering only terms, which are mentioned more than 3 %, shows, that winter and summer are deeply connected with climatic phenomena as well as sport activities, whereas the changing seasons (spring and autumn) are connected with the status of the vegetation.

Overall the greatest number of notions for all seasons is climatic phenomena. Therefore it can be stated, that weather is the main factor to experience the seasons.

Analysing the performed activities, it is evident that more or less the same activities are popular in Japan and Austria. The changing seasons show some differences. During these seasons Japanese people enjoy nature phenomena, whereas the interviewed Austrians carry out seasonal indifferent sports like bicycling and walking.

Number of Respondents					
	Hokkai do	N.Main land	S.Main land	Japan	Vienna
male	64	66	46	176	24
female	34	28	23	85	41
Total	98	94	69	261	65

Spring		Summer		Autumn		Winter	
Japan	Vienna	Japan	Vienna	Japan	Vienna	Japan	Vienna
flowers (-ing) (94)	flowers (-ing) (60)	hot (46)	hot (51)	autumn colours (58)	autumn colours (56)	snow (50)	snow (73)
entrance/graduation (22)	sun/light (32)	swimming in the ocean (34)	swimming/... bathing (39)	fruits (17)	fallen leaves (32)	snow (50)	snow (59)
greenery (19)	greenery (27)	insects (24)	sun/light (37)	fallen leaves (17)	fog (19)	skiing/snowboarding (13)	skiing/snowboarding (21)

given in %, considering all mentioned terms up to 3 %

Fig. 1.14 Number of respondents

Fig. 1.15 Terms associated with seasons

Spring		Summer		Autumn		Winter	
Japan	Vienna	Japan	Vienna	Japan	Vienna	Japan	Vienna
cherry blossom viewing (29)	walking (49)	swimming (30)	swimming (77)	walking (16)	bicycling (38)	skiing/snowboarding (45)	skiing/snowboarding (43)
walking (20)	bicycling (44)	swimming in the ocean (22)	bicycling (44)	falling leaves viewing (14)	hiking (37)	snowball fights (10)	cross country skiing (44)
bicycling (9)	jogging (41)	soccer (10)	hiking (19)	soccer (11)	walking (35)	running/marathon (11)	skating (31)

given in %, considering all mentioned terms up to 3 %

Fig. 1.16 Activities performed during the seasons

1.11 Recreation use of urban parks in Vienna

Assoc. Prof. Dr. ARNBERGER, Arne, University of Natural Resources and Applied Life Sciences, Vienna

Dipl.-Ing. EDER, Renate, University of Natural Resources and Applied Life Sciences, Vienna.

Key Words: comparison of outdoor activities, crowding, visitor motives, use displacement

The main goal of the study was to compare visitor structures across several urban green spaces and to model social carrying capacities and use displacement of park visitors under explicit consideration of safety issues, crowding, user conflicts, park design and maintenance levels. On-site interviews were conducted in 8 parks using image-based stated choice methods with different trail use scenarios (Fig. 3.16). Additional research focused on cross-cultural differences between urban forest and historical park visitors between Japan and Austria. Four types of recreation areas in Vienna have been chosen for the project, ranging from small but heavily used inner urban parks to large peri-urban recreation areas with low visitation. Differences regarding social carrying capacities were found across the park visitors and between visitors asked in Sapporo, Nopporo Forest, and the Viennese Lobau Forest. Visitor motives varied across park types (Table 3.8) and depended on visitor origin, activity engaged in, etc. However, similar trends have been observed regarding historical park visitors differentiated into local residents and tourists for the Austrian Schönbrunn Park and the Kairakuen Park in Mito.



Fig. 1.17 Computer-generated trail use scenarios of choice models asked in Viennese recreation areas and in Nopporo Forest exploring park preferences and social carrying capacities.

Table 1.8 Visitor motives across four recreation areas (N=883); Answer scale: 1=unimportant, 4=very important.

Motives (mean)	Schönbrunn	Stadtpark	Upper Lobau	Lower Lobau
Recreation	3.5	3.2	3.6	3.4
Enjoy the park landscape	3.3	3.3	3.6	3.4
Experience nature	3.3	3.1	3.6	3.5
Health	3	2.7	3.4	3.4
Quietness	2.9	3	3.1	3.1
Sport/fitness	2.4	1.8	3.4	3.3
To be alone with my thoughts	2.4	2.5	2.5	2.6
Stress reduction	2.3	2.4	2.7	2.7
Escape from the city	2.2	2.3	2.5	2.4
Observing other people	1.9	2	1.3	1.3
Meeting friends, family	1.8	1.8	2	1.6
Solitude	1.6	1.8	2	2.2
To explore the park area	1.6	2	2.1	2.2
Dog walking	1	1.1	1.3	1.4

1.12 Effects of the weather condition on outdoor activities

Prof. BRANDENBURG, Christiane, University of Natural Resources and Applied Life Science, Vienna
 Prof. Dr. MATZARAKIS, Andreas, Meteorological Institute, University of Freiburg, Freiburg
 Dr.-Eng. AOKI, Yoji, National Institute for Environmental Studies, Tsukuba

Key Words: outdoor activities, weather condition, Austria, Japan

The influence of weather conditions on outdoor activities was investigated in three Viennese recreation areas by using long-term monitoring data of outdoor activities and external factors like the day of the week, human-biometeorological assessment of thermal perception as well as the actual weather conditions.

In Vienna the frequencies of the outdoor activities depend not only on actual meteorological variables like air temperature and precipitation, but rather on the thermal perception of the persons. The thermal perception and the implementation of precipitations, including the memory or history of thermal perception and the actual conditions, explain with a higher significance level the correlation between the amount of different outdoor activities and the weather conditions.

In Vienna the weather was considered in a highly differentiated way: meteorological elements (i.e., air temperature, short and long wave radiation, air humidity and wind speed) appeared in the models of the linear regression indirectly with the thermal comfort index “Physiological Equivalent Temperature (PET)”. In addition, precipitation and cloud cover, as well as the history of the weather, was entered directly into the models. The meteorological data are evaluated and PET is calculated by A. Matzarakis with the program RayMan.

In Japan, the meteorological elements appear directly in the quantification theory I (3.13). The snow depth increased the visitor numbers in Hokkaido and the Typhoon decreased it in Okinawa. Their effects are based on the climatic conditions.

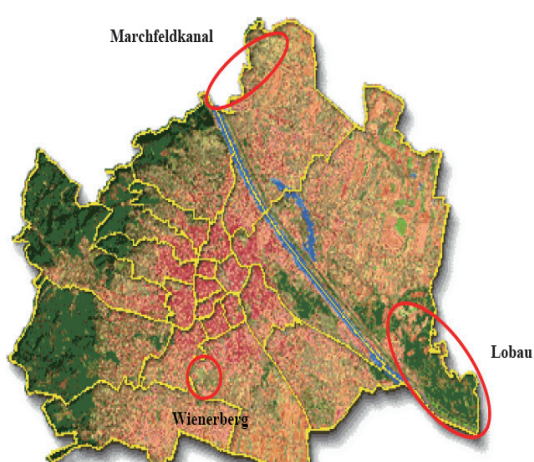


Fig. 1.18 Investigation areas in Vienna

Quelle: www.wien.at, changed

Extent of interference	LN Total number of visitors	LN Bikers	LN Hikers	LN Joggers	LN Dog Walkers
Workday, weekend and holiday	high	high	high	small	moderate
Precipitation	moderate	moderate	small	existent	existent
PET	high	high	moderate		existent
Cloud Cover	moderate	moderate	small		small
Interaction between weekday and PET	moderate		small		existent
Cloud coverage of the last 7 days			very small	existent	existent
Air Temperature of the last 7 days		moderate	very small		
Value of model	adj. R ² =.834	adj. R ² =.844	adj. R ² =.744	adj. R ² =.291	adj. R ² =.440

Fig. 1.19 Models for outdoor activities and the element of influence of the external factors

1.13 Effects of weather condition on visitor numbers

Dr.-Eng. AOKI, Yoji, National Institute for Environmental Studies, Tsukuba

Prof. IKEDA, Takayuki of University of the Ryukyus

KOAKUTSU, Sinji of Takino-Suzuran-Kyuryo National Government Park

Prof. BRANDENBURG, Christiane, University of Natural Resources and Applied Life Science, Vienna

Key Words : comparison of outdoor activities, climatic condition, Austria, Japan

In order to clarify the differences in outdoor activities between Austria and Japan, a cooperative research was conducted by BOKU - University of Natural Resources and Applied Life Sciences, Vienna and National Institute of Environmental Studies, Tsukuba. The Austria side had taken the visitor numbers and the feeling of congestion at 8 parks in Vienna. Japan side had involved 9 universities to take data of park visitors for the comparison of outdoor activities in Vienna. The Japan side obtained comparable data to Austria and the Austria side is now taking the data and analyzing the results. Different outdoor activities were found and the different modes of the activities were also found. The fluctuation caused by the weather and climatic conditions and the day of the week affected the visitor numbers at all parks. The result of Wienerberg Park in Vienna was similar to the result obtained at Takino Park in Sapporo.

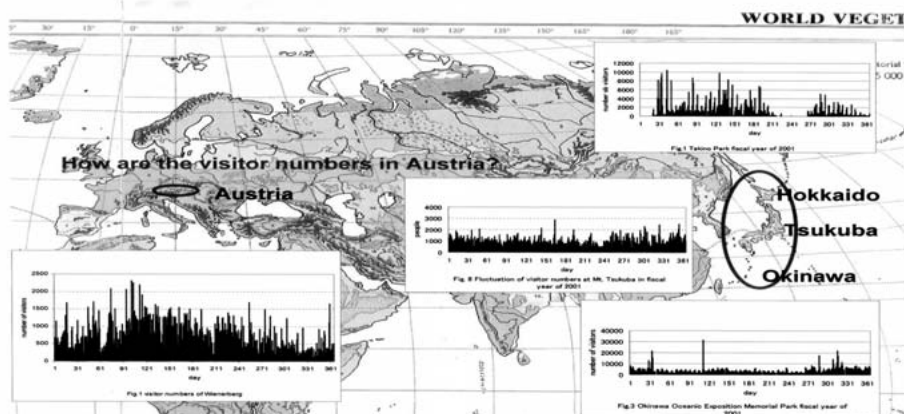


Fig. 1.20 Comparison of visitor numbers at the parks between Austria and Japan

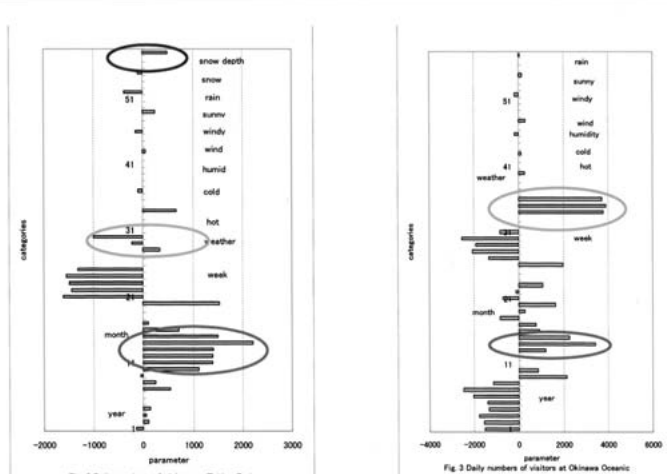


Fig. 1.21 Results at Okinawa Oceanic Exposition Memorial Park and Takino Park with Quantification Theory by Hayashi

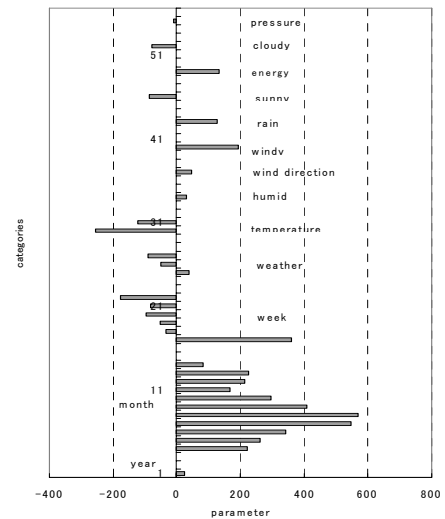


Fig. 1.22 Result at Wienerberg analyzed with Quantification Theory by Hayashi

1.14 Results in Innsbruck

Associate Prof. Dr. SOSHIRODA, Akira, Tokyo Institute of Technology.

Key Words : outdoor activities, summer season, winter season, Tirol

I stayed in Innsbruck from July 2006 to March 2007, and observed the Austrian outdoor activities and so on. As a result, I knew that they played outdoor activities eagerly in the natural environment, such as climbing, trekking and cycling, especially sunbathing in the summer.

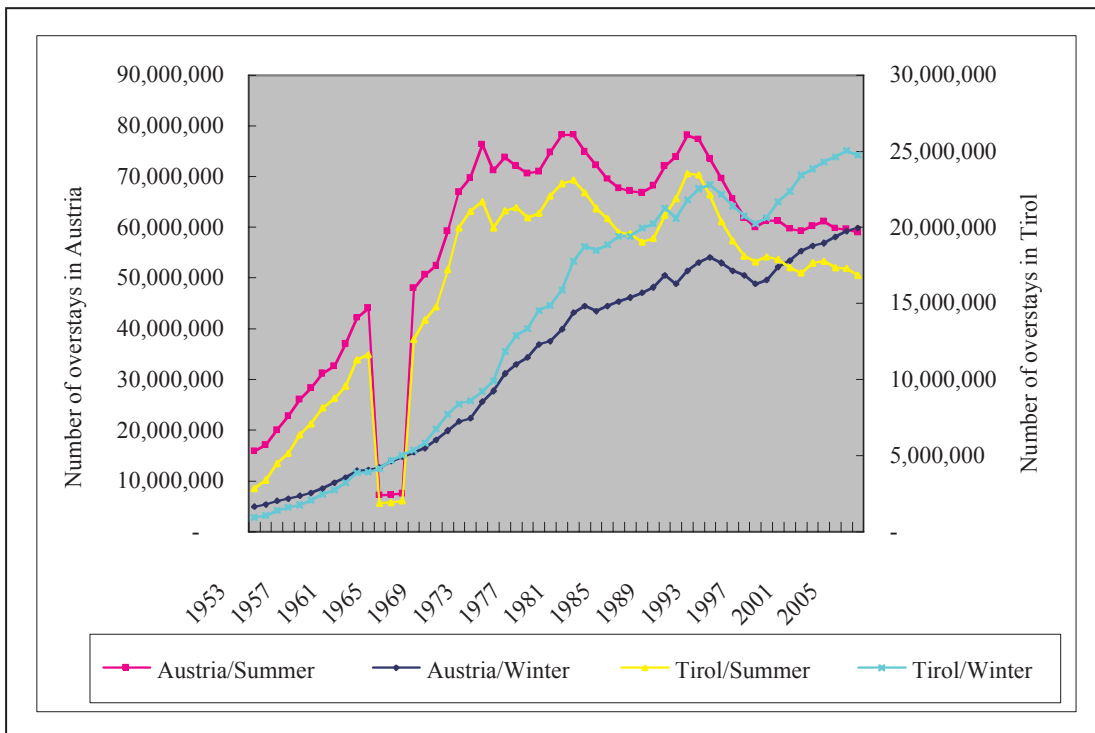


Fig. 1.23 Number of Tourists in Tirol and Austria

As for the number of overnight stays tourists of the Austrian whole area and Tirol region in summer season, both decrease. The other side, those in winter season increase steadily.

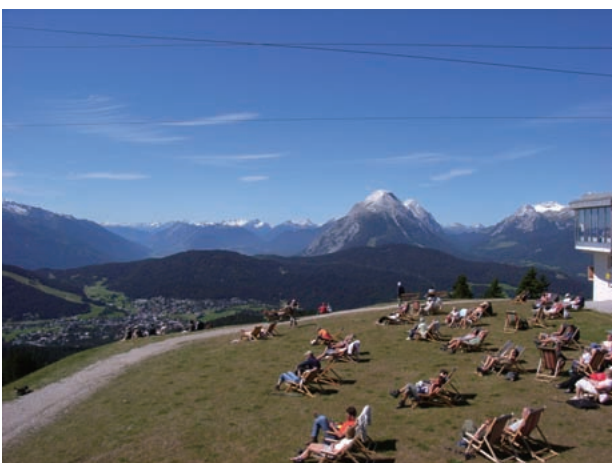


Fig. 1.24 Sun Bathing in Seefeld

It considers that it is important for the European in health to hit sunlight during summer season. It is one of the important motives that they play outdoor activities eagerly.

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2. Data obtained

In this program, data obtained were most important results. As we explained before, we have no definite method of measurement through the world. Then each researcher tried to measure the visitor's behavior from their own aspect. So the details of the data were very informative to next research projects. We listed here the data obtained and explained the kinds of data and term of data measured.

2.1 Sapporo, seasonal impressions

There are many factors that affect seasonal images and outdoor activities, such as climate, landscape, culture, etc. Although more detailed analysis is needed for discussion, the results shown here, will be a useful base for our comparison studies.

Similar studies about people's perceptions of seasons were carried out in Sapporo and Vienna. Both required participants to make responses to similar questionnaires about preferences of months and seasons, associated words from seasons and outdoor activities in seasons. Students of the department of agriculture at Hokkaido Univ., the department of environmental design at Hokkaido Institute of Technology etc. in Sapporo (N=261) were selected. A large part of the students at Hokkaido Univ. are from out of Hokkaido. The students were divided into three groups based on their hometowns. The three groups are named "Hokkaido" "Northern Mainland" and "Southern Mainland which includes Shikoku and Kyusyu islands" as shown in Fig. 4.1.1 and Table 4.1.1. They were asked to respond about their feelings about the seasons of their hometowns. To make a comparison between Japan and Vienna, some results from the survey in Vienna (see 4.10) are shown in same Tables and Figures.

The respondents were asked to write associated words their feelings of each season up to three. From Table 4.1.2 to 4.1.5 show the results of them. From Table 4.1.6 to 4.1.9 show the results about associated words for outdoor activities in each season.

Fig. 4.1.2 shows the cumulative percentages of respondents who feel the beginning and ending of each season by each region. Table 4.1.10 shows favorite seasons and Table 4.1.11 shows least favorite seasons by region respectively. About preference of month, they were asked to rate their preferences of each month by a scale 7 points for "strongly liked" to 1 point for "strongly disliked." Fig. 4.1.3 shows the grate differences in the ratings by region. Table 4.1.12 shows the relationship between some average monthly climate factors of typical cities in the groups (Sapporo, Tokyo, and Oosaka) and the preference ratings based on the survey in Japan because of some data in Vienna were not obtained. Fig. 4.1.4 shows the relationship between mean temperatures of months of typical cities in the groups (the three Japanese cities and Vienna) and the preference ratings. Based on the scattered points, an equation was able to set up. Fig 4.1.5 shows forecasted preference ratings by the equation.

Table 4.1.13 shows favorite and characteristic landscape in Hokkaido and not a few natural phenomena by seasons are listed

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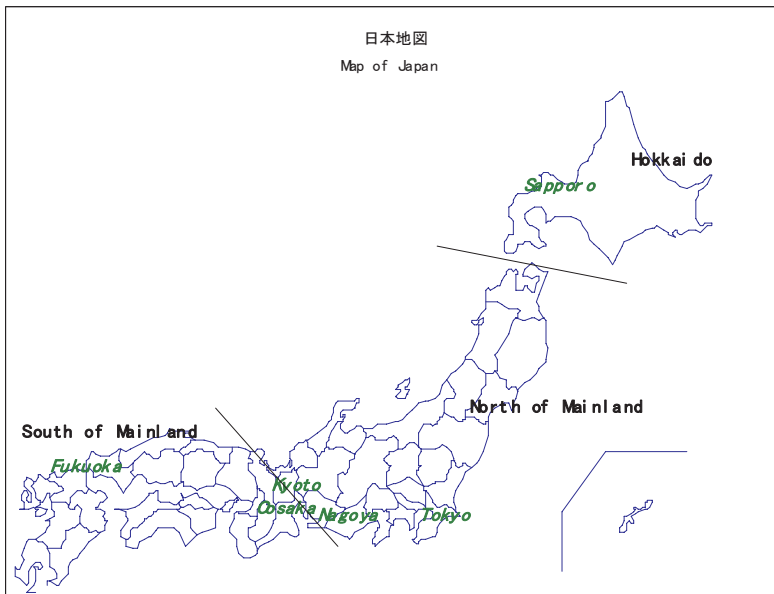
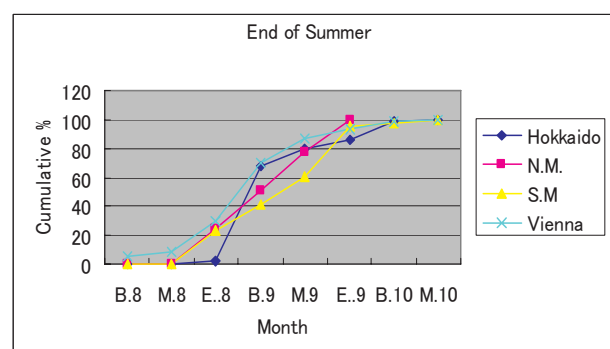
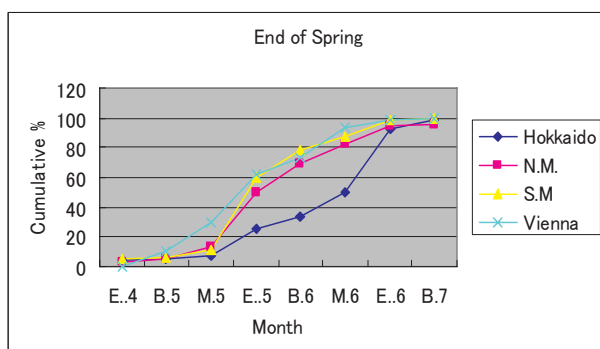
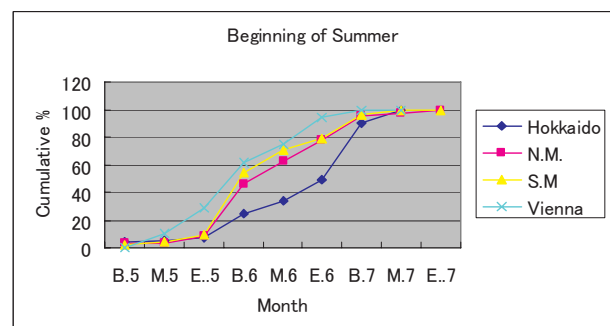
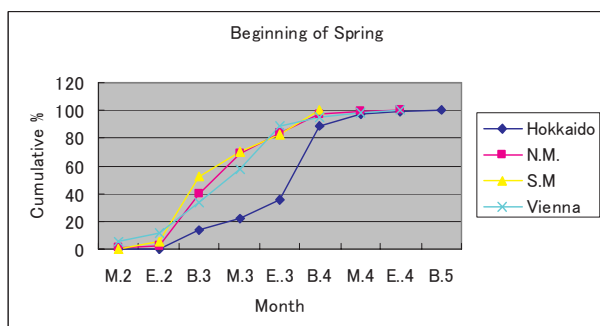


Fig. 2.1.1 Three groups of students by their home towns



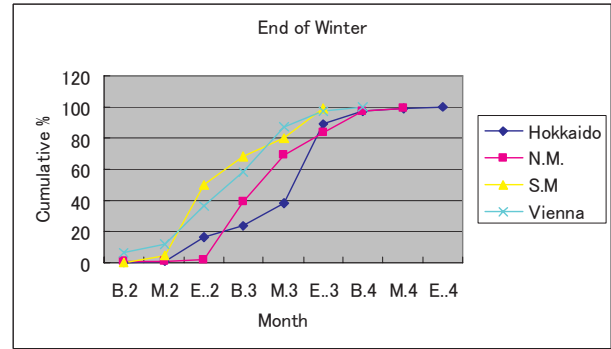
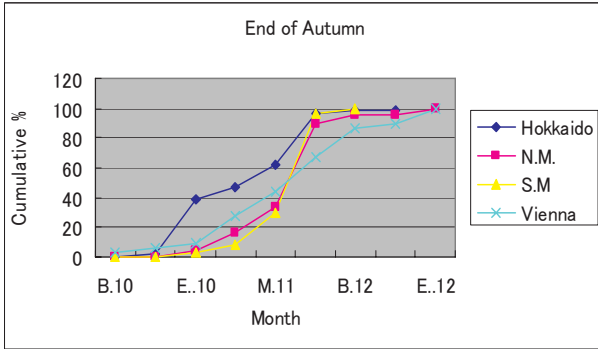
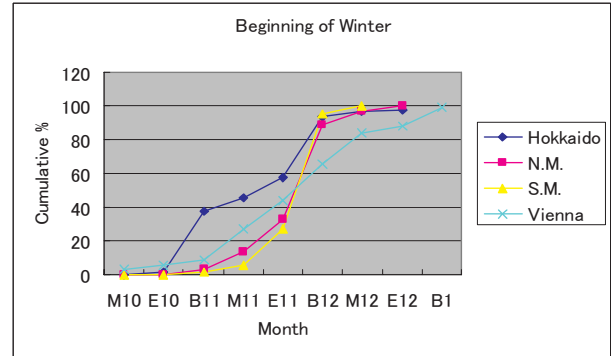
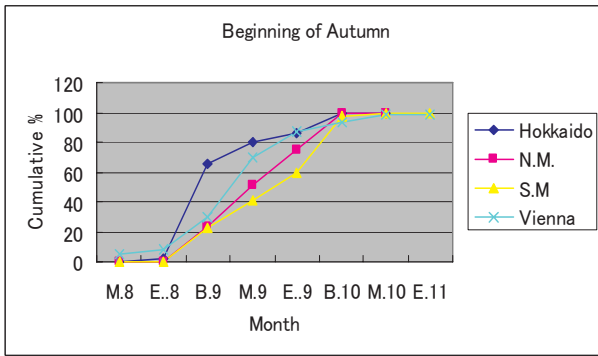


Fig. 2.1.2 Beginning and end of seasons

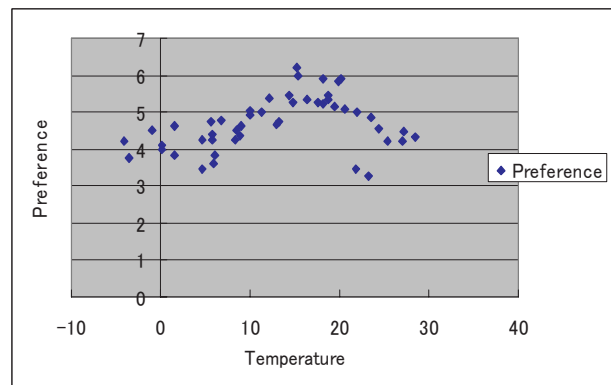
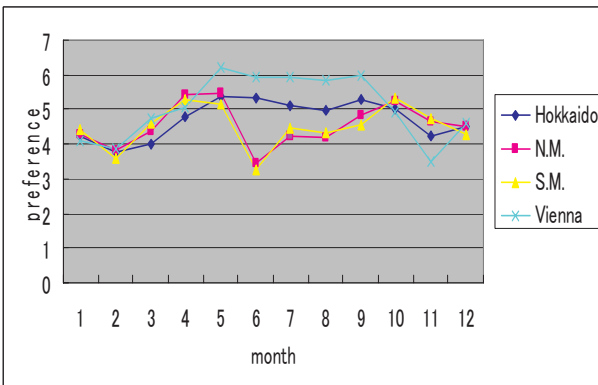


Fig. 2.1.3 Preference of months

Fig.2.1.4 Relationship between temperature and preference by months

Forecasted Preference by the Equation

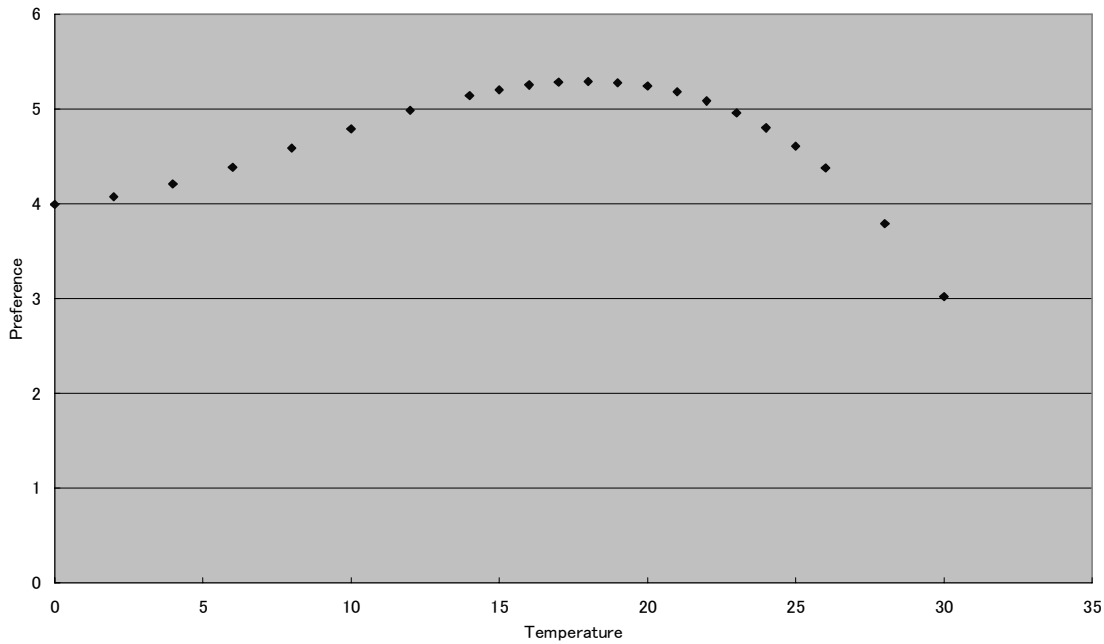


Fig. 2.1.5 Forecasted preference by the equation

$$(P=4.0012+0.0821T-0.0050(T-12.7979)^2-0.0004(T-12.7979)^3 \quad (r^2:0.435))$$

Table 2.1.1 Number of respondents

	Hokkaido	N.M.*	S.M.**	Japan	Vienna
Male	64	66	46	176	24
Female	34	28	23	85	41
Total	98	94	69	261	65

*Northern mainland Japan **Southern mainland Japan

Table 2.1.2 Associated words from "Spring" (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
flowers(84)	flowers(102)	flowers(95)	flowers(94)	flowers(60)
thaw(34)	greenery(23)*	warm(26)	entrance/graduation(22)	sun/light(29)
entrance/graduation(23)	entrance/graduation(22)	greenery(20)*	greenery(19)*	greenery(27)*
		entrance/graduation(20)		warm(27)

* include some kinds of plants

Table 2.1.3 Associated words from "Summer"(up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
swimming in the ocean(47)	hot(47)	hot(65)	hot(46)	hot(53)
hot(33)	humidity/sweat(34)	insects(32)	swimming in the ocean(34)	sun/light(37)
greenery(17)*	swimming in the ocean(33)	humidity/sweat(26)	insects(24)	swimming/bathing(29)

* include some kinds of plants

Table 2.1.4 Associated word from "Autumn" (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
autumn colors(55)	autumn colors(63)	autumn colors(64)	autumn colors(58)	autumn colors(58)
fruits(17)	fallen leaves(22)	fruits(17)	fruits(17)	fallen leaves(20)*
fallen leaves(17)	fruits(16)	cool(16)	fallen leaves(17)	fog(19)

*include leaves

Table 2.1.5 Associated words from “Winter” (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
snow(74)	snow(47)	cold(47)	snow(50)	snow(72)
cold(33)	cold(35)	Kotatsu*(23)	cold(38)	cold(59)
skiing/snowboarding(24)	The New Year(16)	snow(19)	skiing/snowboarding(13)	skiing/snowboarding(20)**

*A traditional heater in Japan

**include cross country skiing

Table 2.1.6 Associated activities in Spring (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
cherry blossom viewing(25)	cherry blossom viewing(33)	cherry blossom viewing(29)	cherry blossom viewing(29)	walk(49)
walk(20)	walk(25)	walk(11)	walk(20)	bicycling(43)
bicycling(9)	baseball/catch(9)	soccer(11)	bicycling(9)	running/jogging(38)

Table 2.1.7 Associated activities in Summer (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
sea/swimming in the ocean(20)	swimming(39)	swimming(36)	swimming(30)	swimming/bathing(74)
swimming(16)	sea/swimming in the ocean(20)	sea/swimming in the ocean(26)	sea/swimming in the ocean(22)	bicycling(47)
camping(15)	fireworks(9)	baseball/catch(10)	soccer(10)	wandering(18)

Table 2.1.8 Associated activities in Autumn (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
fall leaves viewing(14)	walk(17)	fall leaves viewing(19)	walk(16)	bicycling(37)
walk(14)	soccer(12)	walk(17)	fall leaves viewing(14)	wandering(37)
soccer(11)	fall leaves viewing(12)	soccer(11)	soccer(11)	walk(34)

Table 2.1.9 Associated activities in Winter (up to 3, %)

Hokkaido	N.M.	S.M.	Japan	Vienna
skiing/snowboarding(68)	skiing/snowboarding(42)	running/marathon(27)	skiing/snowboarding(45)	skiing/snowboarding(43)
shovel snow off(18)	snowball fighting etc..(20)	soccer(12)	snowball fighting etc.(10)	cross country skiing(42)
skating(10)	skating(13)	skiing/snowboarding(8)	running/marathon(11)	skating(29)
snowball fight, etc.(10)		tennis(8)		sledge(29)

Table 2.1.10 Favorite season (%)

	Hokkaido	N.M.	S.M.	Japan	Vienna
Spring	36.8	36.7	32.4	35.6	38.3
Summer	29.5	22.2	22.1	24.9	38.3
Autumn	21.1	32.2	38.2	29.6	8.3
Winter	11.6	6.7	5.9	8.3	8.3
others*	1.1	2.2	1.5	1.6	6.7
Total	100.1	100	100.1	100	99.9
N	95	90	68	253	60

*between two seasons, etc.

Table 2.1.11 Dislike season (%)

	Hokkaido	N.M.	S.M.	Japan	Vienna
Spring	14.9	8	11.9	11.7	1.9
Summer	23.4	41.4	41.8	34.7	5.7
Autumn	13.8	8	7.5	10.1	24.5
Winter	41.5	36.8	26.9	35.9	62.2
others*	0	4.6	6	3.2	0
non	6.3	1.1	6	4.4	5.7
Total	99.9	99.9	100.1	100	100
N	94	87	67	248	53

*rainy season, etc.

Table 2.1.12 Correlation coefficients between preferences and average climate factors of months

	Preference	Temperature	Precipitation	Relative humidity
Preference	1			
Temperature	0.33	1		
Precipitation	-0.1	0.59	1	
Relative humidity	-0.02	0.1	0.1	1

Table 2.1.13 Favorite and characteristic landscape in Hokkaido

Kinds of landscape	Favorite	Characteristic
nearby nature / greenery	17	4
urban park/green spaces	6	2
urban landscapes / events	9	5
rural landscape	19	37
long strait road	2	9
natural landscape	22	13
natural phenomenon	18	24
others	7	6
%(N)	100 (227)	100 (223)

Grade :() Gender :() male, () female

Questionnaire about Feeling of Seasons

1. Hometown:()

2. How do you separate 4 seasons in your hometown? Please separate them by lines such as "I-spring-I."

Month	1	2	3	4	5	6	7	8	9	10	11	12
Division	BME	BME	BME	BME	BME	BME	BME	BME	BME	BME	BME	BME

B: the beginning of the month, M: the middle of the month, E: the end of the month

3. How do you like each month in your hometown? Please show your degree from following points in each (). 7: I like very much, 6: like, 5: relatively like, 4: a tough decision, 3: relatively dislike, 2: dislike, 1: very dislike.

Jan.(), Feb.(), Mar.(), Apr.(), May(), June(), July(), Aug.(), Sep.(), Oct.(), Nov.(), Dec.()

4. What do you image from each season in your hometown? Please write up to three associated words for each season

Spring : () () () Summer : () () ()

Autumn : () () () Winter : () () ()

5. Please write your favorite and dislike season in your hometown respectively and write the reasons.

Most favorite season (), the reason being ()

Most dislike season (), the reason being ()

6. Please write outdoor activities (up to three) which you use to do in your hometown.

Spring : () () (), Summer : () () ()

(), Autumn : () () (),

Winter : () () ()

7. What is your favorite landscape in Hokkaido? What is the reason?

The most favorite landscape:(),

The reason:()

8. Please write of the most characteristic landscape in Hokkaido. Please indicate the reason.

The most characteristic landscape:(),

The reason:()

~Thank you for your time~

Fig. 2.1.6 A questionnaire used in Sapporo, (Translated in English)

2.2 Nopporo, visitor behaviors and numbers.

Data was not reported.

2.3 Questionnaire data at Nopporo

月 日 時 分
(記念塔口・大沢口・瑞穂口・登瀛別口・トド山口)

No.

野幌森林公園をご利用の皆様へ

この調査は、野幌森林公園が①どのような方々に、②どのように利用されているかを明らかにし、今後の公園管理に生かすことを目的としております。お答え頂いた内容は、統計的に処理されますので、一人ひとりの回答が公表されることはありません。ご協力よろしくお願いいたします。

調査主体：北海道大学大学院農学研究院 園芸緑地学講座 愛甲 哲也
 〒060-8589 札幌市北区北9条西9丁目 Tel/Fax 011-706-2452

◆どのコースを利用されましたか。案内図をペンでなぞってください。

1. あなた自身についてうかがいます。

■ 性別

1: 男性 2: 女性

■ 年代

1: 10代 2: 20代 3: 30代 4: 40代 5: 50代
 6: 60代 7: 70代以上

■ お住まいの郵便番号を教えてください。

■ 最終学歴

1: 小学校卒 2: 中学校卒 3: 高等学校卒 4: 専門学校・短大卒
 5: 大学卒 6: 大学院卒

■ 職業

1: 学生 2: 公務員・教員 3: 会社員・団体職員 4: 主婦・主夫
 5: 年金生活者・無職 6: その他() 7: 自営業

■ 今回はあなたを含めて () 人で来園
 ■ 男性 () 人 女性 () 人 小学生以下の子供 () 人
 ■ 同行者との関係について当てはまるものを全て選んでください。

1: ひとり 2: 家族、親類、友人 3: 学校のクラブ・サークル
 4: 社会人のクラブ・サークル 5: その他()

■ 今日こへ来るときの交通手段は何ですか。当てはまるものを全て選んでください。

1: 自宅から徒歩 2: 自転車 3: バイク・原付自転車 4: 自家用車
 5: タクシー 6: バス 7: JR 8: その他()

■ 自宅から野幌森林公園まではどれくらいの時間がかりましたか。
とだけ選んでください。

1: 30分未満 2: 30分以上1時間未満 3: 1時間以上1時間30分未満
 4: 1時間30分以上2時間未満 5: 2時間以上

■ 滞在時間はどれくらいでしたか。とだけ選んでください。

1: 30分未満 2: 30分以上1時間未満 3: 1時間以上2時間未満
 4: 2時間以上3時間未満 5: 3時間以上4時間未満 6: 4時間以上

2. 来園の状況についてうかがいます。

■ ここへは去年何回来られましたか。訪問回数を書いてください。一日に数回訪れた場合も回数に数えてください。(参考: 1年は52週間です。冬や休暇の時期なども考えてください。) とだけ選んでください。

1: 去年の訪問回数 約: 回
 2: 初めてここに来た 3: ここ3年来なかった 4: ここ5年来なかった
 2・3・4を選ばれた方→2つ設問をとりまして★印へお進みください。

■ どの時期によく来園されますか。当てはまるものを全て選んでください。

1: 1・2・3月 2: 4・5・6月
 3: 7・8・9月 4: 10・11・12月
 5: 年間を通じて差はない

■ どの時間帯によく来園されますか。当てはまるものを全て選んでください。

1: 6時前 2: 6～9時 3: 9～13時 4: 13～16時
 5: 16～19時 6: 19～22時 7: 22時以降

■ ★この入り口を選ぶ時に重視したものは何ですか。←
 当てはまるものを全て選んでください。

1: 自宅からの近さ 2: 公共交通機関の便のよさ
 3: イベントなどがあること 4: 目的のコースへの近さ
 5: 目的の施設への近さ 6: 他の利用者の少なさ
 7: 特になし 8: その他()

1

3. 今日の野幌森林公園を来園した目的のなかで重要だと考えたものと、実際利用してみて満足できなかったものについて、うかがいます。

■ 以下の各設問について、重要だと考えたかどうか、それぞれ番号をとだけ選んでください。

■ 満足できなかったものについて、当てはまるものを全て選んでください。

設問 (以下のすべての設問について「重要だと考えたかどうか」をお答えください)	重要だと考えたかどうか			満足できなかった	
	重要ではない	やや重要	非常に重要		
心と体を休める/休養	1	2	3	4	1
公園の風景を楽しむ	1	2	3	4	1
家族や友人と一緒に過ごす	1	2	3	4	1
他の人の活動を眺める	1	2	3	4	1
都会の生活から離れる	1	2	3	4	1
自然について知る/学ぶ	1	2	3	4	1
日常のストレス解消	1	2	3	4	1
自然に触れる/動植物を鑑賞する	1	2	3	4	1
一人で考え事をする/瞑想する	1	2	3	4	1
犬の散歩	1	2	3	4	1
静けさを求めて	1	2	3	4	1
健康のため	1	2	3	4	1
一人になる/孤独を楽しむ	1	2	3	4	1
運動する/スポーツ	1	2	3	4	1
子供の健康のため	1	2	3	4	1

■ 他ががっかりしたことがあったら、お書きください。

4. 混みぐあいについてうかがいます。

■ 今日の来園者数についてどう感じましたか。とだけ選んでください。

1: 非常に少ない 2: 少ない 3: やや少ない 4: ちょうどよい
 5: わずかに混んでいる 6: 混んでいる 7: 非常に混んでいる

■ 今日あなたが出会った来園者の数は、入園前の予想と比べるとどうですか。
とだけ選んでください。

1: 予想よりかなり少ない 2: 予想より幾分少ない
 3: 予想と同じ 4: 予想よりやや多い
 5: 予想よりかなり多い

■ これまで野幌森林公園が混みすぎていると感じたことはありますか。
 1: ある→下記の設問にお答えください。
 2: ない→一つ設問をとりまして、★印へお進みください。

■ いままで野幌森林公園が混みすぎていると感じた場合、どのようにされましたか。
 以下の設問に対して、当てはまるものを全て選んでください。

1: とくに何もなかった
 2: 予定を早く切り上げた
 3: 人通りのより少ないコースに変えた
 4: それ以来、そのコースに行かなくなった
 5: それ以来、訪れる時間を変えた
 6: それ以来、週末などの混む日を選ばなくなった
 7: 自転車から降りた
 8: 不満に思った/不愉快に感じた
 9: 他の公園に行くようになった 公園名は?()
 10: 予定していた活動内容を変えた

5. ★最後に野幌森林公園に期待することをお伺いします。←
 ご利用されていて感じたこと・これからの公園管理に期待することなどを自由に記入ください。

以上で質問は全てです。
 アンケートは回収箱に投入するか調査員に渡してください。
 調査にご協力いただきまして、ありがとうございます。

2

3

4

Fig. 2.3.1 Questionnaires used in Nopporo, (in Japanese)

2.4 Vienna, wandering

Data was not reported.

2.5 Kairakuen Park, Results of survey on visitors' activities

Table 2.5.1 The summary of the surveys

Survey in December 2005	Event	None (winter)	Survey in October 2006	Event	None (autumn)
	Number of Respondents	108 people		Number of Respondents	169 people
	Questionnaire methods	Interview		Questionnaire methods	Interview
	Date of survey	December 28, 2005, Sunday		Date of survey	October 28, 2006, Saturday
	Area covered	Kairakuen Park		Area covered	Kairakuen Park
	Weather	fair		Weather	fair
	Temperature	4°C/0°C		Temperature	21°C/9°C
Survey in May 2006	Event	Azalea Festival	Survey in December 2006	Event	None (winter)
	Number of Respondents	121 people		Number of Respondents	110 people
	Questionnaire methods	Interview		Questionnaire methods	Interview
	Date of survey	May 6, 2006, Saturday		Date of survey	December 23, 2006, Saturday
	Area covered	Kairakuen Garden		Area covered	Kairakuen Park
	Weather	fair		Weather	fair
	Temperature	25°C/13°C		Temperature	12°C/0°C
Survey in June 2006	Event	None (spring)	Survey in March 2007	Event	Plum Festival
	Number of Respondents	169 people		Number of Respondents	62 people
	Questionnaire methods	Interview		Questionnaire methods	Interview / Pursue survey
	Date of survey	June 24, 2006, Saturday		Date of survey	March 16, 2007, Friday
	Area covered	Kairakuen Park		Date of survey	March 17, 2007, Saturday
	Weather	fair		Area covered	Kairakuen Garden
	Temperature	26°C/19°C		Weather	fair
Survey in September 2006	Event	None (summer)		Temperature	March 16, 11°C/0°C
	Number of Respondents	147 people		Temperature	March 17, 9°C/2°C
	Questionnaire methods	Interview			
	Date of survey	September 2, 2006, Saturday			
	Area covered	Kairakuen Park			
	Weather	fair			
	Temperature	27°C/16°C			

Table 2.5.2 Gender of visitors

Date of survey	December, 2005	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival						Plum Festival
Gender	Shares						
male	65.7%	52.1%	43.2%	58.5%	52.1%	48.2%	64.5%
female	34.3%	44.6%	53.3%	41.5%	46.7%	50.0%	35.5%
unknown	0%	3%	4%	0%	1%	2%	0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=108	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.3 Age groups of visitors

Date of survey	December, 2005	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival						Plum Festival
Age groups	Shares						
10's	6.5%	3.3%	1.2%	0.7%	2.4%	0.9%	3.2%
20's	13.9%	18.2%	14.2%	15.6%	8.9%	18.2%	11.3%
30's	21.3%	14.9%	23.7%	17.0%	24.9%	20.9%	12.9%
40's	13.9%	17.4%	10.7%	10.2%	17.8%	12.7%	21.0%
50's	17.6%	24.0%	18.3%	19.7%	21.3%	15.5%	27.4%
60's	25.9%	18.2%	19.5%	25.2%	13.6%	18.2%	17.7%
70's	0.9%	4.1%	10.1%	10.9%	10.1%	10.9%	6.5%
unknown	0%	0%	2%	1%	1%	3%	0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=108	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.4 Departure place of visitors

Date of survey	December, 2005	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival						Plum Festival
Origin	Shares						
Inside Mito City	79.6%	32.2%	62.7%	67.3%	68.0%	78.2%	12.9%
Inside Ibaraki Prefecture (excluding inside Mito City)	12.0%	14.0%	21.3%	23.1%	21.3%	16.4%	19.4%
Outside Ibaraki Prefecture	8.3%	53.7%	16.0%	9.5%	10.7%	5.5%	67.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=108	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.5 Ratio of female visitors

Date of survey	December, 2005	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival						Plum Festival
Origin	Shares women						
Inside Mito City	33.7%	46.2%	41.5%	37.5%	50.4%	48.8%	37.5%
Inside Ibaraki Prefecture (excluding inside Mito City)	23.1%	29.4%	50.0%	16.7%	41.7%	55.6%	16.7%
Outside Ibaraki Prefecture	55.6%	47.7%	40.7%	40.5%	33.3%	50.0%	40.5%
	N=108	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.6 Means of transport to Kairakuen Park

Date of survey	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival					Plum Festival
Transport	Shares					
Car	51.2%	71.0%	64.6%	69.2%	64.5%	59.7%
Train	12.4%	7.1%	3.4%	5.3%	5.5%	19.4%
Route bus	4.1%	1.8%	1.4%	0.6%	0%	1.6%
Taxi	0.8%	0%	0%	0%	0%	0%
Tourist bus	7.4%	1.2%	0.7%	1.2%	0%	14.5%
Motorcycle	4.1%	0%	0.7%	0.0%	0%	0%
Bicycle	5.8%	5.3%	8.8%	4.7%	3.6%	0%
On foot	12.4%	12.4%	19.7%	18.3%	26.4%	4.8%
etc.	1.7%	1.2%	0.7%	0%	0%	0%
unknown	0%	0%	0%	0.6%	0%	0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.7 Frequency of visit and length of stay

Date of survey	Origin	Frequency of visit (people)					Length of stay (hrs.)
		First	Several times a year	Several times a month	Several times a week	Almost everyday	
Date of survey December 28, 2005							
	Inside Mito City	0	8	13	39	26	—
	Inside Ibaraki Prefecture	2	4	6	1	0	—
	Outside Ibaraki Prefecture	6	1	2	0	0	—
	Total N=108	8	13	21	40	26	Mean —
Date of survey May 6, 2006 Azalea Festival							
	Inside Mito City	4	10	19	2	4	1.6
	Inside Ibaraki Prefecture	3	8	4	0	2	1.6
	Outside Ibaraki Prefecture	53	10	1	0	1	1.6
	Total N=121	60	28	24	2	7	Mean 1.6
Date of survey June 24, 2006							
	Inside Mito City	3	12	26	49	16	1.7
	Inside Ibaraki Prefecture	5	14	12	3	2	1.8
	Outside Ibaraki Prefecture	17	8	1	1	0	1.8
	Total N=169	25	34	39	53	18	Mean 1.7
Date of survey September 2, 2006							
	Inside Mito City	0	11	32	34	22	1.6
	Inside Ibaraki Prefecture	5	15	9	4	1	1.8
	Outside Ibaraki Prefecture	10	4	0	0	0	2.0
	Total N=147	15	30	41	38	23	Mean 1.8
Date of survey October 28, 2006							
	Inside Mito City	2	11	37	46	19	1.8
	Inside Ibaraki Prefecture	8	12	11	4	1	2.2
	Outside Ibaraki Prefecture	15	2	0	1	0	1.5
	Total N=169	25	25	48	51	20	Mean 1.8
Date of survey December 23, 2006							
	Inside Mito City	3	4	25	32	22	1.6
	Inside Ibaraki Prefecture	4	5	3	6	0	1.9
	Outside Ibaraki Prefecture	5	0	0	1	0	2.2
	Total N=110	12	9	28	39	22	Mean 1.9
Date of survey March 16-17, 2007 Plum Festival							
	Inside Mito City	1	3	2	1	1	1.0
	Inside Ibaraki Prefecture	3	6	2	1	0	1.4
	Outside Ibaraki Prefecture	28	13	1	0	0	1.6
	Total N=62	32	22	5	2	1	Mean 1.3

Table 2.5.8 Objectives of visit

Date of survey	December, 2005	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival						Plum Festival
Activity type	Shares						
For sightseeing (For enjoying azaleas and plum trees)	8.3%	56.2%	8.3%	8.2%	8.3%	9.1%	90.3%
For a walk	59.3%	30.6%	49.7%	47.6%	53.3%	50.9%	8.1%
For jogging	1.9%	0.8%	8.9%	6.1%	5.3%	16.4%	0%
To let children play	11.1%	0.8%	16.0%	8.8%	14.2%	11.8%	0%
To appreciate nature	0%	4.1%	7.1%	4.8%	3.0%	0%	1.6%
To study	0%	0%	1.2%	0%	0%	0%	0%
To visit a shrine	0%	0%	1.2%	2.0%	1.2%	0%	0%
For event in Kairakuen Garden	—	0%	0%	0.7%	1.8%	3.6%	0%
To do shopping at street booths	—	0%	0%	0.7%	0%	0%	0%
To walk a dog	5.6%	0%	1.8%	4.1%	4.7%	6.4%	0%
For cycling	0.9%	1.7%	0.6%	2.0%	1.8%	1.8%	0%
To sports	1.9%	0%	0.6%	0.7%	1.2%	0%	0%
Others	11.1%	5.8%	4.7%	14.3%	5.3%	0%	0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=108	N=121	N=169	N=147	N=169	N=110	N=62

Table 2.5.9 Importance of motives of visiting Kairakuen Park and Garden

Date of survey	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007	
Event	Azalea Festival						Plum Festival
Motives	Mean						All
Enjoy the park landscape	3.2	3.1	3.0	3.2	3.0	3.1	3.1
Recreation	3.0	3.0	3.0	3.2	3.1	3.0	3.1
Experience nature	3.2	3.1	3.1	3.2	3.1	3.2	3.2
Health	2.7	3.0	2.9	2.9	3.1	2.7	2.9
Quietness	2.6	2.5	2.5	2.5	2.5	2.4	2.5
Sport/fitness	1.9	2.4	2.3	2.4	2.4	1.8	2.2
Stress reduction due to occupation	2.9	2.9	3.0	3.0	2.9	2.9	2.9
To be alone with my thoughts	2.1	2.1	2.0	2.3	2.4	1.9	2.1
Escape from the city	2.1	1.9	1.9	2.0	2.0	2.1	2.0
To explore the park area	2.6	2.5	2.6	2.7	2.5	2.5	2.6
Watching other people	1.6	1.9	1.7	1.6	1.8	1.6	1.7
Meeting friends, family	2.1	2.3	2.3	2.3	2.2	2.4	2.3
Solitude	2.2	2.3	2.3	2.3	2.2	2.1	2.2
Take children outside	1.9	2.4	2.3	2.7	2.4	1.8	2.3
Dog walking	1.3	1.7	1.7	1.8	1.9	1.4	1.6

Table 2.5.10 Importance of motives of visiting (The event time: Azalea and Plum-blossom Festivals)

The event time			
Motives	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Mean		
Enjoy the park landscape	3.2	3.2	3.2
Recreation	3.1	3.1	3.1
Experience nature	3.1	3.1	3.1
Health	2.5	2.5	2.5
Quietness	2.6	2.6	2.6
Sport/fitness	1.8	1.8	1.8
Stress reduction due to occupation	2.9	2.9	2.9
To be alone with my thoughts	2.1	2.1	2.1
Escape from the city	2.1	2.1	2.1
To explore the park area	2.6	2.6	2.6
Watching other people	1.5	1.5	1.5
Meeting friends, family	2.1	2.1	2.1
Solitude	2.1	2.1	2.1
Take children outside	1.7	1.7	1.7
Dog walking	1.3	1.3	1.3

Table 2.5.11 Importance of motives of visiting (The normal time: ordinary holidays)

The normal time without event (ordinary holidays)			
Motives	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Mean		
Enjoy the park landscape	3.1	3.1	3.4
Recreation	3.1	3.1	3.1
Experience nature	3.1	3.1	3.4
Health	3.0	2.6	2.7
Quietness	2.5	2.4	2.7
Sport/fitness	2.5	2.4	1.8
Stress reduction due to occupation	2.9	3.0	3.0
To be alone with my thoughts	2.1	2.2	2.3
Escape from the city	1.9	1.9	2.4
To explore the park area	2.6	2.6	2.8
Watching other people	1.6	1.6	2.0
Meeting friends, family	2.2	2.2	2.1
Solitude	2.2	2.3	2.3
Take children outside	2.6	2.4	1.9
Dog walking	1.8	1.6	1.4

Table 2.5.12 Impressions about congestion(the breakdown of all answers)

Date of survey	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival					Plum Festival
Origin	Impressions about congestion (mean)					
Inside Mito City	2.3	2.4	2.7	3.2	2.6	2.5
Inside Ibaraki Prefecture (excluding inside Mito City)	2.3	2.4	2.5	3.0	2.7	2.7
Outside Ibaraki Prefecture	2.1	2.0	2.3	2.1	2.3	2.3
All	2.1	2.4	2.6	3.0	2.6	2.4
	N=121	N=169	N=147	N=169	N=110	N=62

We tried to know how visitors feel about congestion in Kairakuen Park and Garden on the observation day. To know motives of visiting, we put points to each answer as follows.

- 1 point: Far fewer visitors than anticipated before coming to the garden
- 2 points: Fewer visitors than anticipated before coming to the garden
- 3 points: Roughly the same number of visitors that was anticipated before coming to the garden
- 4 points: More visitors than anticipated before coming to the garden
- 5 points: Far more visitors than anticipated before coming to the garden

Table 2.5.13 Impressions about congestion (the breakdown by departure place)

Date of survey May 6, 2006 Azalea Festival			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	2.6%	0.0%	10.8%
Fewer visitors than anticipated	71.1%	70.6%	73.8%
Roughly the same number of visitors	—	—	—
More visitors than anticipated	23.7%	29.4%	13.8%
Far more visitors than anticipated	2.6%	0%	1.5%
	N=121		

Date of survey June 24, 2006			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	6.7%	5.6%	18.5%
Fewer visitors than anticipated	49.0%	47.2%	63.0%
Roughly the same number of visitors	—	—	—
More visitors than anticipated	40.4%	47.2%	14.8%
Far more visitors than anticipated	3.8%	0.0%	3.7%
	N=169		

Date of survey September 2, 2006			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	6.1%	5.9%	21.4%
Fewer visitors than anticipated	34.3%	47.1%	57.1%
Roughly the same number of visitors	41.4%	38.2%	0%
More visitors than anticipated	17.2%	8.8%	14.3%
Far more visitors than anticipated	1.0%	0%	7.1%
N=147			
Date of survey October 28, 2006			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	5.2%	8.6%	22.2%
Fewer visitors than anticipated	17.4%	20.0%	44.4%
Roughly the same number of visitors	40.9%	34.3%	33.3%
More visitors than anticipated	28.7%	31.4%	0%
Far more visitors than anticipated	7.8%	5.7%	0%
N=169			
Date of survey December 23, 2006			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	12.8%	11.1%	16.7%
Fewer visitors than anticipated	31.4%	22.2%	50.0%
Roughly the same number of visitors	44.2%	55.6%	16.7%
More visitors than anticipated	10.5%	11.1%	16.7%
Far more visitors than anticipated	1.2%	0.0%	0.0%
N=110			
Date of survey March 16-17, 2007 Plum Festival			
Impressions about congestion	Inside Mito City	Inside Ibaraki Prefecture (excluding inside Mito City)	Outside Ibaraki Prefecture
	Shares		
Far fewer visitors than anticipated	12.5%	8.3%	9.5%
Fewer visitors than anticipated	37.5%	33.3%	57.1%
Roughly the same number of visitors	—	—	—
More visitors than anticipated	37.5%	41.7%	31.0%
Far more visitors than anticipated	12.5%	16.7%	2.4%
N=62			

Table 2.5.14 Awareness of the visitors

Date of survey	May, 2006	June, 2006	September, 2006	October, 2006	December, 2006	March, 2007
Event	Azalea Festival					Plum Festival
Number of question	Mean					
Question 1	2.0	2.0	1.9	1.9	1.9	1.9
Question 2	2.4	2.3	2.2	2.1	2.0	2.3
Question 3	1.5	1.6	1.5	1.6	1.6	1.5
Question 4	1.9	1.7	1.7	1.7	1.7	1.9
	N=121	N=169	N=147	N=169	N=110	N=62

- Q1: Do you agree that too many sightseers visit Kairakuen Garden?
- Q2: Do you think that Kairakuen Garden is a park for local residents?
- Q3: Do you think that Kairakuen Garden is vital to sightseeing of Mito City (Ibaraki Prefecture)?
- Q4: Do you think that Kairakuen Garden is a place for local residents to relax and recreate?
- 1 point Strongly agree
- 2 points Agree
- 3 points Disagree
- 4 points Strongly disagree

Touring behavior by objective in Kairakuen Park (The normal time: ordinary holidays)

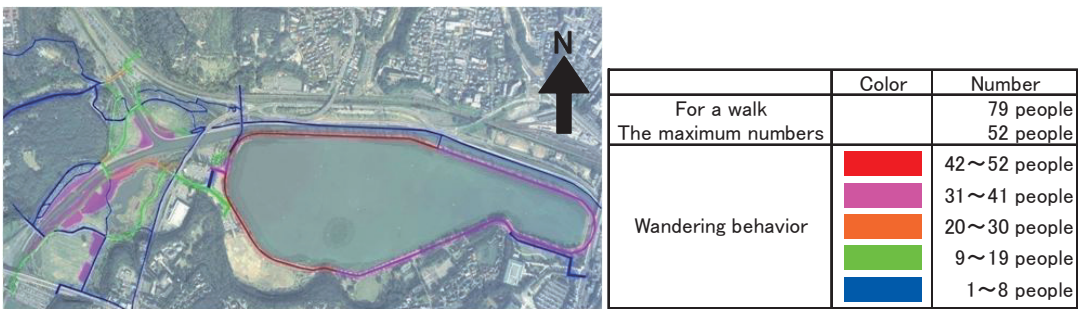


Fig. 2.5.1 Wandering behavior (for a walk) June 2006 (normal time; spring)

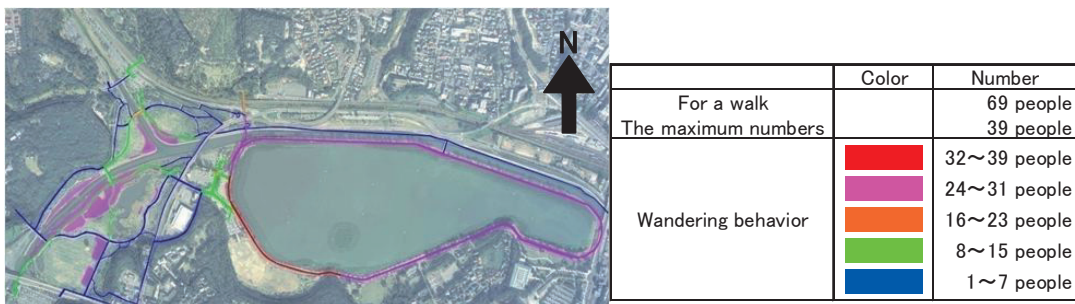


Fig. 2.5.2 Wandering behavior (for a walk) September 2006 (normal time; summer)

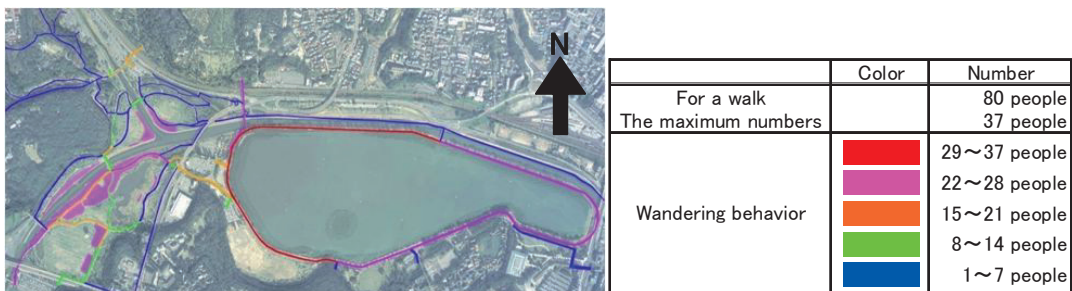


Fig. 2.5.3 Wandering behavior (for a walk) October 2006 (normal time; autumn)

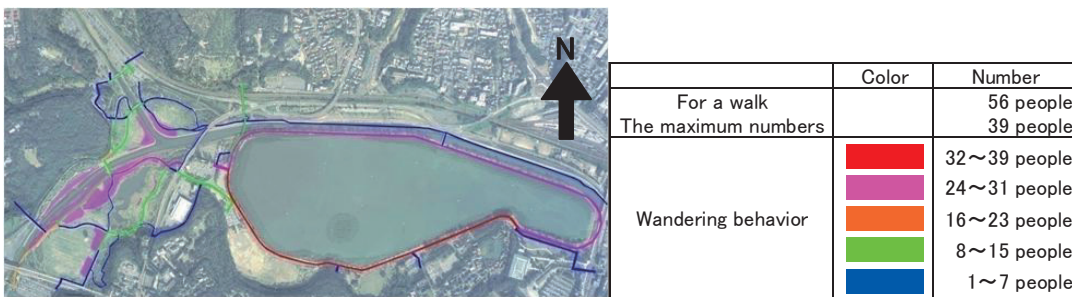


Fig. 2.5.4 Wandering behavior (for a walk) December 2006 (normal time; winter)

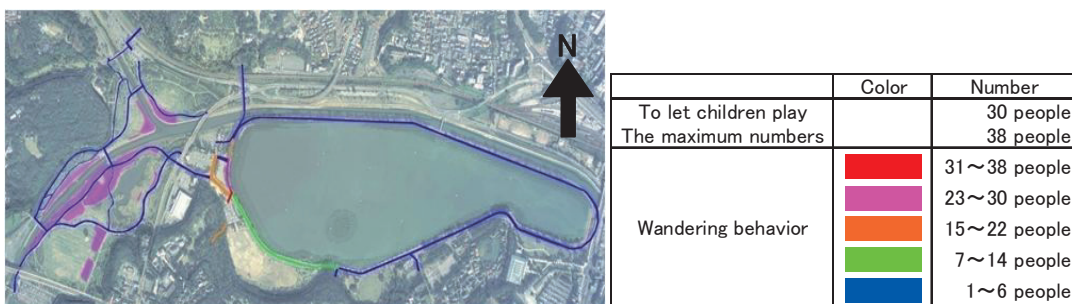


Fig. 2.5.5 Wandering behavior (To let children play) June 2006 (normal time; spring)

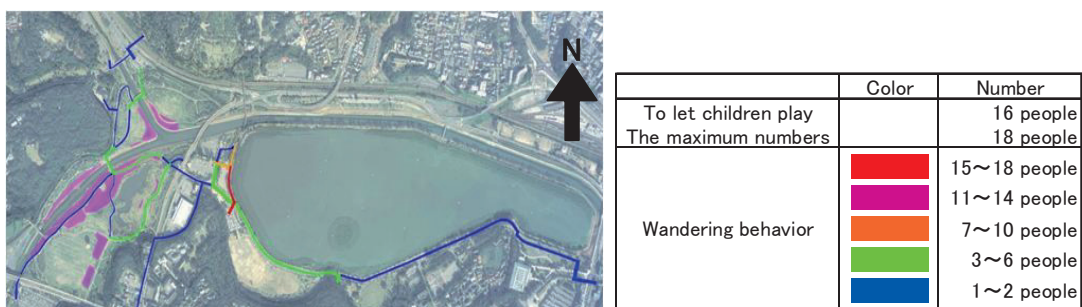


Fig. 2.5.6 Wandering behavior (To let children play) September 2006 (normal time; summer)

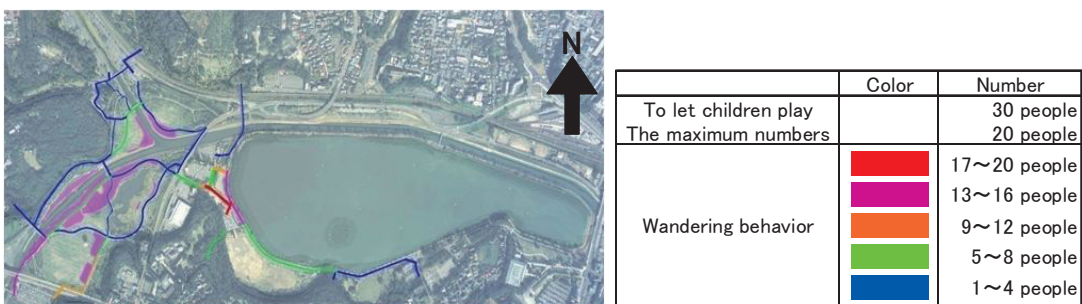


Fig. 2.5.7 Wandering behavior (To let children play) October 2006 (normal time; autumn)

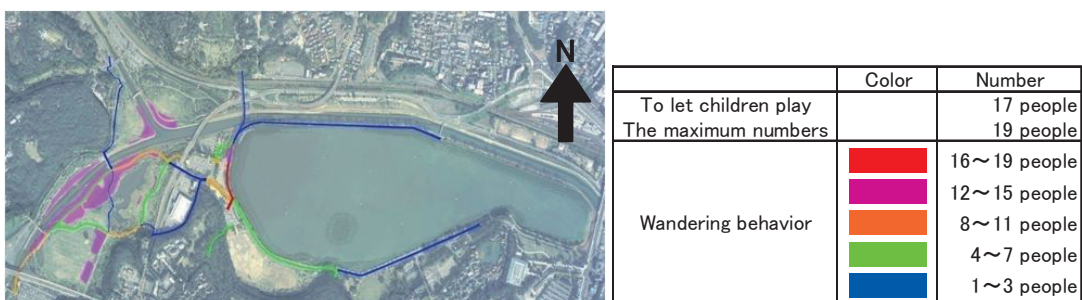


Fig. 4.5.8 Wandering behavior (To let children play) December 2006 (normal time; winter)

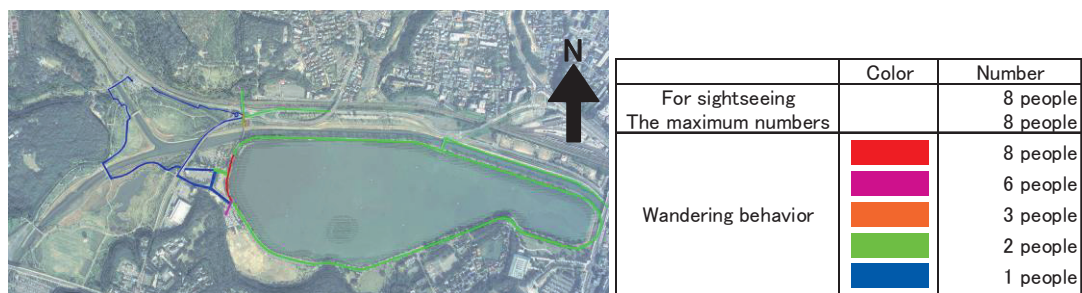


Fig. 2.5.9 Wandering behavior (For sightseeing) December 2005 (normal time; winter)

Table 4.5.15 Touring behavior by objective in Kairakuen Garden (The event time: Azalea and Plum-blossom Festival)

Event		Azalea Festival		Plum Festival
	color	For enjoying azaleas	For a walk	For enjoying plum trees
Number of Respondents		121 people	121 people	57 people
Total number		74 people	31 people	79 people
Wandering behavior	Red	32~74 people	17~31 people	40~79 people
	Magenta	24~31 people	13~16 people	30~39 people
	Orange	16~23 people	9~12 people	20~29 people
	Green	8~15 people	5~8 people	10~19 people
	Blue	1~7 people	1~4 people	1~9 people

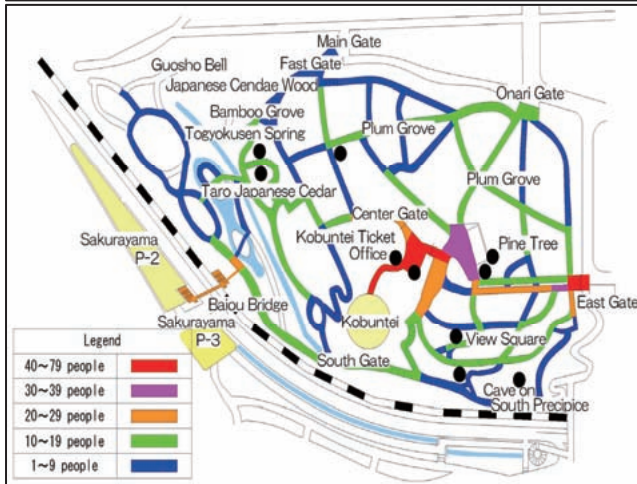
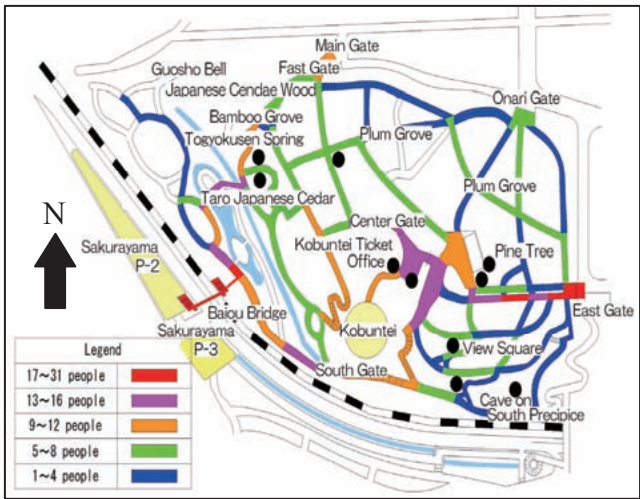
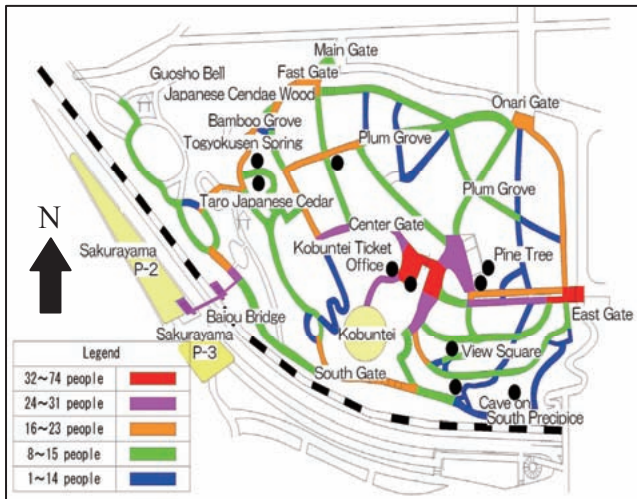


Fig. 2.5.12 Wandering behavior (for enjoying plum-blossoms and sightseeing)

date	name	survey place	No
<p>1. About user types using the parks</p> <p>(1) About respondent gender, age, group size Gender: ①male ②female age: ①10's ②20's ③30's ④40's ⑤50's ⑥60's ⑦higher than 70's</p> <p>How many people in your group? adults () people children (below about 12 yrs.) () people</p> <p>(2) How about the relationship among membership? ①husband and wife ②husband and wife (with children.) ③family (with grandparents) ④friend ⑤steady ⑥associate ⑦etc. () dogs with dog no dog</p> <p>(3) Where do you come from? ①Mito city ②Ibaraki ③Tochigi ④Gunma ⑤Hukushima ⑥Chiba ⑦Kanagawa ⑧Saitama ⑨Tokyo ⑩etc. () prefecture () city () ward/town/village</p> <p>2. Purpose of visit</p> <p>(1) Destination in Kairakuen Park? (Several answers are possible) ①Kairakuen Garden ②Senba Lake ③Sakurayama ④Tzunaki Plum Forest ⑤Tokiwa Shrine ⑥Gokoku Shrine ⑦History Museum ⑧Tokugawa Museum ⑨Park Management Center ⑩Forest of children ⑪etc. ()</p> <p>(2) Activity type? (Several answers are possible) ①walking ②jogging ③To let children play ④To appreciate nature ⑤study ⑥visit to the shrine ⑦event of Kairakuen Park ⑧To do shopping at street booths ⑨Sightseeing ⑩dog walking ⑪For cycling ⑫sport ⑬etc. ()</p> <p>(3) How often have you visited Kairakuen Park? ①the first ② () times/ a year ③ () times/ a month ④ () times/ a week ⑤Almost everyday</p> <p>(4) Source of information about Kairakuen Park. (Several answers are possible) ①known before ②newspaper · magazine · flier ③TV ④Internet ⑤told by my friend ⑥no information ⑦radio ⑧poster ⑨bulletin board ⑩one of the tour ⑪tourist guide book ⑫etc. ()</p> <p>(5) How long did you stayed in Kairakuen Park? ①below 30 minute ②30 minute~1 hour ③1 hour~2 hours ④2 hours~3 hours ⑤3 hours~4 hours ⑥4 hours~5 hours ⑦5 hours~6 hours ⑧6 hours~7 hours ⑨7 hours~8 hours ⑩more than 8 hours () hours</p> <p>3. By which means of transport you have arrived at Kairakuen Park? ①by car ②by train ③by route bus ④by taxi ⑤by tourism bus ⑥by motorbike ⑦by bicycle ⑧on foot ⑨etc. ()</p> <p>4. Do you have satisfaction about Kairakuen Park? <input type="checkbox"/> very satisfied <input type="checkbox"/> satisfied <input type="checkbox"/> dissatisfaction <input type="checkbox"/> strong dissatisfaction</p>			

5. How important are the following visiting motives for your current visit?

	Unimportant / rather unimportant / important	important / very important
Recreation	<input type="checkbox"/>	<input type="checkbox"/>
Enjoy landscape	<input type="checkbox"/>	<input type="checkbox"/>
Meeting friends, family	<input type="checkbox"/>	<input type="checkbox"/>
Watching other people	<input type="checkbox"/>	<input type="checkbox"/>
Escape from the city	<input type="checkbox"/>	<input type="checkbox"/>
To explore the recreation area	<input type="checkbox"/>	<input type="checkbox"/>
Stress reduction due to occupation	<input type="checkbox"/>	<input type="checkbox"/>
Experience nature	<input type="checkbox"/>	<input type="checkbox"/>
To be alone with my thoughts	<input type="checkbox"/>	<input type="checkbox"/>
Dog walking	<input type="checkbox"/>	<input type="checkbox"/>
Quietness	<input type="checkbox"/>	<input type="checkbox"/>
Health	<input type="checkbox"/>	<input type="checkbox"/>
Solitude	<input type="checkbox"/>	<input type="checkbox"/>
Sport	<input type="checkbox"/>	<input type="checkbox"/>
Bring children	<input type="checkbox"/>	<input type="checkbox"/>

6. Regarding visitor numbers, have you met... (Please check!!)

- Much fewer visitors than expected before entering the park
- Fewer visitors than expected before entering the park
- The same number of visitors than expected before entering the park
- More visitors than expected before entering the park
- Much more visitors than expected before entering the park

7. When you have met too many people in the park, what have you done? (Several answers are possible)

- No reaction.
- I was upset
- I shortened my stay and went home
- I come now at different day times
- I used side way/foot paths
- I come now at different days
- I went to other recreation areas
- I am engaged now in a different activity
- I reduced my frequency of visit

8. Please check!!

(1) Do you believe in this garden, there are too many tourists?

- strongly agree
- agree
- not agree
- strongly disagree

(2) This garden should only be for the local population.

- strongly agree
- agree
- not agree
- strongly disagree

(3) This garden is important for the local tourism.

- strongly agree
- agree
- not agree
- strongly disagree

(4) This garden is an important recreation area for the local population.

- strongly agree
- agree
- not agree
- strongly disagree

9. How about Kairakuen Garden and Park?

()

10. Do you have a request about Kairakuen Garden and Park?

()

Thank you very much.

Fig. 2.5.13 Interview sheet of the research in Kairakuen

2.6 Questionnaire data at Mt. Tsukuba.

Data was not reported.

2.7 Doho Park, visitor behavior.

Data was not reported.

2.8 Yoyogi Park, visitor behavior.

Data was not reported.

2.9 Field study at Vienna by photographs.



Fig. 2.9.1 Start from Narita



Fig. 2.9.5 Marchfeldkanal



Fig. 2.9.2 Meeting at BOKU



Fig. 2.9.6 Nationalpark-Forstverwaltung



Fig. 2.9.3 Fireplace by Donau-Auen



Fig. 2.9.7 Guide at Prater Park



Fig. 2.9.4 Swimming area Donau-Auen



Fig. 2.9.8 Entrance of Prater Park



Fig. 2.9.9 Play lot at Prater Park



Fig. 2.9.13 Overview of Wienerberg



Fig. 2.9.10 Problems at Prater Park



Fig. 2.9.14 Play lot in Vienna



Fig. 2.9.11 Use of Belvedere in Winter



Fig. 2.9.15 Maintenance of play lot



Fig. 2.9.12 Use of Stadtpark in Winter



Fig. 2.9.16 Plan of Türkenschanzpark

2.10 Seasonal activities and impression, questionnaire data

Students of the University of Applied Life Sciences, in Vienna, Austria have been asked to write down their main impression connected with the four seasons. 64 questionnaires have been investigated. The terms are aggregated and collectives of terms are built. The investigation of the first top ten terms shows, that winter and summer are deeply connected with climatic phenomenon and sport activities, whereas the changing seasons are connected with the status of the vegetation. The greatest number of notions with all seasons is climatic phenomena. Therefore it can be stated, that for the interviewed students the weather is the main factor to experience the seasons.

Table 2.10.1 Seasonal words obtained at Vienna

Spring Words	Frequency	Summer Words	Frequency	Autumn Words	Frequency	Winter Words	Frequency
Blüten	41	Hitze	43	buntes Laub	46	Schnee	43
grün	17	Baden, Gewässer	32	kühl bis kalt	16	klar	39
Wärme	17	Sonne	20	Nebel	12	Wintersport	22
Sonne	14	Urlaub	10	Ernte	11	dunkel	8
Erwachen	11	Sport	9	Regen, feucht	8	Weihnachten	8
Aktivität	8	Grün	4	Wandern	7	Eis	7
Ostern	5	lange Tage	4	Laubfall	5	grau	5
Regen	5	Garten	4	Wind	6	Ruhe	4
Vögel	5	Freizeit	3	Drachensteigen	4	Nebel	4
kühl	4	Gewitter	3	angenehm	3	Sonne	3

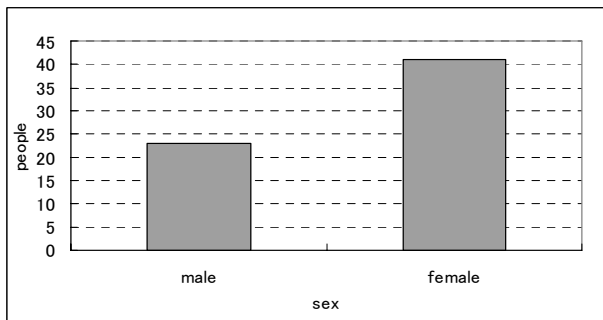


Fig. 2.10.1 Respondent

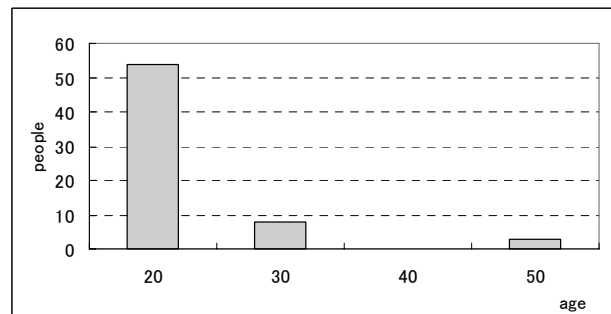


Fig. 2.10.3 Age distribution

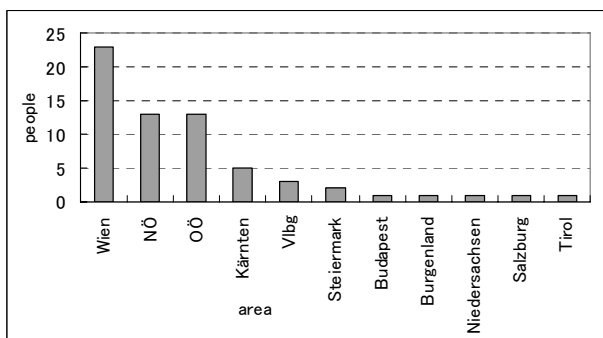


Fig. 2.10.2 Birth place

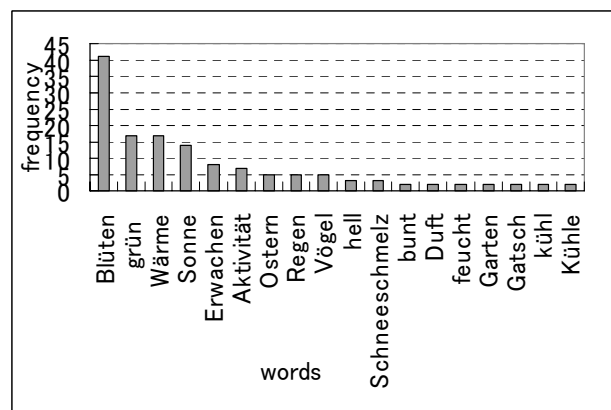


Fig. 2.10.4 Spring words

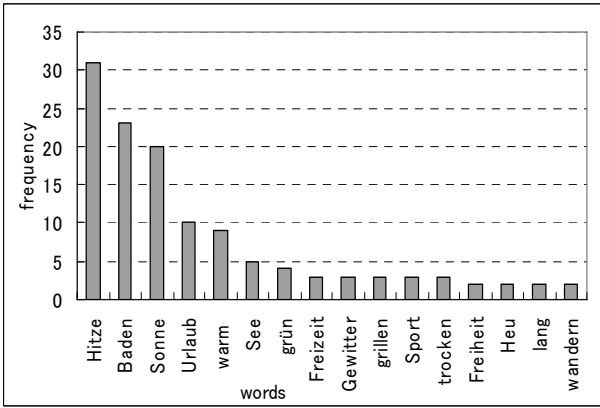


Fig. 2.10.4 Summer words

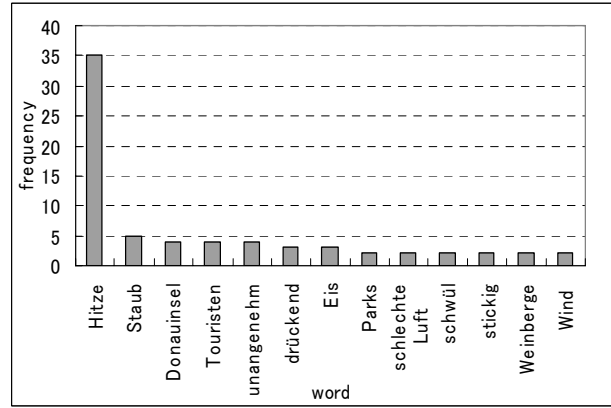


Fig. 2.10.9 Vienna summer

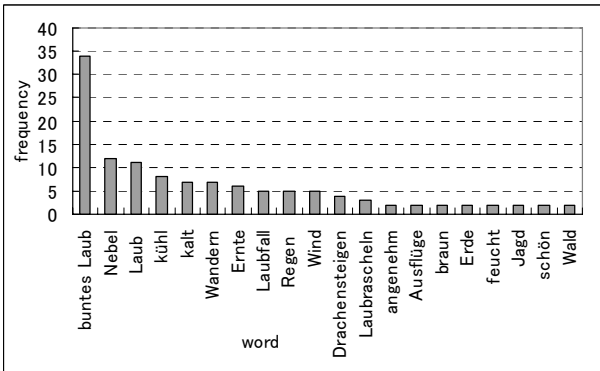


Fig. 2.10.5 Autumn words

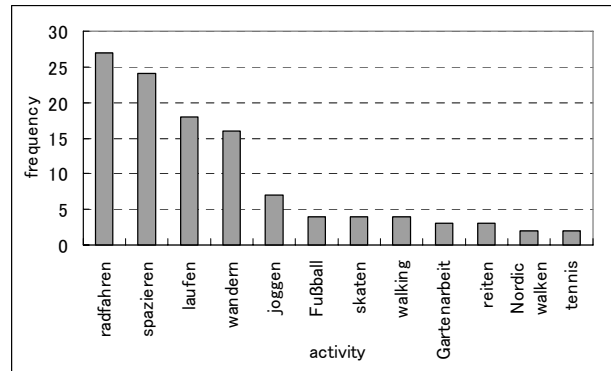


Fig. 2.10.10 Spring activities

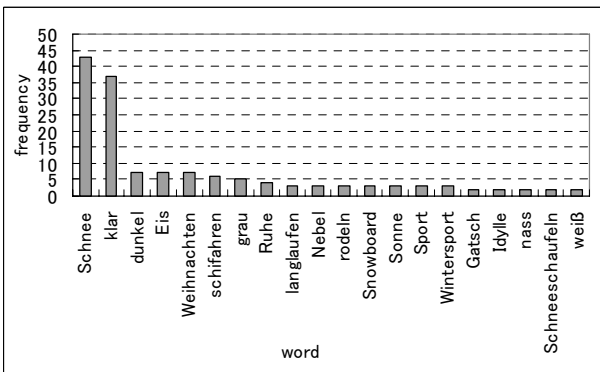


Fig. 2.10.6 Winter words

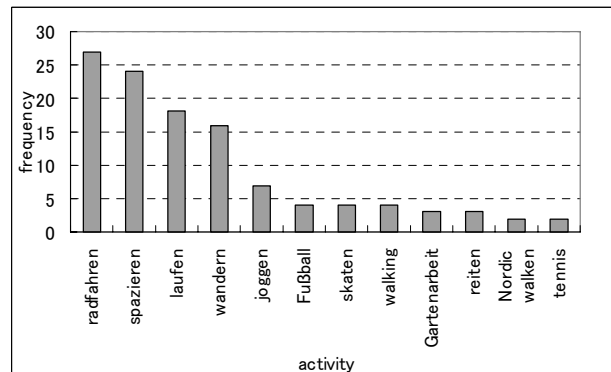


Fig. 2.10.11 Summer activities

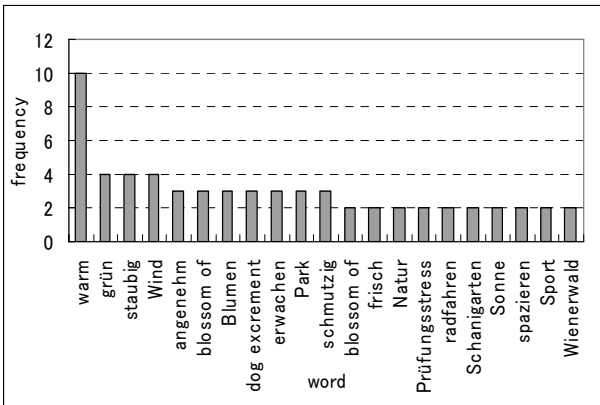


Fig. 2.10.7 Vienna spring

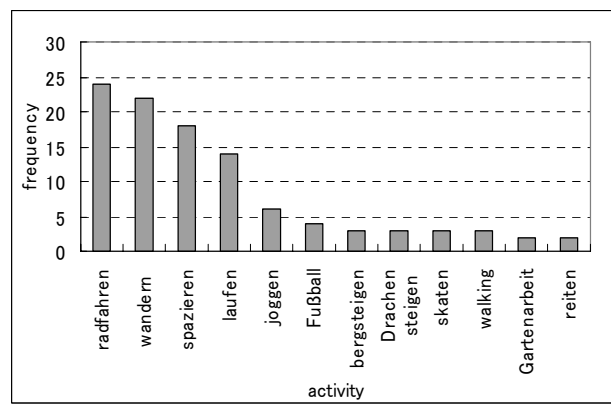


Fig. 2.10.12 Autumn activities

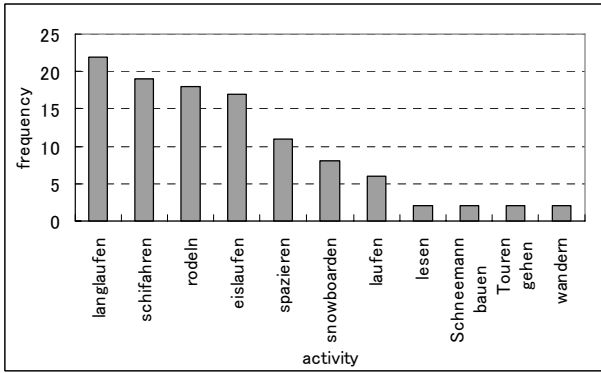


Fig. 2.10.13 Winter activities

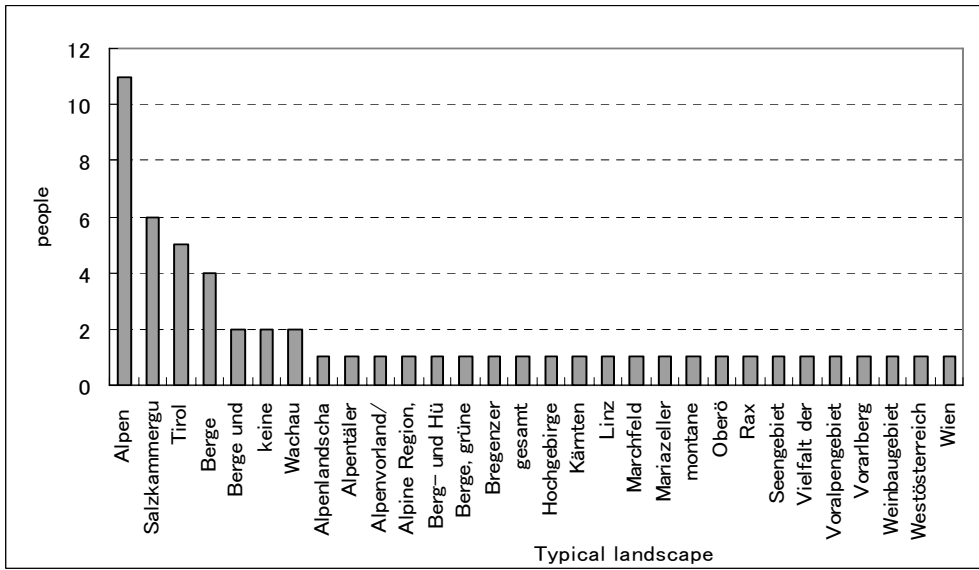


Fig. 2.10.14 Distribution of typical landscape

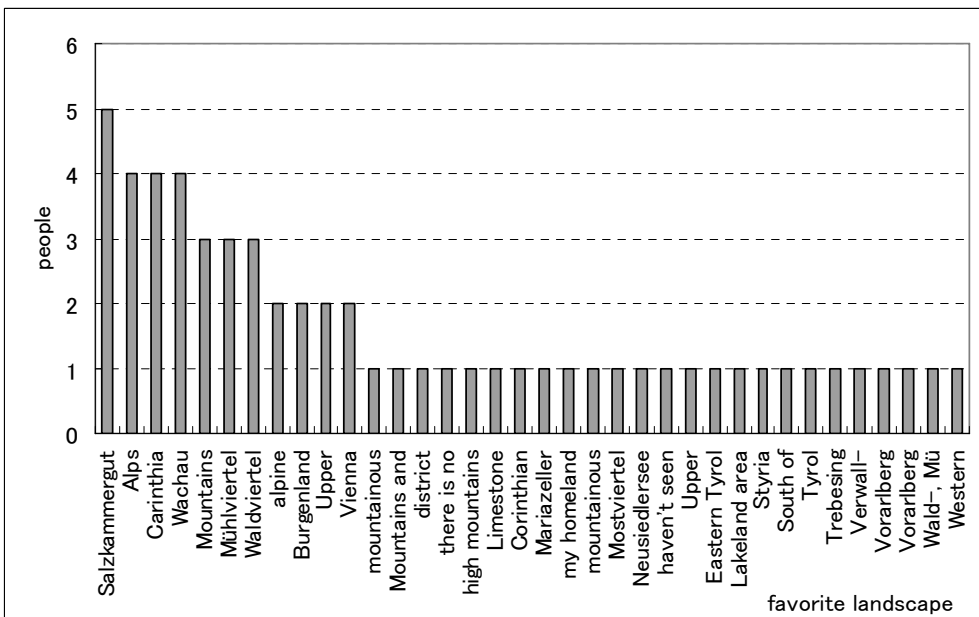


Fig. 2.10.15 Distribution of favorite landscape

2.11 Recreation use of urban parks in Vienna: methods and results

2.11.1 Survey in 8 green spaces in Vienna: Prater, Schönbrunn, Stadtpark, Kardinal-Nagl-Platz, Türkenschanzpark, Wienerberg, Upper Lobau, Lower Lobau.

Methods

Across all 8 study sites, on-site visitors were interviewed on randomly selected eight sampling days; 4 workdays and 4 Sundays/holidays throughout the day except of midday break, guaranteeing a stratified sample. Data were collected only on days with no precipitation. On-site visitors were intercepted at main trails or main access points of the parks. The period of data collection was between April and October 2006. The interviewers were mostly students, who were carefully trained in the use of the survey forms. One or two interviewers were used per study site and were supervised by the project leader or his assistants. Once the interview was completed, the next visitor encountered, regardless of user type, was asked to participate. Interviews lasted between 15 and 20 minutes in most cases.

Additional on-site interviews were undertaken in the areas of Lobau and Schönbrunn, specifically addressing the comparison of park use between Japan and Austria. The procedure was the same as described above. However, for the data collection of Schönbrunn all five main entrance points were staffed by interview personnel. On six days between November 2006 and June 2007, interviewing was carried out.

In total, about 3400 on-site visitors were asked in these green spaces in Vienna. Most visitors were interviewed in the Lobau forest and in the historical garden of Schönbrunn because of the cross-cultural comparison of recreation use with the Nopporo Forest in Sapporo and Kairakuen Park in Mito.

The survey instrument consisted of two distinct components. One part contained a conventional questionnaire on socio-demographic characteristics and urban parks related questions, such as visiting motives, frequency of visit, perception of crowding and safety, origin, and length of stay. Visiting motives consisted of 15 items and were asked on a scale ranging from unimportant to very important. Another topic dealt with crowding. Visitors were asked how crowded they perceive the respective recreation area on Sundays, workdays and during the time of interview. When they indicated crowding perceptions, they were asked how they did react because of the crowded situation. Revealed data about use displacement behaviour between the parks in Vienna were collected. In the second part, each respondent was shown several choice sets consisting of image-based recreational scenarios (stated choice survey).

Interviewers registered group size, activity type (biking, hiking, etc.), whether the visitor was accompanied by dogs on or off a leash, date, and interview time. If possible, only leaving visitors were asked because some information entering visitors can not provide.

To analyse the intentions to displace from the trail depending on social, managerial and design attributes, a stated choice method was used. One main attraction for applying a stated choice method to this study there is the method's ability to predict how the public will respond to various planning and management alternatives, including arrangements of resources, quality of visitor experiences, facilities, and/or regulations that may not currently exist. An image-based stated

choice survey was applied to measuring use displacement intentions.

Several image-based choice models were used for this study. Three were developed by the Austrian side; one was developed by Japanese researchers. Aim of the choice models was to elicit visitors' preferences for trail use and to assess social carrying capacities of urban recreational trails. Specifically the choice models usefully served for the cross-cultural comparison because visitors in Japan and Austria had been confronted with the same stimulus, i.e. image. Use displacement intentions were assessed by asking the visitors to identify intolerable recreational scenarios of a choice set, if any.

To account for the drawback of the static images, a 3D-computer-animated stated choice survey was applied to analyse the influence of speed relative to other social and design attributes. The trail scenarios were depicted as digitally calibrated films. In these films persons were computer animated using 3D visualization software. The films systematically displayed combinations of levels of user numbers with different mixes of user types, group sizes, design and managerial factors such as the amount of garbage and vegetation type, kind of trail surface, and sight distance. One factor described various speed levels per user groups, i.e. walkers and bicyclists. More than one hundred trail use scenarios were developed. Each respondent was shown 16 digitally calibrated films in four choice sets. Trail preferences were assessed by asking respondents, i.e., students, to choose the most and the least preferred scenario of the four assembled in each choice set.

Results

Visitor structure

Differences in the characteristics of the on-site visitors among the study sites were found for many of the variables (Table 2.11.1). The Prater and the Kardinal Nagl Platz visitors were the youngest, while the Lobau (Upper and Lower Part) and the Schönbrunn visitors were the oldest. The Lobau is predominantly visited by men, whereas Türkenschanzpark, Schönbrunn, Prater and Kardinal Nagl Platz are more visited by females. In these areas the proportion of children taken with is rather high. Most visitors intercepted were walkers, followed by bicyclists and dog walkers. Again, differences were found across the areas.

Table 2.11.1. Visitor structures and access mode across 8 recreation areas in Vienna

Sociodemographics	All	Stadtpark	Türkenschanzpark	Kardinal Nagl Platz	Schönbrunn	Wienerberg	Prater	Upper Lobau	Lower Lobau
Age (mean)	43.3	42.8	44.5	37.3	46.9	44.5	35.5	47.4	47.5
Gender (females in %)	53.8	52.4	62.9	61.0	60.6	52.2	59.2	32.5	40.4
Child with (yes in %)	16.4	6.1	19.0	33.8	17.6	9.7	23.6	12.3	8.0
Activity engaged (in %)									
Hikers/walkers	68.4	93.2	80.3	93.2	89.5	55.5	65.7	20.8	22.6
Bicyclists	13.9	3.8	2.4	1.2	0.3	7.4	19.7	37.5	60.3
Dog walkers	6.8	2.6	9.6	5.6		18.3	6.0	7.7	6.2
Joggers	4.9	0.4	4.3		7.7	9.6	6.4	3.6	4.1
Nordic Walkers	3.0		2.4		2.4	8.3	1.7	3.0	6.8
Others	3.0		1.0			0.9		27.4	
Arrival (in %)									
On foot	42.8	49.2	61.0	69.9	33.4	62.1	44.4	5.2	5.4
Public transport	23.7	41.3	19.2	24.5	44.5	10.3	15.5	12.8	6.7
Car	17.1	2.9	14.1	4.3	18.3	16.4	13.4	41.9	34.9
Bicycle	15.8	6.3	5.2	0.6	3.1	10.8	26.4	38.4	52.3
Others	0.7	0.4	0.5	0.6	0.7	0.4	0.4	1.8	0.7

Highest shares of bicyclists were found in the Lobau, while close to 20% of the Wienerberg visitors were dog walkers. Most visitors arrived on foot; about one-fourth used public transport. About 17% accessed the areas by car and bicycle. Obviously the high proportion of Lobau visitors was using the car because of the remote location of this area.

Visitor motives

All motives varied significantly across the eight areas (Table 4.11.2). Particularly the differences between the Kardinal Nagl Platz visitors and the other study site visitors were obvious. Social aspects played here a more prominent role, while recreation, escape, solitude and nature were below the average scores. Experiencing nature, solitude and sports/health aspects were more related to the Lobau visitors, while observing other people is done more in the smaller parks. Surprisingly high were the ratings for the Stadtpark and the Türkenschanzpark regarding experiencing nature. The Wienerberg visitors focus more on quietness, escape from the city and stress reduction, while dog walking played a relatively greater role compared to the other green spaces.

Table 2.11.2. Visitor motives across recreation areas; answer scale: 1=unimportant, 4=very important.

Motives (mean)	Stadtpark	Türkenschanz park	Kardinal Nagl Platz	Schönbrunn	Wienerberg	Prater	Upper Lobau	Lower Lobau
Recreation	3.2	3.4	2.6	3.3	3.4	3.3	3.6	3.4
Enjoy the park landscape	3.3	3.4	2.2	3.5	3.3	3.1	3.6	3.4
Experience nature	3.1	3.4	2.0	3.3	3.2	3.0	3.6	3.5
Health	2.7	3.1	2.0	3.0	3.2	2.9	3.4	3.4
Quietness	3.0	3.1	2.1	2.9	3.2	3.0	3.1	3.1
Sport/fitness	1.8	2.5	1.5	2.4	3.1	2.5	3.4	3.3
Stress reduction	2.4	2.5	1.9	2.4	2.7	2.7	2.7	2.7
To be alone with my thoughts	2.5	2.7	2.1	2.3	2.7	2.4	2.5	2.6
Escape from the city	2.3	2.5	1.6	2.2	2.6	2.6	2.5	2.4
Meeting friends, family	1.8	2.0	2.2	1.6	1.7	2.0	2.0	1.6
To explore the park area	2.0	1.7	1.4	1.9	1.7	1.7	2.1	2.2
Solitude	1.8	1.8	1.3	1.6	2.0	1.8	2.0	2.2
Observing other people	2.0	1.9	2.0	1.8	1.5	1.7	1.3	1.3
Be in the fresh air with children	1.3	1.7	2.0	1.4	1.4	1.7	1.4	1.3
Dogwalking	1.1	1.3	1.2	1.0	1.6	1.2	1.3	1.4

Cross-cultural differences in social trail use preferences between Lobau (Vienna) and Nopporo (Sapporo) urban forest visitors:

Visitor motives

On-site visitors of both forests were asked to rank the same visiting motives regarding their importance (Table 2.11.3). For 12 of 15 motives differences were significant. The most important motives for visiting both urban forests focused around the topics health/sport and nature (experiencing, observing). Overall, the Lobau visitors placed higher scores on motives, particularly those of recreation, enjoying of the park landscape, experiencing nature, quietness, and to be alone with my thoughts. No differences were found for stress reduction, escape from the city and being in the fresh air with children. For Nopporo visitors exploring the forest area and meeting friends and family were more relevant, which may be supported by their bigger average group size, whereas Lobau visitors assigned higher importance scores to dog walking.

Table 2.11.3. Visitor motives (Nopporo N = 256; Lobau N = 316); answer scale; 1=unimportant, 4=very important.

Motives	Nopporo	Lobau	Mann-Whitney-U-Test
Health	3.31	3.52	.000
Experience nature	2.98	3.64	.000
Enjoy the park landscape	2.86	3.55	.000
Stress reduction	2.81	2.80	.472
Recreation/relaxation	2.76	3.59	.000
Sport/fitness	2.74	3.44	.000
To explore the forest area	2.56	2.06	.000
Quietness	2.42	3.20	.000
Escape from the city/daily life	2.00	2.20	.058
Meeting friends, family	2.03	1.56	.000
To be alone with my thoughts/mediator	1.87	2.50	.000
Solitude	1.60	1.99	.000
Observing other people	1.32	1.23	.002
Be in the fresh air with children	1.16	1.36	.098
Dog walking	1.16	1.55	.000

Image-based choice model results

The on-site visitors to the Lobau and Nopporo forests evaluated the same sets of computer manipulated images depicting 128 trail scenarios with different levels of social crowding and several types of social interferences. Both visitor groups disliked high numbers of visitors in the image (Figure 4.11.1), users placed in the foreground, a high share of single users, and the presence of unleashed dogs. However, remarkable differences were found. For some variables the part-worth estimates pointed in the opposite direction or the relative importance differed. Use levels had a much greater influence on the choices of Lobau visitors who preferred very low use levels, whereas Nopporo visitors placed more importance on the other attributes included in the choice model. For the Lobau visitors the most preferred use levels ranged between zero and two persons present along the 200-m trail section at any one time, followed by a drastic preference decrease if more than four people were present. By contrast, for the Japanese segment the preference curve peaks at two persons on the trail, and a remarkable decrease of the preference scores appeared with more than 8 people depicted. Latent class segmentations, in two subsegments of similar sizes, differentiated by opposite preferences for use levels, were derived for both ethnic groups. A positive contribution of use levels to preferences was found for about 20% of respondents from both ethnic groups, with a higher relevance for Nopporo Forest respondents.

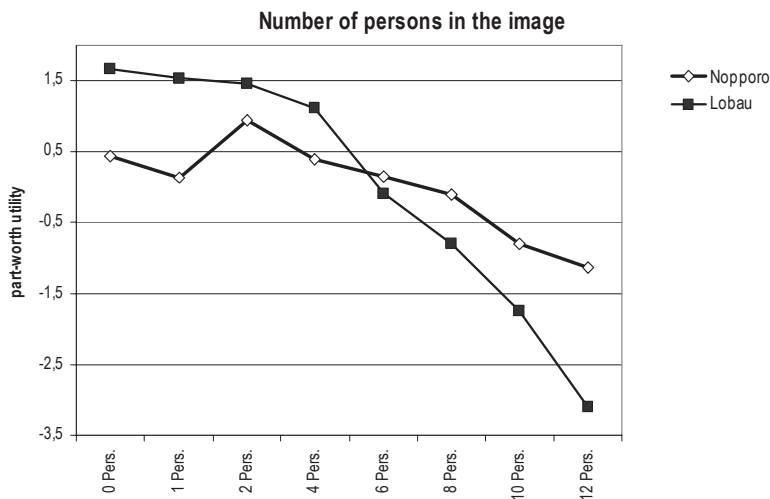


Fig. 2.11.1 Part-worth utilities of respondents' preferences for the attribute number of persons on the trail depicted in the image (the more positive the parameter the more preferred)

Results of the 3D computer animated choice model

All investigated factors had a significant influence on the respondents' evaluations of the trail scenarios. The design factors, in particular garbage and vegetation type, had the strongest impact on the evaluations, followed by trail surface. Large group sizes and a slow speed of movement of cyclists and walkers were most preferred. An obstructed sight distance was preferred to an unobstructed one.

Compared to design attributes, the impact of motion was less important, but was stronger than a doubling of visitor numbers from 8 to 16 persons in view, for example. Interactions revealed that the respondents associated intensively designed and well maintained settings with travelling at a slower speed, while asphalt trails, litter-rich and fallow ground is associated with fast-moving. Large and heterogeneous group sizes are disliked under fast moving conditions.

2.11.2 On-site counting data from 3 green spaces in Vienna: Prater, Wienerberg, Lower Lobau

Methods

On the days of the interviews in the parks, there were also visitor counts by human observers. These observations took place in the areas of Prater and Wienerberg at main trails from 7:00 or 8:00 in the morning to 18:00 or 19:00 in the evening, depending on the season (in early spring or autumn (April/November) only till 17:00/18:00 in the evening). These visitor counts served as a basis for correlations between perceived crowding and user numbers, and provided information on visitor characteristics and visitor behaviour. Data were collected about weather condition, place of counting, time, date, group size, gender, activity type, children in the group, direction of movement, number of dogs and on/off leash, etc.

Video monitoring was undertaken in the Lobau area at one of the forest's main access points, over a period of one entire year between 2006 and 2007, daily from dawn to dusk. This monitoring was part of an ongoing project in the Lower Lobau but additional analyses were undertaken. The main

objective for inclusion of this method was to derive a correlation between user numbers and perceived crowding, and to establish a cross-cultural comparison on recreation use patterns between Vienna and Sapporo forests. Data from video monitoring in the Lobau forest will be compared with the one-year video monitoring taking place in the Nopporo Forest, observing forest visitors at one main access point.

The camera was installed outdoors on a wooden pole about four meters above the ground. The monitoring unit consisted of a weatherproof black-and-white video camera with integrated heating and two time-lapse video recorders placed in a nearby building (restaurant). The camera observed a heavily used access and intersection point close to a parking place. The camera was hidden in a nesting box to prevent vandalism and allow for unobstructed observations. The time-lapse video recorders captured single images at fixed intervals of 1.6 seconds over the entire day. With the type of video camera installed and its specific setting, it was impossible to identify individuals in the video images, ensuring their anonymity. This was achieved by the low image resolution of the cameras and a minimum distance between camera and visitor. As a drawback, it was impossible to distinguish unique visits from repeat visits by the same person who might pass a camera at different times of the day or at another camera location. Weather information was collected from the nearest weather stations of the Austria Weather Service (ZAMG) to analyze the relationships between weather and visitor flows.

Results

Results of counts by human observers indicate that the Prater area is more visited by children. This may be due to the better recreational infrastructure provided such as several playgrounds.

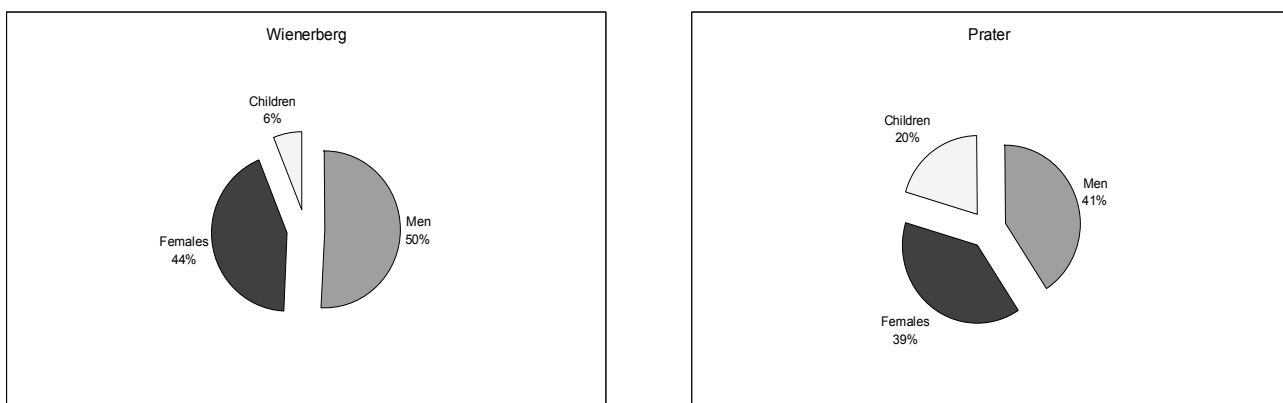


Fig. 2.11.2 User structure of the Prater and Wienerberg areas

In both green spaces walkers are the dominant user group. Prater is much more used by bicyclists, while the Wienerberg area is more attended by joggers and Nordic Walkers.

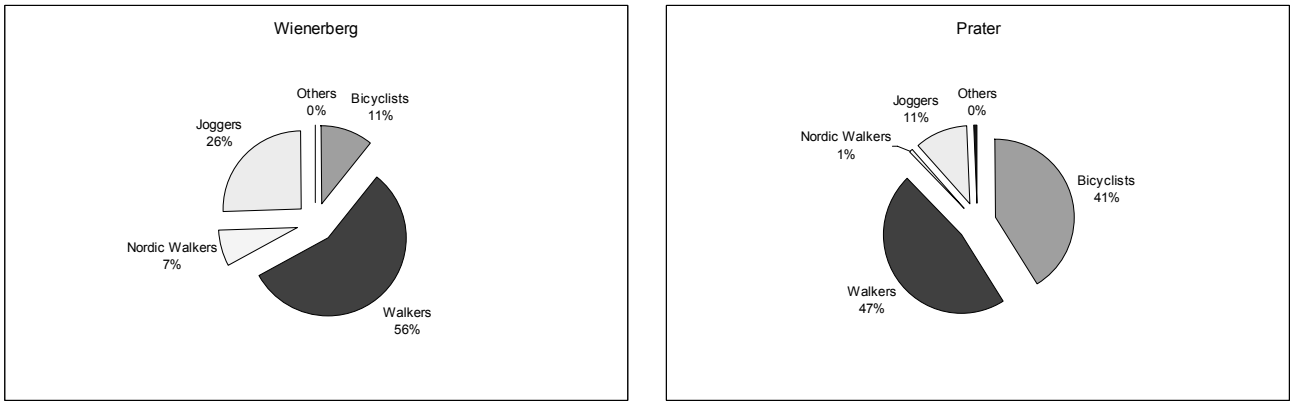


Fig. 2.11.3 Activity groups of the Prater and Wienerberg areas

In both forests, highest visitation rates were observed in the evenings. However, the average daily progression of use differs between both areas. Wienerberg visitors show higher participation rates during the morning hours because of higher shares of Nordic Walkers and joggers, while Prater visitors appeared more during noon. The Prater use pattern is a result of an extreme increase of children use after school time.

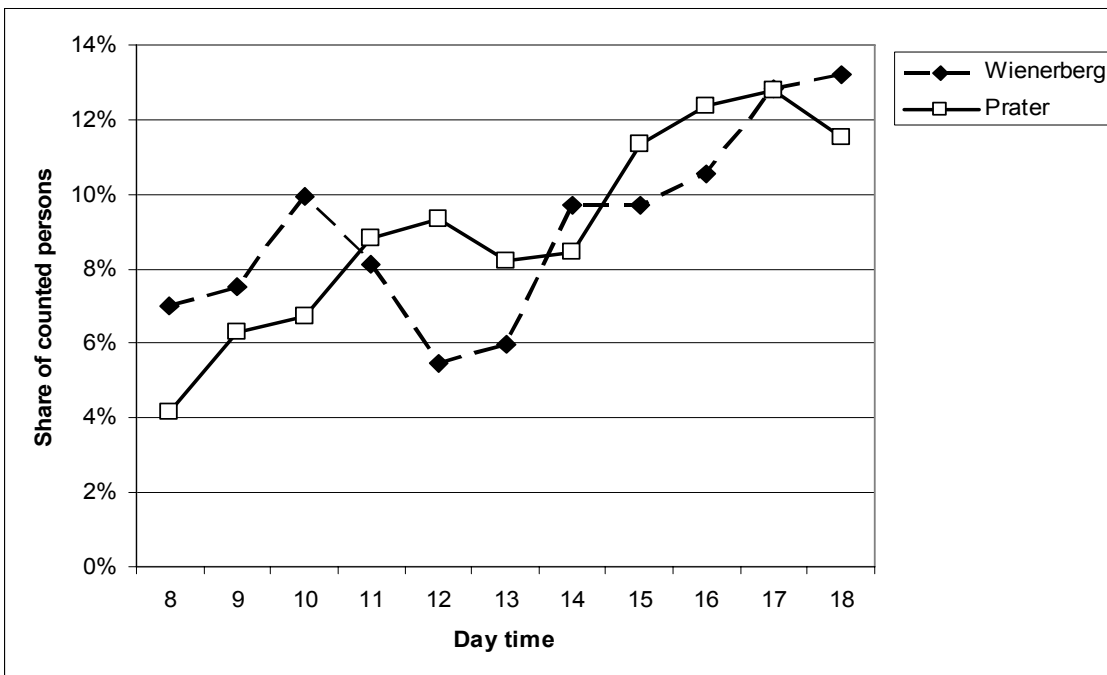


Fig. 2.11.4 Average daily progression of Prater and Wienerberg area visitors

Video monitoring showed highest visitation patterns between April and September. Lowest use levels were recorded for January. Highest use loads were observed for Sundays and holidays, while the Mondays were those with the lowest. Predominantly, bicyclists were recorded, followed by hikers and dog walkers.

2.11.3 Route data of on-site visitors to Schönbrunn

Method:

Route-survey in the Baroque Garden of Schönbrunn was done between November 2006 and June

2007. All five main entrance points were staffed by interview personnel. On 3 workdays and 3 Sundays interviewing was carried out by trained students. Schönbrunn visitors were asked to mark on a simple map the route that they took through the garden and their stopping points. By linking the route data and interview results via an Access database, an analysis by each theme of the questionnaire was possible. The respective number of visitors per segment of trail were plotted on maps of the study area using GIS.

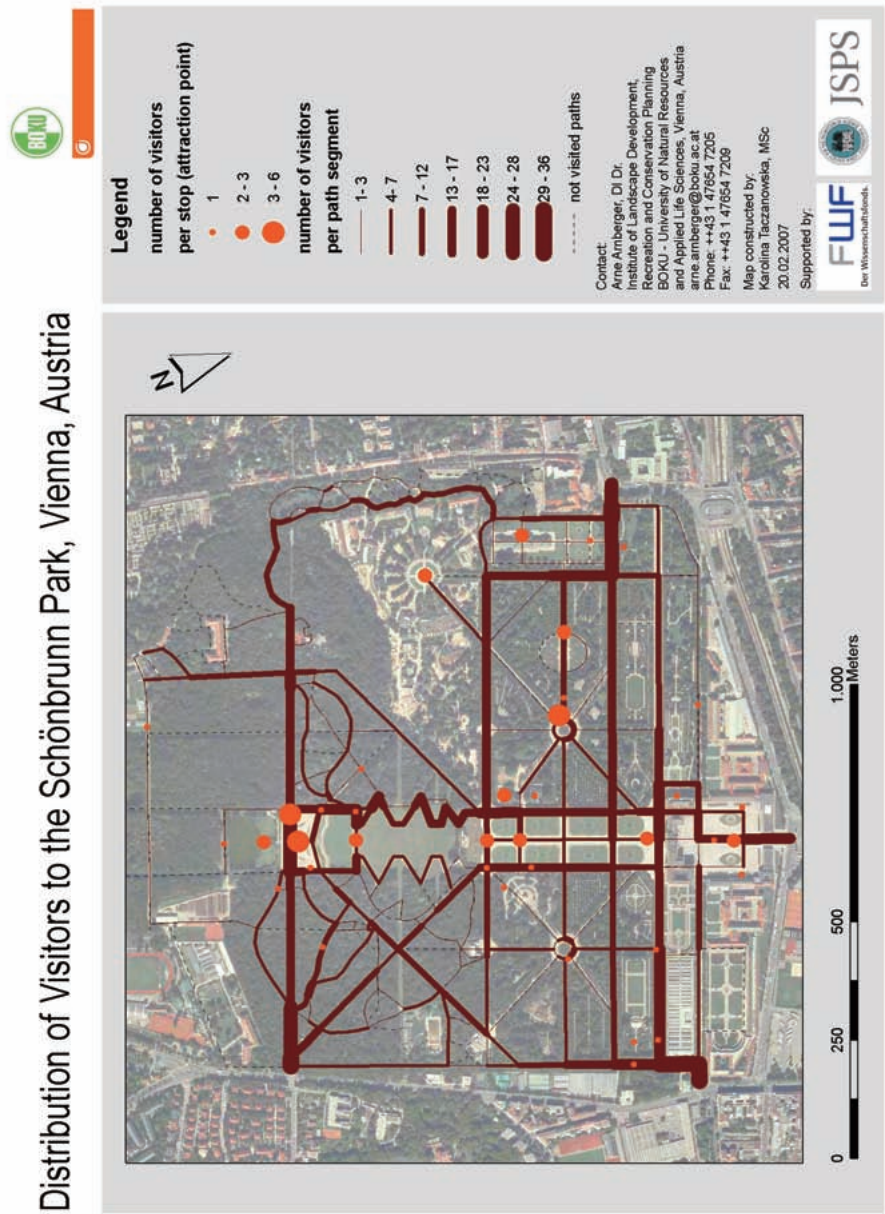


Fig. 2.11.5: Spatial distribution and stopping points of Schönbrunn visitors on one day in November 2006

Results

Results of the November survey indicate that most trails of Schönbrunn Park were used by the visitors. Some trails in the eastern forested part were less frequented, while most trails in the central part, as well the main east-west trails, were heavily used.

Three categories of stopping points can be found. Frequent stopping points were around the “Gloriette”, where visitors enjoyed the panoramic views over the park and Vienna, and in the

western part at the central crossing point, where several view shafts, e.g., to the palace, are given. Medium frequented stopping points were the central axis of the garden of the parterre part, the Labyrinth, the Palm House, the main entrance (Court of Honour), south and north of the Gloriette, and in the western part of the “hedge” (bosquette) area along the “Lindenallee”. Other stopping points were spread throughout the park, mostly at crossing points providing views in the park.

Differences in spatial pattern between the locals and tourists are obvious. Tourists used the main entrance and concentrate on the central part of the park, including the Gloriette, while locals were spread throughout the park.

Distribution of Visitors in the Schönbrunn Park, Vienna, Austria
Local Visitors vs Tourists

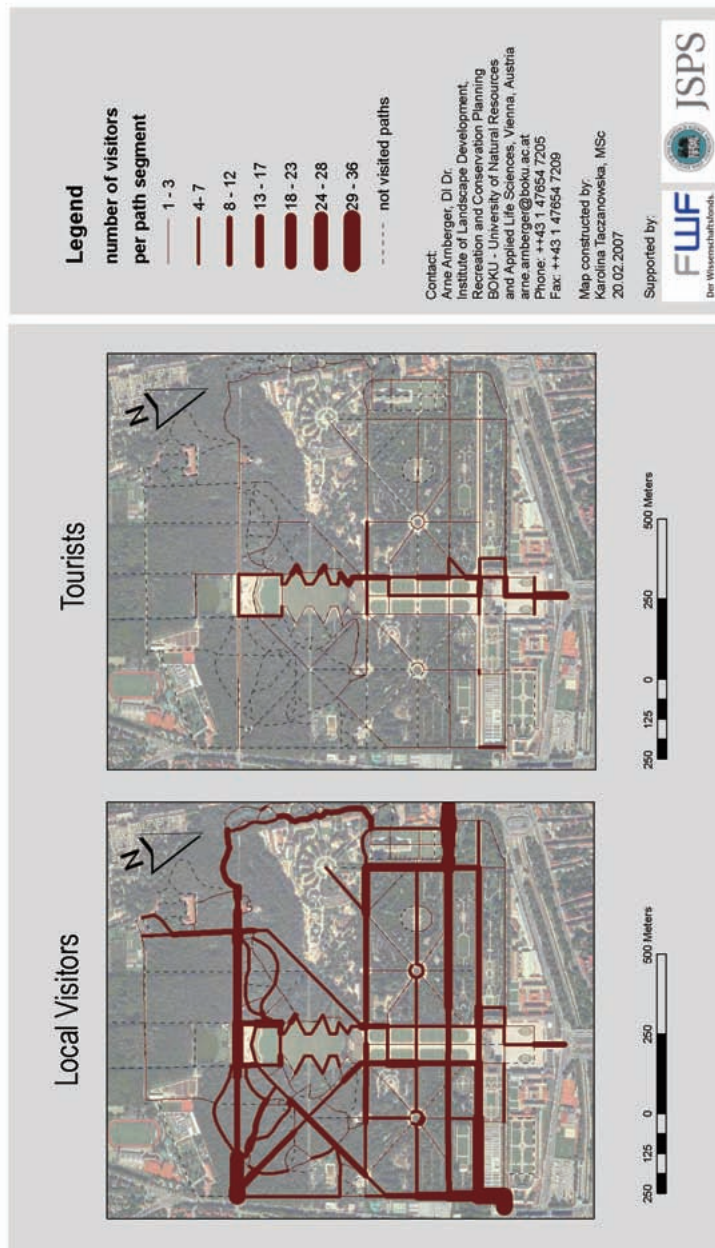


Fig. 2.11.6 Spatial use patterns of tourists and local visitors in the Schönbrunn Park of one day in November 2006

2.12 Wienerberg Park in Vienna, visitor numbers and meteorological data at the airport from 18.1.2001 to 17.1.2002.

Video monitoring was undertaken at main access points over a period of one entire year, daily from dawn to dusk. Each monitoring unit consisted of a weatherproof black-and-white video camera with integrated heating and one or two time-lapse video recorders. The cameras which were hidden in nesting boxes were installed on wooden poles about four meters above ground, or on the walls and roofs of buildings. The time-lapse video recorders captured single images at fixed intervals of 1.6 seconds over the entire day. The tapes were viewed on a television monitor by trained students and visitor counts were classified and recorded on an MS-Excel spreadsheet.

The meteorological data: air temperature, precipitation, sunshine and humidity were obtained from a nearby meteorological station of the Austrian Central Institute for Meteorology and Geodynamics. The available data cover the above-mentioned time frame of the research period.

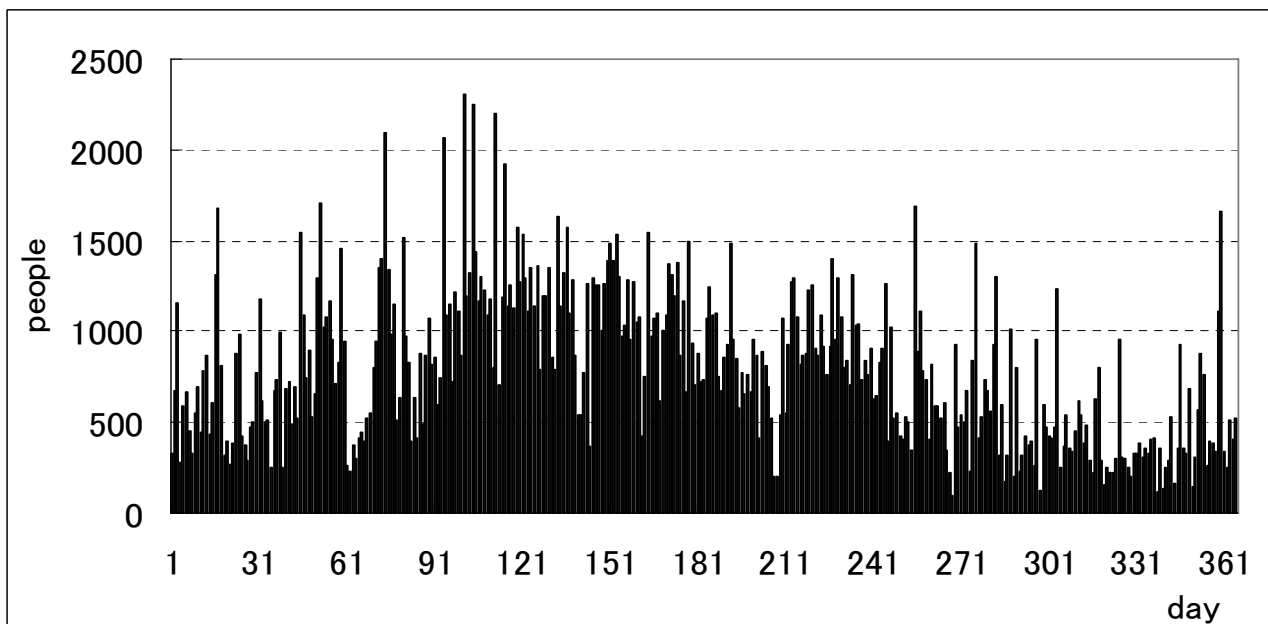


Fig. 2.12.1 Fluctuation of daily visitors at Wienerberg in Vienna, 18.1.2002-17.1.2003

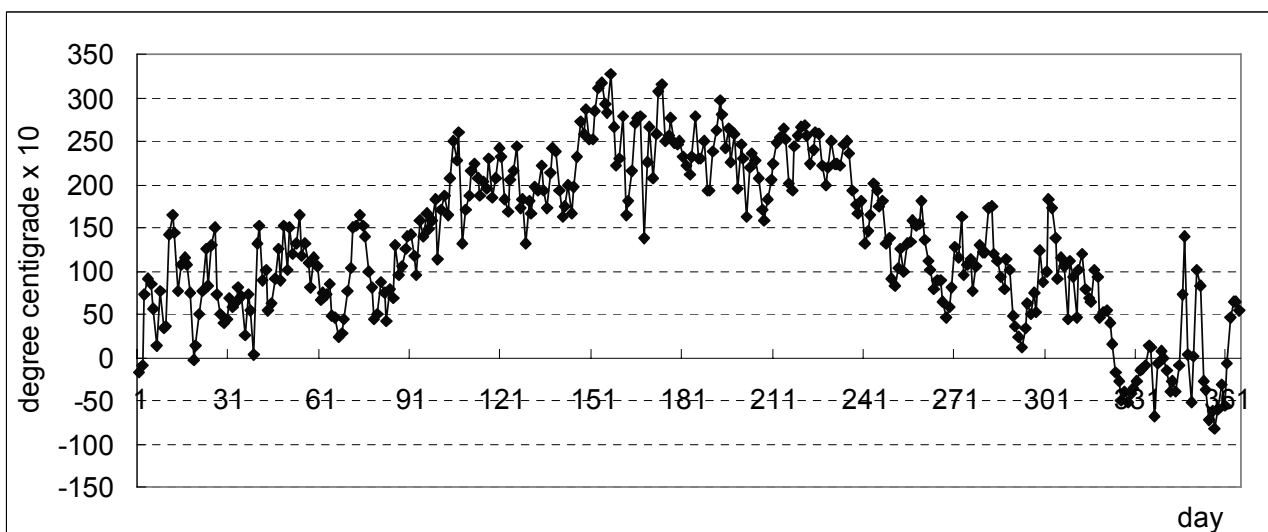


Fig. 2.12.2 Temperature at Wienerberg in Vienna on-site, 18.1.2002-17.1.2003

2.13 Visitor numbers and weather data in Japan

The visitor numbers and on-site weather conditions were reported by Mt. Moiwa Ropeway Company., Mt. Tsukuba Cable Railway Company, Takino Suzuran Hillside National Park, Okinawa Oceanic Exposition Commemorative Park, Showa Kinen Park, Tokyo Metropolitan Park Association and Naha City. The meteorological data were referred to the Japan Meteorological Agency.

2.13.1 Mt. Moiwa in Sapporo City, daily visitor numbers, temperatures and weather on site, and meteorological data of Sapporo from 1.4.2001 to 31.3.2006. Visitor numbers were counted at the entrance gate of ticket checking. Two terms of frequent use were observed in each year, e.g., in summer and winter. Among these terms, temporary close downs were caused by the maintenance of the facilities.

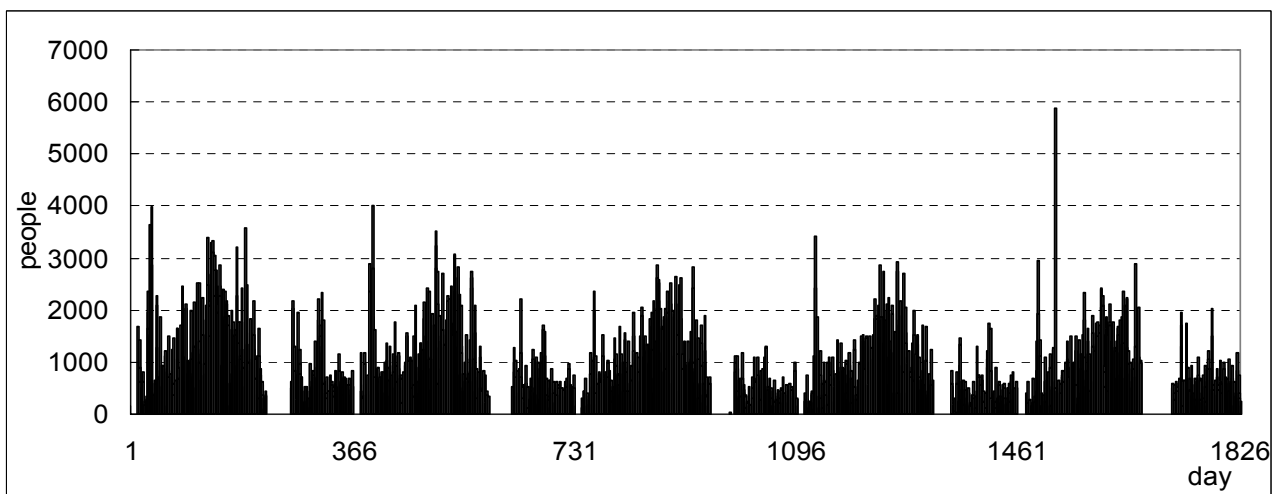


Fig. 2.13.1 Fluctuation of daily visitors at Mt. Moiwa in Sapporo city, 1.4.2001-31.3.2006

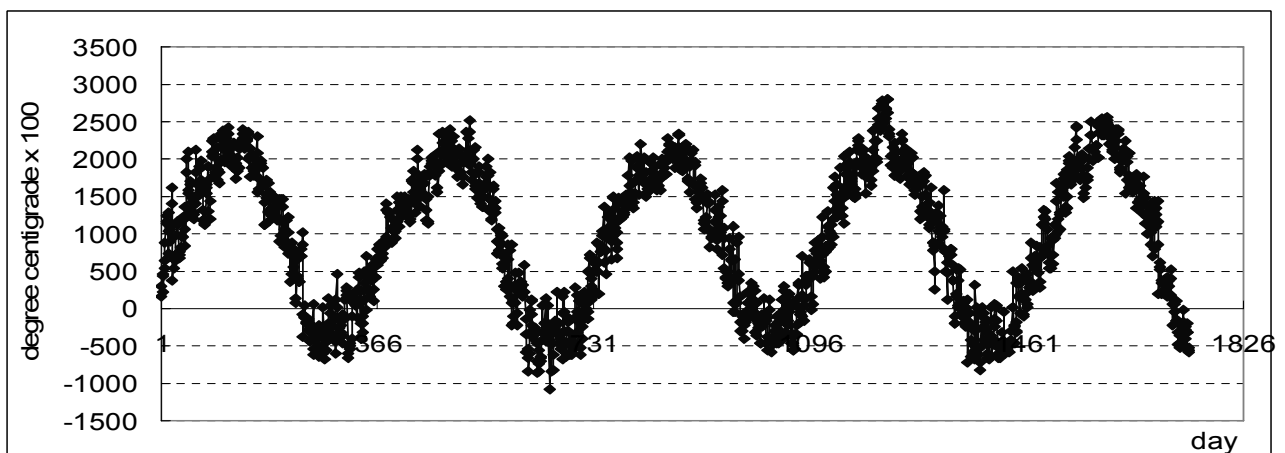


Fig. 2.13.2 Temperature of Mt. Moiwa in Sapporo City on-site, 1.4.2001-31.3.2006

2.13.2 Takino Park in Sapporo City, daily visitor numbers, temperature at noon on-site, and meteorological data of Sapporo from 1.4.2001 to 31.3.2006. Visitor numbers were counted by the entrance of parking area. Two terms of frequent use were observed in each year, e.g., through spring to summer and in winter. Among these terms, temporary close downs were caused by the modification of the facilities.

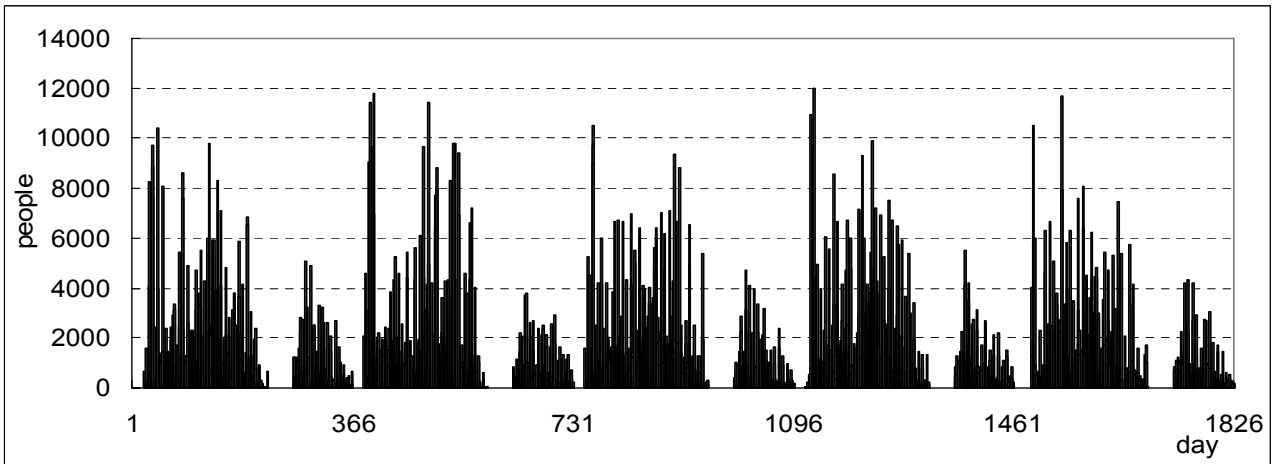


Fig. 2.13.3 Fluctuation of daily visitors at Takino Park in Sapporo City, 1.4.2001-31.3.2006

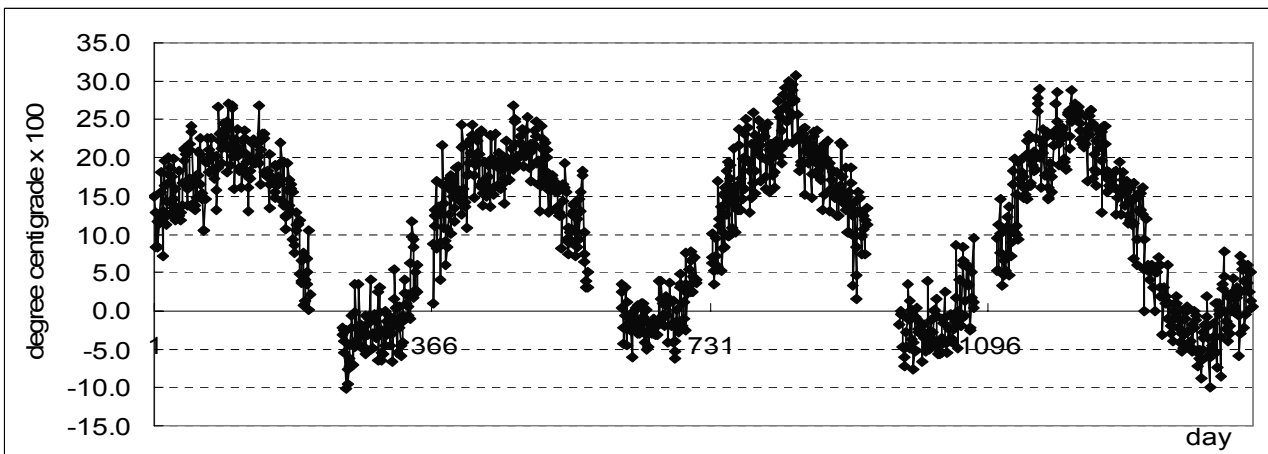


Fig. 2.13.4 Temperature of noon at Takino Park in Sapporo City, 1.4.2001-31.3.2006

2.13.3 Mt. Tsukuba in Tsukuba City, daily visitor numbers, average temperature, rainfall, and other meteorological data, from 1.4.1993 to 31.3.2003

Visitor numbers were counted at the entrance gate of ticket checking of Tsukuba Mountain Railway Company. Two terms of frequent use were observed in each year, e.g., in spring and autumn. During these seasons, the comfortable temperature and flowers and fresh leaves or colored leaves induced many visitors.

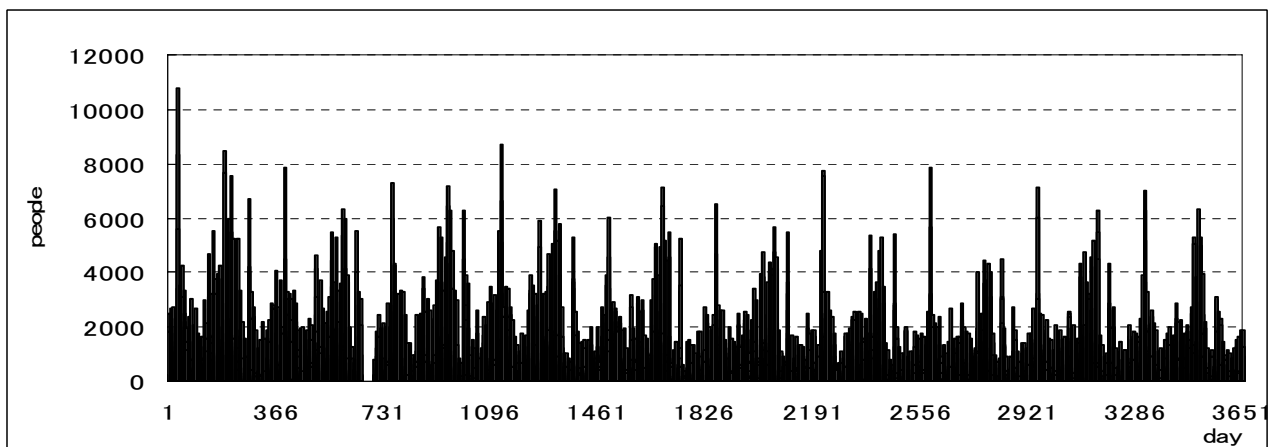


Fig. 2.13.5 Fluctuation of daily visitors at Mt. Tsukuba in Tsukuba City, 1.4.1993-31.3.2003

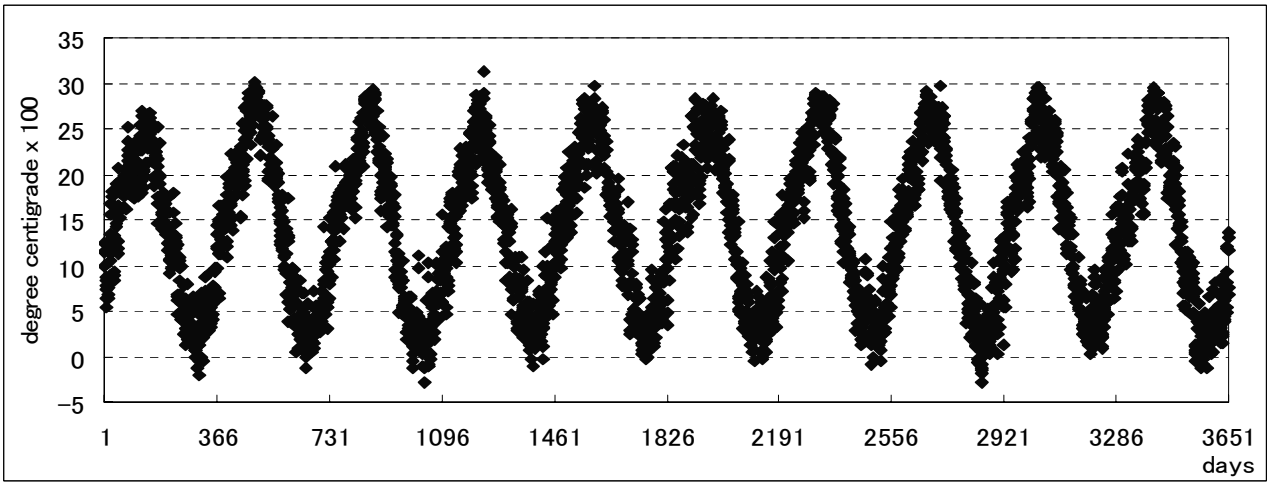


Fig. 2.13.6 Average temperature at Mt. Tsukuba in Tsukuba City, 1.4.1993-31.3.2003

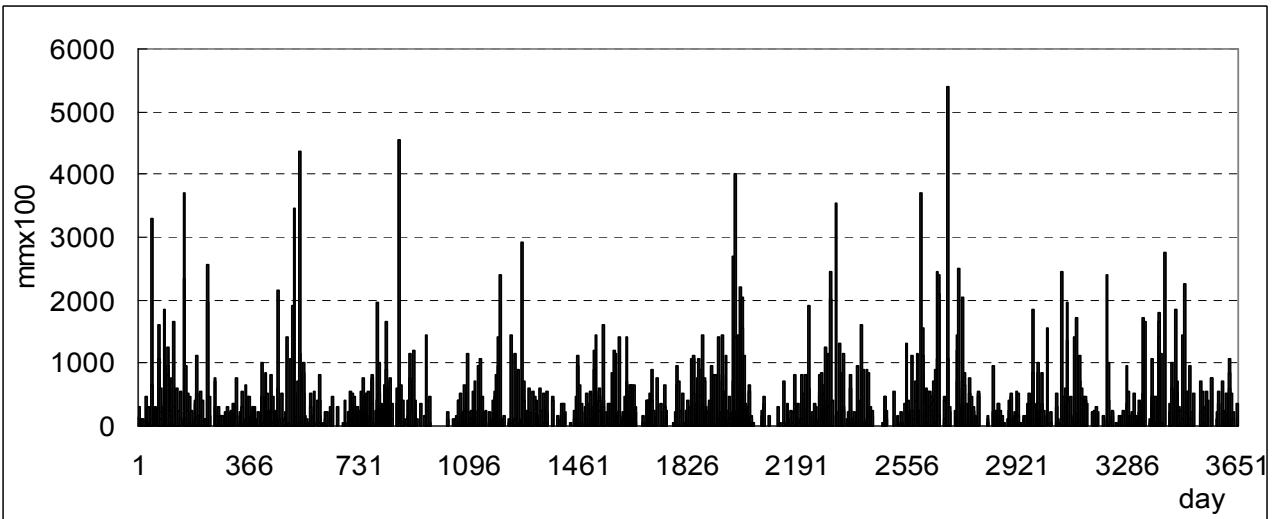


Fig. 2.13.7 Rainfall at Mt. Tsukuba in Tsukuba City, 1.4.1993-31.3.2003

2.13.4 Hamarikyu Garden in Tokyo, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in spring, because of cherry blossoms. People use this garden through the year constantly, because this is garden located near the central area of Tokyo.

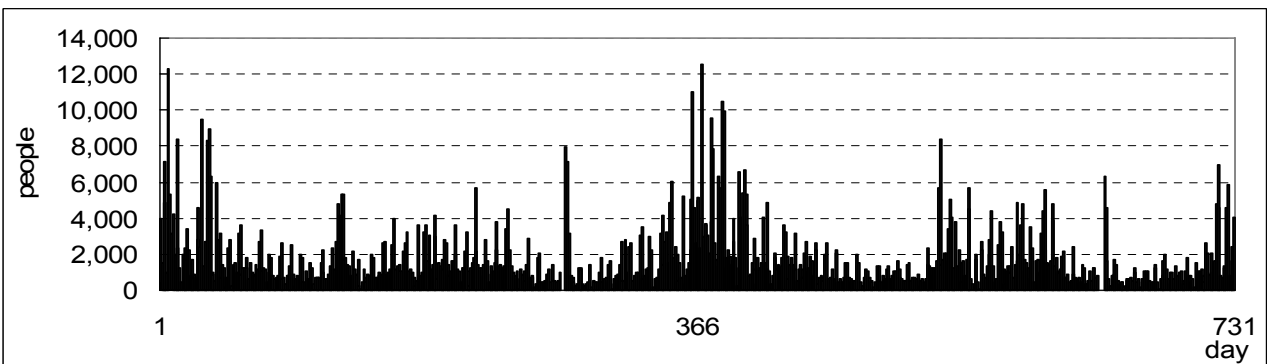


Fig. 2.13.8 Fluctuation of daily visitors at Hamarikyu Garden in Tokyo, 1.4.2003-31.3.2005

2.13.5 Shiba Garden in Tokyo, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. People use this garden through the year constantly, because this garden also locates near the central area of Tokyo.

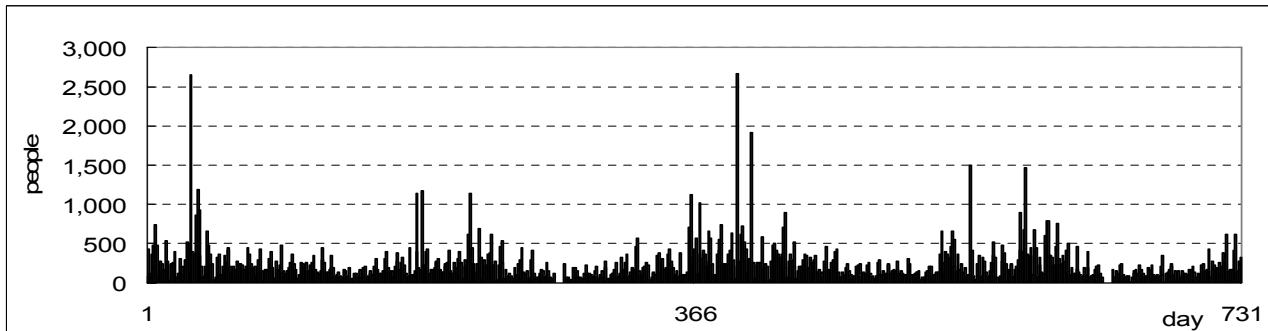


Fig. 2.13.9 Fluctuation of daily visitors at Shiba Garden in Tokyo, 1.4.2003-31.3.2005

2.13.6 Korakuen Garden in Tokyo, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted at the ticket office by hand, as was advised by the park researcher. Many people visited in spring of cherry blossoms and in autumn of colored leaves. People over used this garden at the cherry blossom season, because this garden has only 7 ha and is located at the central area of Tokyo.

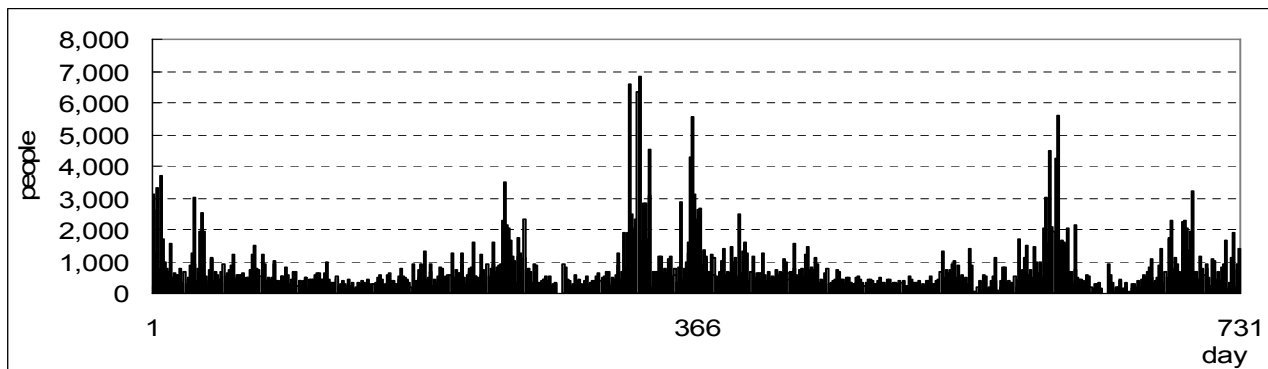


Fig. 2.13.10 Fluctuation of daily visitors at Korakuen Garden in Tokyo, 1.4.2003-31.3.2005

2.13.7 Iwasaki Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. People visited through the year constantly, because this garden is located near the central area of Tokyo and has the building of cultural heritage.

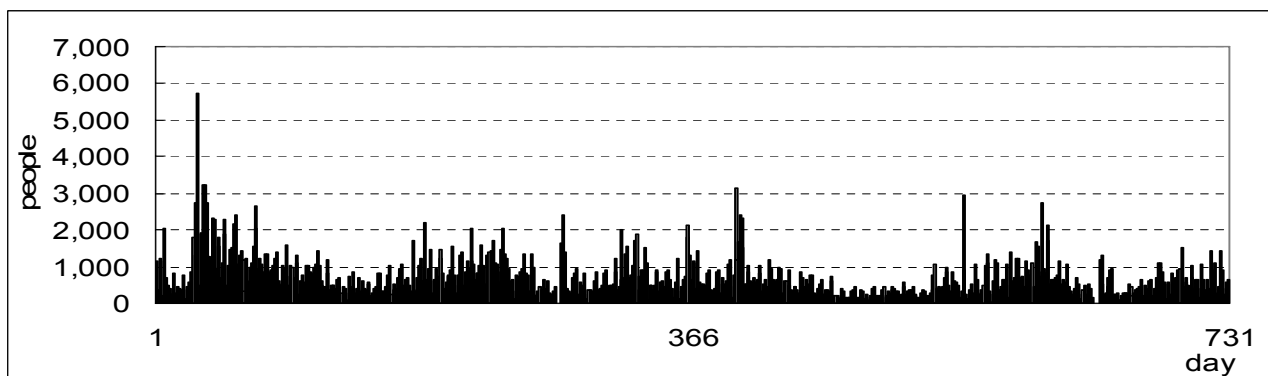


Fig. 2.13.11 Fluctuation of daily visitors at Iwasaki Garden in Tokyo, 1.4.2003-31.3.2005

2.13.8 Rikugien Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in spring because of cherry blossoms and in autumn because of colored leaves. People use this garden temporally, because this garden was designed as a typical Japanese Garden, not to be used by many people simultaneously.

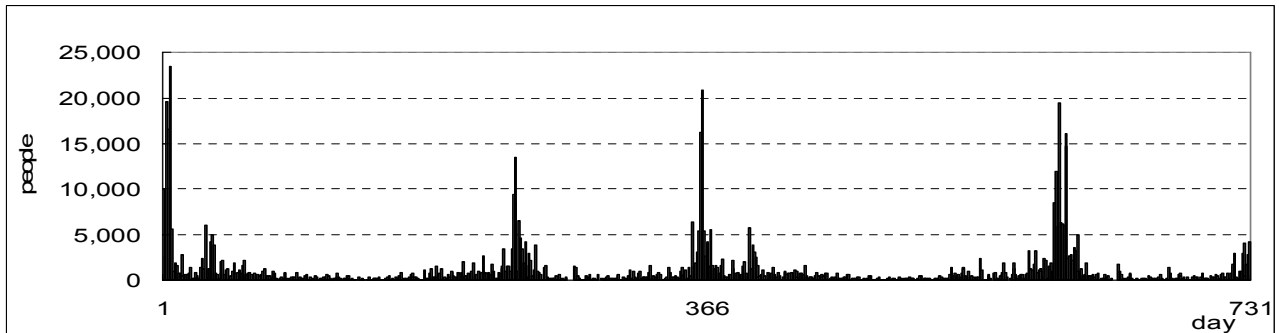


Fig. 2.13.12 Fluctuation of daily visitors at Rikugien Garden in Tokyo, 1.4.2003-31.3.2005

2.13.9 Hyakkaen Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in autumn because of Japanese bush clover blossoms. People use this garden through the year constantly, because this garden has various kinds of plants and neighboring people use it frequently.

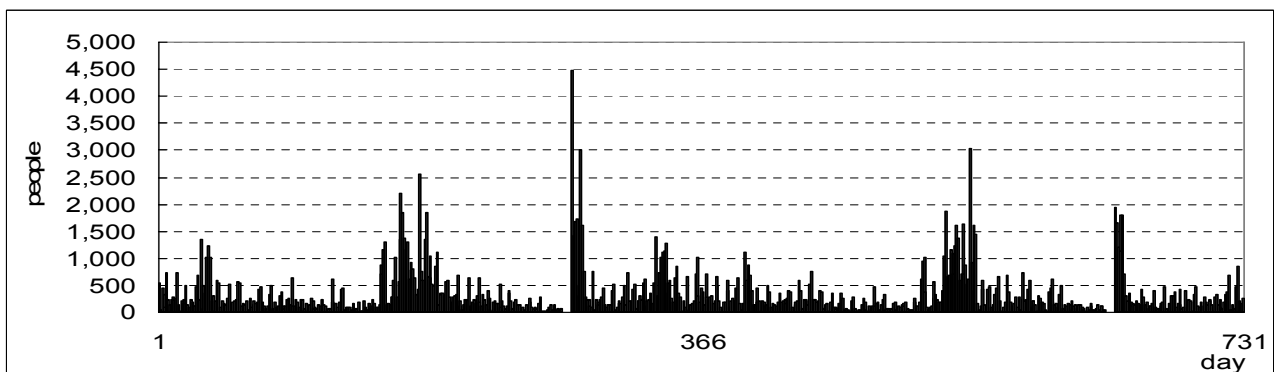


Fig. 2.13.13 Fluctuation of daily visitors at Hyakkaen Garden in Tokyo, 1.4.2003-31.3.2005

2.13.10 Kiyosumi Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in spring because of cherry blossoms. People use this garden through the year constantly, because this garden has the stone monument of Haiku by the famous Haiku poet Basho.

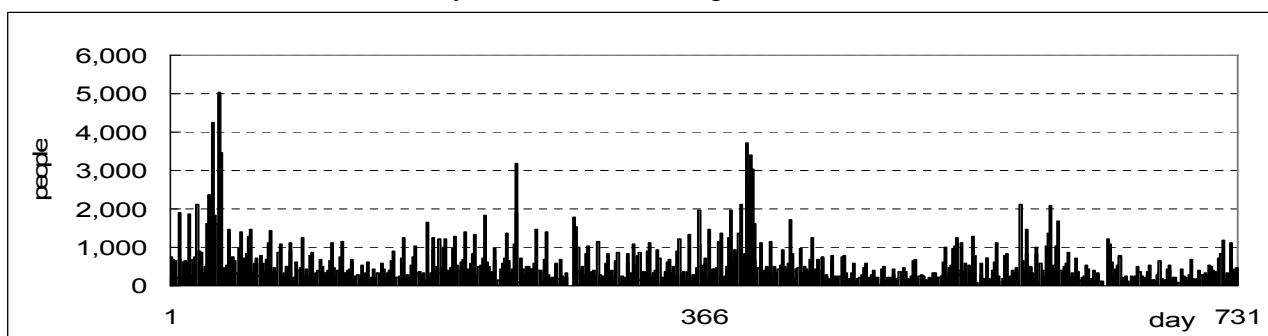


Fig. 2.13.14 Fluctuation of daily visitors at Kiyosumi Garden in Tokyo, 1.4.2003-31.3.2005

2.13.11 Furukawa Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in spring because of cherry blossoms and in autumn because of colored leaves. People use this garden temporarily, because this garden has a small area of only 3 ha.

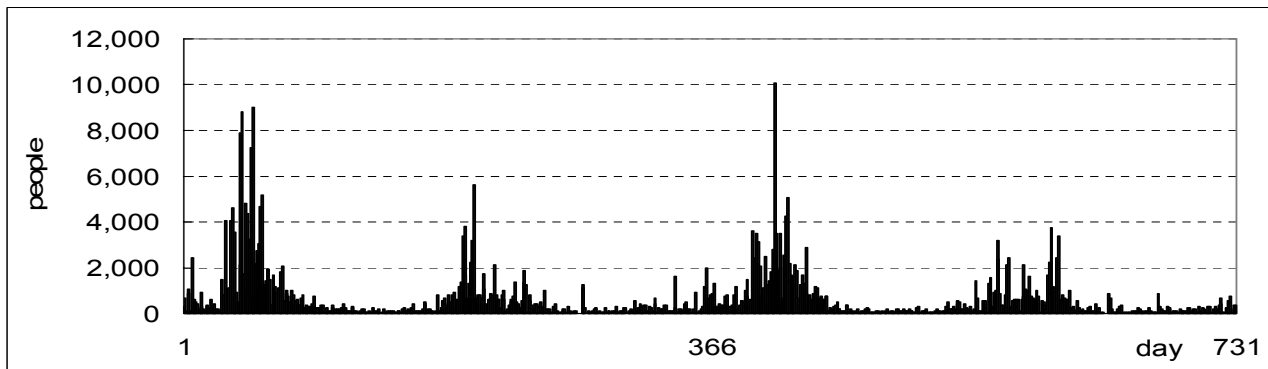


Fig. 2.13.15 Fluctuation of daily visitors at Furukawa Garden in Tokyo, 1.4.2003-31.3.2005

2.13.12 Tonogayato Garden, daily visitor numbers from 1.4.2003 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited in autumn because of colored leaves and in early summer because of fresh leaves. People use this garden through the year constantly, because this garden has a typical forest of coppice in the Musashino area.

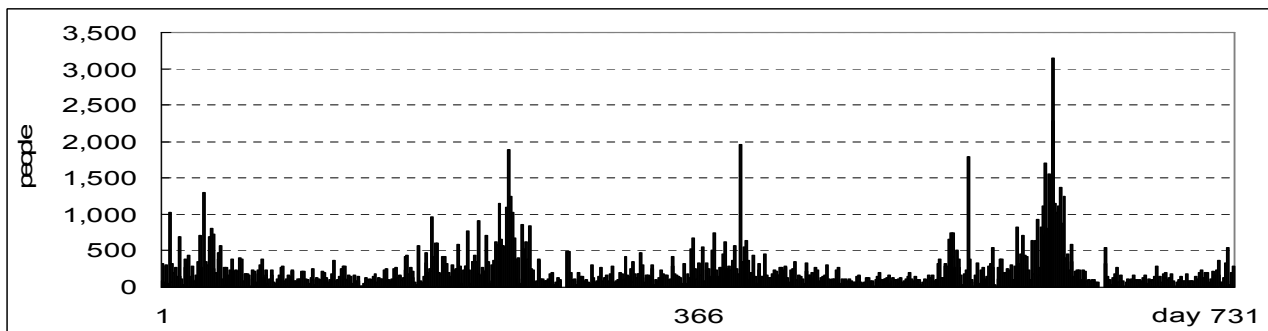


Fig. 2.13.16 Fluctuation of daily visitors at Tonogayato Garden in Tokyo, 1.4.2003-31.3.2005

2.13.13 Temperature in central Tokyo from 1.4.2003 to 31.3.2005

Meteorological Agency measured the data at the central area of Tokyo called Otemachi.

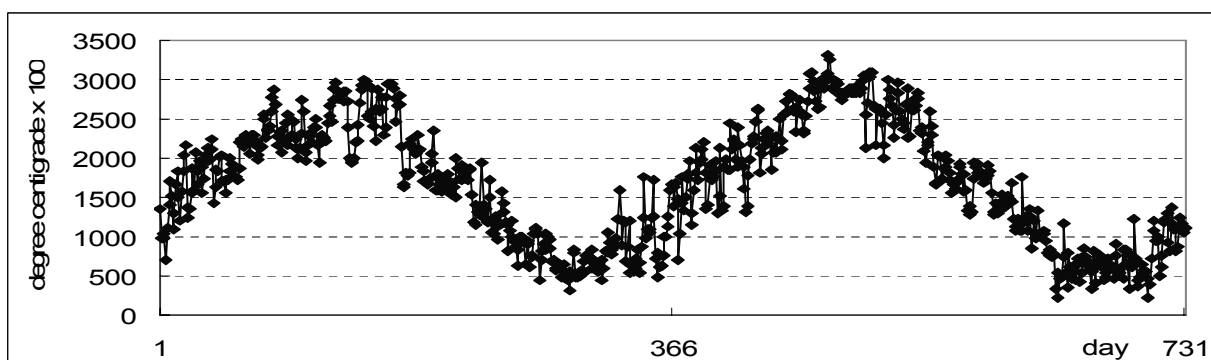


Fig. 2.13.17 Average temperature in central Tokyo, 1.4.2003-31.3.2005

2.13.14 Showa Memorial Park in Tachikawa City, daily visitor numbers from 1.4.2004 to 31.3.2006
 Visitor numbers were counted at the entrance gate by the officer. Many people visited for the events or of the festival term. A huge number of people use this park simultaneously, because this park has a big area of 180 ha.

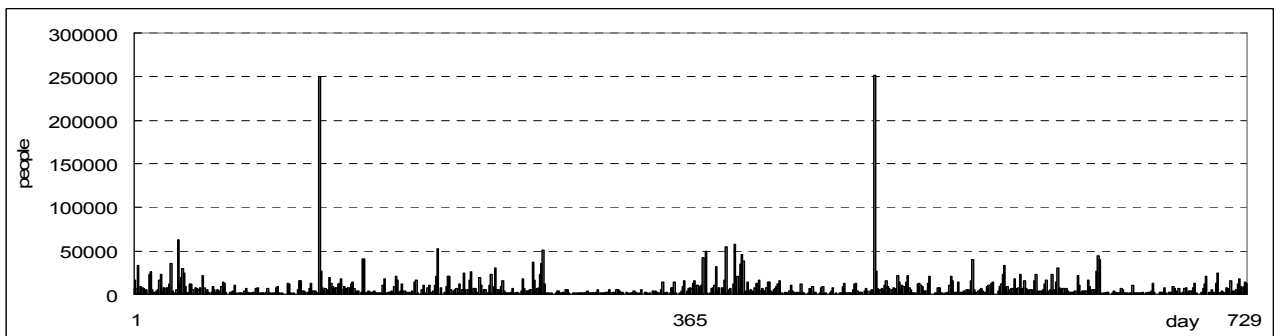


Fig. 2.13.18 Fluctuation of daily visitors at Showakinen Memorial Park in Tachikawa City, 1.4.2004-31.3.2006

4.13.15 Okinawa Oceanic Exposition Memorial Park in Motobu Town in Okinawa, daily visitor numbers and meteorological data at Nago City from 1.4.1995 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the garden. Many people visited on the event day of fireworks or concerts. People use this park in winter also, because this park is located in a subtropical climatic zone. The visitor number was raised in 2004 by the addition of a new facility and the increase of open days. The meteorological data was reported at the nearest measurement station in the city of Nago.

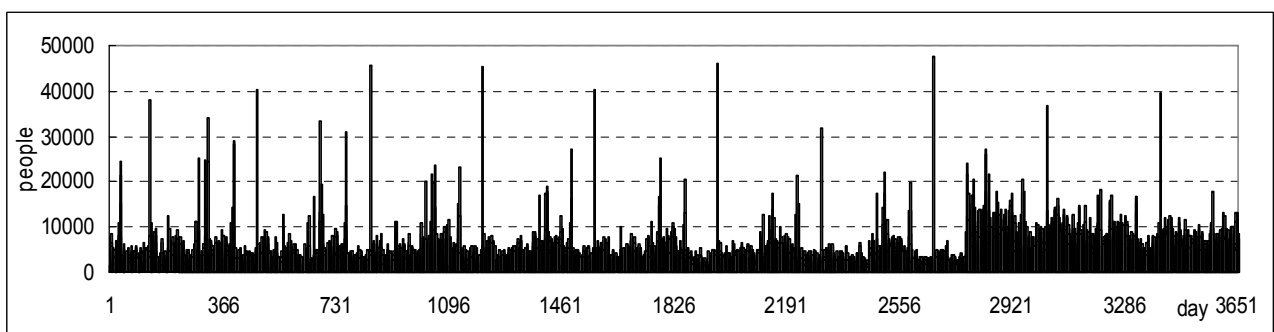


Fig. 2.13.19 Fluctuation of daily visitors at Okinawa Oceanic Exposition Memorial Park in Motobu Town of Okinawa, 1.4.1995-31.3.2005

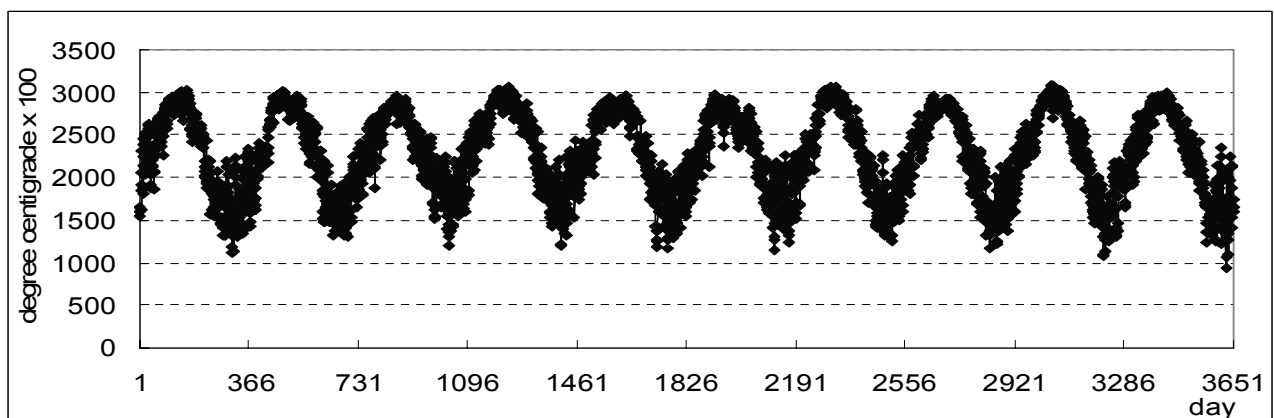


Fig. 2.13.20 Average temperature at Nago City in Okinawa, 1.4.1995-31.3.2005

2.13.16 Shuri Castle Park at Naha City in Okinawa, daily visitor numbers and meteorological data at Naha from 1.4.1995 to 31.3.2005

Visitor numbers were counted by the ticket numbers of the castle. Many people visited in winter because of the warm climate. People use this park through the year frequently, because this castle was designated as a World Heritage site in 2000. Meteorological data was reported at the measurement station in the city of Naha.

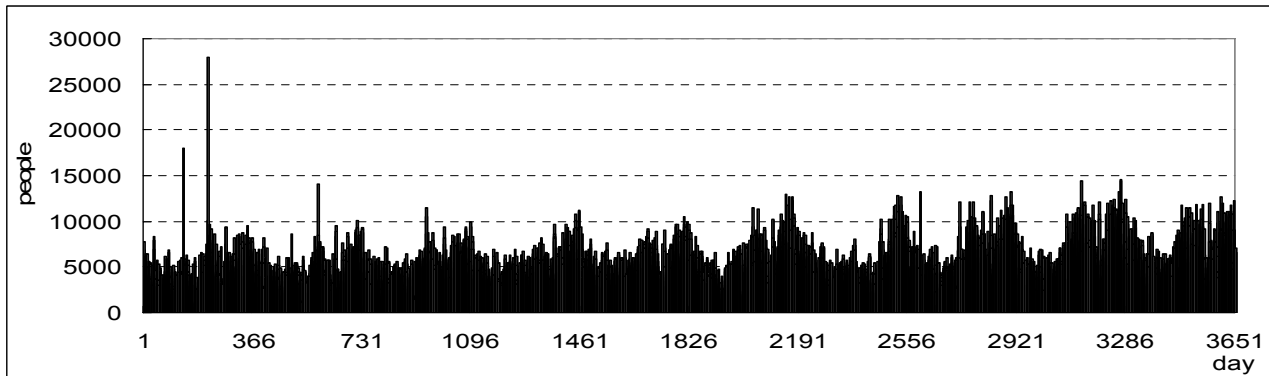


Fig. 2.13.21 Fluctuation of daily visitors at Shuri Castle Park in Naha City, 1.4.1995-31.3.2005

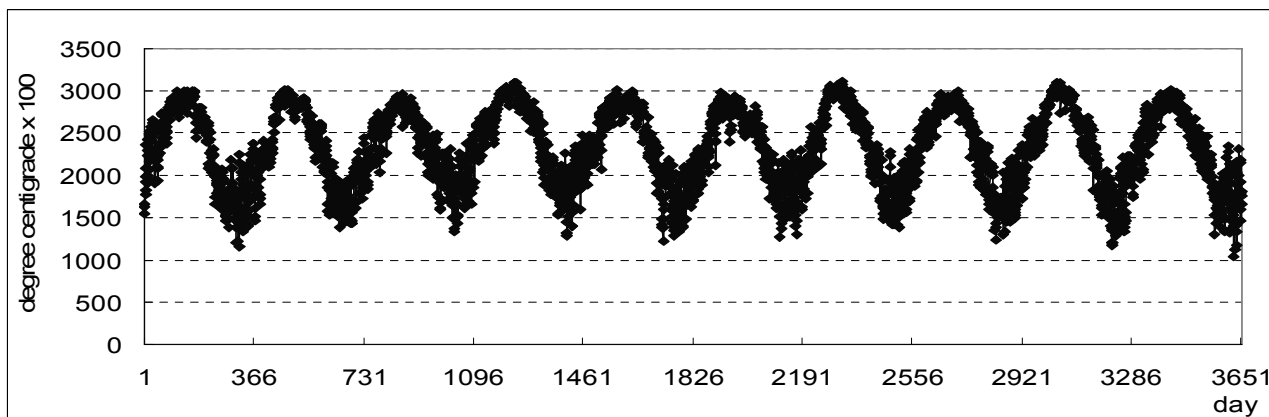


Fig. 2.13.22 Average temperature at Naha, 1.4.1995-31.3.2005

2.13.17 Shikinaen Garden at Naha City, daily visitor numbers from 1.4.2004 to 31.3.2006

Visitor numbers were counted by the ticket numbers of the garden. Many people visited on festival days. People do not use this garden often in spite of the good location of the city, because this garden was not known by the general public.

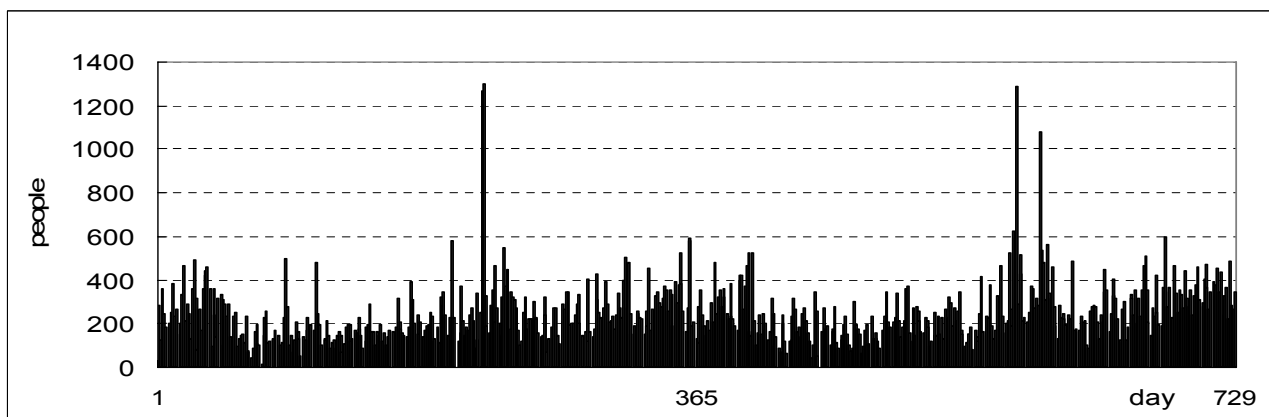


Fig. 2.13.23 Fluctuation of daily visitors at Shikinaen Garden, 1.4.2004-31.3.2006

2.14 Innsbruck observation by Photographs



Photo 2.14.1 Paragliding



Photo 2.14.2 Mountain touring



Photo 2.14.3 Rock climbing

3. Chronology of the research

Oct., 1983. - Oct., 1984 Dr.-Eng. Yoji AOKI stayed at Munich Technological University, Weihenstephan in the city of Freising, and he found Kirchner's work which was published in 1970 at Vienna.

May, 1998. AOKI visited the office of Dipl.-Ing. Wilfried KIRCHNER in Vienna.

Feb., 2002. AOKI joined the MMV1: Monitoring and Management of Visitor Flows in Recreational and Protected Areas, held at Bodenkultur University in Vienna. He contacted to the hosts at the University.

Oct., 2003. We came to propose a cooperative research between Austria and Japan about "Comparison of Outdoor Activities between Austria and Japan".

February-March, 2004. Visit of Dipl.-Ing. Christiane BRANDENBURG to Japan

Table 3.1 Schedule of Christiane BRANDENBURG

Date	Schedule
29. February	Arrival at Narita by OS 51 9:15, stayed at Ninomiya House. Room 3104
1. March	Greeting our directors and some colleagues
2. March	Greeting to our division and visit Tsukuba University, Prof. Ito and Prof. Kureha
3. March	Visiting some parks with Tsukuba City officers, welcome party of Brandenburg by Tsukubanekai
4. March	Visiting Chiba University with Ms. Sakakibara
5. March	Visiting Mt. Tsukuba with Ibaraki Prefecture Government
8. March	Tsukuba Center - Haneda - Shin-Chitose Airport - Sapporo - visited Hokkaido Univ., Prof. Asakawa, Dr. Aikoh and gave her lecture "Leisure and Recreation Research in Austria"
9. March	Visiting Takino Park, Nopporo Park and City Parks in Sapporo area
10. March	Sapporo - Shikotsu lake - Shin-Chitose Airport - Yamagata Airport - Yamagata Prefecture Government - Tohoku Art and Design University, visited Prof. Mita
11. March	Visiting Mt. Zaoh and city Castle Park
12. March	Retuning from Yamagata - Sendai - Tsuchiura - Tsukuba Center
15. March	Visited Environment Ministry Mr. Sasaoka and move to Kawaguchiko Lake - Kofu, visited Prof. Hanaoka of Yamanashi
16. March	Visiting wine park of Katsunuma Village and visiting Ueno Park, Korakuen Garden, Hibiya Park and Hamarikyu Garden in Tokyo with Director Ito of North Park Office of Tokyo Metropolitan Government
17. March	Visited Tokyo University of Agriculture, Prof. Suzuki and give her lecture, and visited Tokyo University, Prof. Shimomura
18. March	Visiting Nikko National Park Office, Deputy Director Ozawa and visited Yumoto Ski area, Senjo wetland, and Ryuzu Waterfall, Chuzenji Lake
19. March	Visited Kegon Waterfall, Toshogu Shrine, moved to Utsunomiya University and discussed with Prof. Nagai on "Measurement of Recreational Activities"
22. March	Visited Osaka Prefecture University, met with Prof. Maenaka and gave her lecture
23. March	Visiting the Shugakuin Royal Garden and Japanese Gardens at Kyoto
24. March	Visiting Fukuoka City and some parks, and visited Prof. Yokoyama of Kyushu Industrial University and had the discussion on "Recreational Use of Landscapes"
25. March	Visited Saga University, met with Prof. Mishima and gave a lecture
26. March	Visited the Memorial Museum of Atomic Bomb and the Memorial Museum of Siebold at Nagasaki City and move to
29. March	Preparation of research report
30. March	Preparation of research report
31. March	Starting from Tsukuba Center 7:20 and leave for Vienna by OS 52 11:25.

Dec. 2004. Proposal was approved by JSPS: Japan Society of the Promotion of Science

June 2005. Proposal was approved by FWF: Fonds Zur Foederung der wissenschaftlichen Forschung

Dec. 2005. Visit of Japanese members to Vienna.

Seminar at BOKU on 15. December

AOKI: Introduction of our project and Japanese members

OGUCHI: An introduction to outdoor activities in Japan

KIKUCHI: An introduction of Parks in Tokyo Metropolitan Government

USUKI: Brief introduction of National Parks in Japan

OBASE: Development and use of long bikeways in case of Tsukuba City

AIKOH: Crowding Studies and Park Management in Hokkaido, Japan

Discussion at BOKU on 19. December.

AOKI: Video presentation “Closer to Japan”, 15 minutes by NTSC video tape

AIKOH: A proposal of questionnaire survey by Prof. ASAKAWA

BRANDEBURG: research scheme of Austrian side

ARNEBERGER: Hope of his visit schedule

Discussion on Arne’s schedule

Schedule of Japanese – Austrian Science Exchange, Visitation of Viennese Recreation Areas

Table 3.2 Thursday 15.12.2005 – Presentations

Time	Place	Contact persons
13:15	Welcome at the Institute of Landscape Development, Recreation and Conservation Planning (ILEN), University of Bodenkultur, Peter Jordan Str. 65, ...	Muhar, Schacht, Arnberger, ...
13:45	Lecture Room EG 05	
14:00	Presentations	invited persons
15:00	Coffee break	
15:30	Presentations and discussions	
16:30	Coffee	
17:30	Lunch, Siebensternbräu, 1070 Wien	

Table 3.3 Friday 16.12.2005 - Suburban Recreation Areas (Transportation by a VW Multivan)

Time	Place	Contact organisation / person	weather
8:00	Departure Hotel Geblergasse near U6 Alser Station	Brandenburg	Hohe Warte
8:30	Obere Alte Donau		4.4centigrade 0.5m/s
10:00	Nationalpark Donau-Auen	Nationalparkmanagement Donau-Auen /Viennes Part Lobau Nationalpark-Forstverwaltung Lobau, Dr. Anton, Krabichler-Platz 3, A-2301 Gro ß -Enzersdorf, Tel.: ++2249/2353, Herr Faltisek 0664 / 815 67 22	Cloudy
12:00	Lunch – Inn Staudigl or in Mühleiten		6.7 centigrade 0.6m/s
13:30	Marchfeldkanal	Betriebsgesellschaft Marchfeldkanal, Franz Mair-Strasse 47, 2232 Deutsch-Wagram, Tel.: 02247/4570-0, DI Susanne Karl	Cloudy
16:00	Neue Donau - the north		
17:00	Cobenzl - Himmel		
18:00	Kahlenberg - Leopoldsberg		4.7 centigrade 0.3m/s
19:00	Heuriger - Grinzing		

The participants need warm clothes, comfortable shoes. Vienna is in winter, the thermal perception is “very cold”, the first snow covers the grounds at the recreation areas and it is very windy.

Table 3.4 Saturday 17.12.2005 - Urban Recreation Areas (Public transport)

Time	Place	Contact organisation / person	Weather (On-site)
9:00	Departure Hotel Geblergasse, near U6 Alser Station	Arnberger	3.8 Centigrade, 0.6 m/s
	Esterhazypark, Stadtpark, Prater	Parkmanagement Ing. Riedl	Cloudy
12:30	Lunch Schweitzerhaus / Prater		Cloudy
	Wienerberg,		
	Imperial garden Schönbrunn	Dr. Doblhammer	1.1Centigrade, 0.6 m/s
17:00	Dinner at Christmas market – Schönbrunn		Snow

Table 3.5 Monday 19.12.2005 – Project Meeting

Time	Events	Place	Contact person
10:00	Project meeting	Simony Haus 3rd Floor, Peter Jordan Str. 65, 1180 Wien	Arnberger
13:00	Farewell - Lunch		

March-April in 2006, Visit of Dipl.-Ing. Arne ARNBERGER to Japan

Table 3.6 Schedule of Arne ARNBERGER

Date	Schedule
20. March	Arrival at Narita 9:25 by OS51, stayed at Ninomiya House
22. March	Visiting NIES 11:00 and greeting with the heads of NIES
23. March	Starting 9:30 Ninomiya House and Visit City Government Office 10:00 and Mt. Tsukuba with Associate Prof. Ito, 18:30 joined the DSV by Frau Niedermeyer
24. March	Started 9:30 Institute and met with the city mayor of Tsukuba City and visiting city parks in Tsukuba, and 15:00 presentation for general people at Tsukuba Information Center with Prof. Obase and 18:00 welcome party by City
27. March	Starting 8:30 Ninomiya House and 10:00 Ibaraki Prefecture Government with Prof. Koyanagi and Kairakuen Garden, and moving to Ibaraki University, and gave his lecture "Austrian landscape and Parks"
28. March	Starting 8:30 Ninomiya house and 10:00 visited Hitachinaka Seaside Park
29. March	Starting 8:15 Institute and 10:00 visited Park Office of Tokyo Metropolitan Government at Ueno and touring some parks with Mr. Kikuchi
30. March	Starting 8:15 Institute and visited some parks of Tokyo
31. March	Investigating parks in Tsukuba City
3. April	Starting 8:30 Tsukuba Center to Haneda and took ANA125 10:40 for Okinawa, visited the University of Ryukyus with Prof. Emeritus Uyema
4. April	Visiting Ocean Exposition Commemorative Park, with Officer Gushi and Aragaki
5. April	Visiting Shuri Castle Park, with Officer Nakamoto, and took ANA128 14:50 at Naha airport and coming back to Tsukuba
6. April	Investigation at the parks of Tokyo
7. April	Investigation at the parks of Tsukuba
10. April	Starting 8:30 Tsukuba Center and 10:15 visited Showa Kinen Park with Officer Hisatomi, and took bus 16:00 from Hino bus stop to Shinshu University
11. April	Gave his lecture at the University by Prof. Itoh and took bus 13:30 back to Tsukuba
12. April	Starting Institute 8:09 take train 8:40 at Hitachinouchiku to Ueno and Aomori and visit Prof. Fujita
13. April	Starting 7:30 Aomori to Sapporo and visited Hokkaido University by Dr. Aikoh
14. April	Field trip to Nopporo Forest Park
15. April	Visit Parks and take 19:25 ANA76 flight to Tokyo and take bus 21:55 to Tsukuba
17. April	Working for research report
18. April	Preparation of research report and gave his lecture at the Institute 15:00
19. April	Took limousine bus 6:20 at Tsukuba Center and fly from Narita 10:40 by OS52.

Sept. of 2006. Prof. Koyanagi and Dr. Ishiuchi visited Schoebrunn Garden in Vienna to investigate users' behaviors. They photographed the users by the digital camera at the 22 cross points omni directionally, with 18 pictures.

Sept. of 2006. Prof. Itoh visited Wienerwald in Vienna to make a comparison of the use of Mt. Tsukuba. He observed the different use of Turkish immigrants, the noise by Nordic walking and the access system by bus services.

Oct. of 2006. Prof. Obase visited Stadt Park in Vienna to make a comparison of the use of Doho Park in Tsukuba.

Concluding remarks

Conclusions from the Austrian Project side

The relevance of the project for urban recreation research and green space management

So far, little recreation research in urban settings in respect to motivations, crowding and use displacement has been carried out, compared to backcountry and front country settings. Most of the outdoor recreation research has been undertaken in North America, while, particularly for Austria's and Japan's urban green spaces, information is scarce. Investigations on cross-cultural differences in crowding preferences and visiting motives of urban green space visitors between Austria and Japan are also missing. This project is the first in Europe which systematically investigated crowding and use displacement across several urban green spaces and examined cross-cultural differences and commonalities between Japanese and Viennese green space users in a standardized manner using several methods in parallel.

Inter-area comparisons indicated that visitor structures varied significantly among the Viennese green spaces. Provided infrastructure, the location within the city and access possibilities, had an influence on the structure. Visitors carried out different activities in these areas, appeared in different group sizes and age groups. Inner urban areas providing children's playgrounds were more visited by females, while peri-urban forests are more used by males. For all green spaces investigated, extremely high visiting frequencies were gained. On average, respondents had visited these areas about 90 times during the last year. This documents the urgent need for urban green spaces.

All visiting motives asked about varied significantly across the investigated green spaces in Vienna. Particularly the differences between inner urban pocket parks and peri-urban forest sites were obvious. Social aspects, such as observing other people and meeting friends, played in inner urban settings a more prominent role, while experiencing nature, solitude and sport/health aspects were more related to forest visitors. These findings indicate the different role urban green spaces play for an urban population. Overall, green space visitors seem to be rather satisfied with the investigated recreation areas in Vienna. Satisfaction, however, varied significantly across those. Smaller recreation areas received lower satisfaction scores.

Previous crowding research in the US focused on overcrowding, while the negative effects of under crowding were rather neglected. This study documents the important role of crowding as well as under crowding and crowding-induced use displacement effects. For about 46% of respondents the investigated areas were overcrowded on Sundays, while weekdays' use levels were mostly perceived as pleasant. For some areas, up to 10% of the respondents expressed under crowding perceptions. The project also showed that there is an influence of housing and living conditions on crowding perceptions of urban green spaces.

Previously perceived high use levels in the investigated parks induced coping behavior strategies for about 55% of all respondents. About 10% displaced to other areas, 9% reduced their frequency of visit, and close to 30% shortened their visit. These displaced users will further contribute to urban traffic, emission, wear of infrastructure etc., also affecting recreation conditions in the substitute areas. Staying at home because of overcrowding may have an impact on human health. Therefore, use displacement due to exceeded social carrying capacity of recreation areas should be a major concern for the planning and

management of urban green spaces and urban development in Vienna.

The project also clarified the relative role of social aspects, such as use levels compared to design and managerial aspects, and developed thresholds for specific outdoor activities such as Nordic walking, jogging and bicycling based on social, managerial and design attributes. It further demonstrated the variability in park users' preferences for design, landscape and social aspects depending on the site investigated. Forest visitors, for example, preferred more forested settings with very low use levels, while inner urban park visitors preferred more developed settings with higher use levels. This project documented that visitor management could be done by providing specific outdoor recreation qualities and recreational infrastructure.

Cross-cultural research identified differences and commonalities between Japanese and Viennese green space users. Visitor motivations to urban forests and historic gardens showed some overlapping. For an ethnic group's recreation, health, nature and landscape are important visiting motives, while dog walking, watching other people, meeting with friends and family, taking children outside, and solitude were rather unimportant.

Cross-cultural differences in crowding preferences of urban forest visitors between Vienna and Sapporo, using a standardized image-based stated choice approach, revealed that Viennese forest visitors are more sensitive to overcrowding, while under crowding might be a more prominent issue in Japan.

The results of this international project strengthen the importance of outdoor recreation research in urban settings in general, and specifically the role of motivations, crowding and use displacement in the urban context. The inter-area and cross-cultural comparisons of green space users will add to an understanding of urban green space use in Japan and Austria. Results indicate that urban green space users in both countries seem to be quite similar and urban green space management of both countries are facing related challenges. Thus, urban green space management of both countries will benefit from this cross-cultural research project.

Associate Prof. Dr. ARNBERGER, Arne, University of Natural Resources and Applied Life Sciences, Vienna.

Conclusions from the Japanese Project side

Comparison of outdoor activities between Austria and Japan

We could find some differences of outdoor activities among different climatic conditions. The exact statistical tests and the meaning of the differences will be considered in the future, but the following results were obtained.

- (1) We tried the measurements using questionnaires and observatory methods and obtained the results of different activities in Austria and Japan.
- (2) The impressions and the visitor numbers showed reasonable results, although the crowdedness and the activity measurements were difficult to compare.

Dr. Eng. AOKI, Yoji, National Institute for environmental Studies, Tsukuba

Researchers' profile

This project was contributed to by many researchers in Japan and Austria. Their profiles are shown below, e.g., title, name, affiliation, contact address, personal history and research interests. The names are listed alphabetically. Their affiliations were reviewed in the term of this research project, i.e. from April of 2005 to March of 2007 in Japan and from October of 2005 to January of 2008.

(1) Prof. Dr. AIKOH, Tetsuya

Associate Professor of Horticultural Science and Landscape Architecture, Research Faculty of Agriculture, Hokkaido University.

Tel/Fax: +81-11-706-2452, E-mail: tetsu@res.agr.hokudai.ac.jp

Ph.D. (Agriculture) 2002, Hokkaido University, A study on visitors' crowding perception and carrying capacity in mountainous Natural Parks.

1994- Assistant Professor,

2008-Associate Professor, Horticultural Science and Landscape Architecture, Graduate School of Agriculture, Hokkaido University.

Research interests:

Visitors' crowding perception and carrying capacity, coping behavior, visitor travel simulation model in mountainous Natural Parks.

Recreational impacts on natural parks, the impact of camping on vegetation and soil conditions at campsites, and human waste disposal in mountainous Natural Parks.

(2) Dr.-Eng. AOKI, Yoji

Independent Senior Researcher of Social and Environmental Systems Division, National Institute for Environmental Studies. Tel. +81-29-850-2389, Fax. -2572, e-mail: yojaoki@nies.go.jp

1976 Doctor Degree from Tokyo Institute of Technology, methods of green space planning based on the citizens responses.

1976-1983 Regional planning at NIES

1983-1984 Visitor at Freising-Weihenstephan, TUM.

1984-1990 Environmental perception at NIES.

1990-2000 Landscape appreciation at NIES.

2000- Experience of landscape at NIES.

Research interests:

Evolution process of landscape appreciation.

Effects of climate on outdoor activities.

(3) Associate Prof. ARNBERGER, Arne

Arne Arnberger is an associate professor for landscape planning. He is a teacher and researcher in the Institute of Landscape Development, Recreation and Conservation Planning of the University of Natural Resources and Applied Life Sciences in Vienna, Austria (BOKU).

Address: Peter Jordan Straße 82; 1190 Vienna

Phone ++43 1 47654 7205; Fax ++43 1 47654 7209; email: arne.arnberger@boku.ac.at

1995 Diploma in Landscape Planning and Landscape Architecture

1995-2000 Work in (Landscape) Architecture offices
1998 Diploma in Environmental Engineering
2000- Researcher at BOKU
2003 PhD in Landscape Planning and Resource Management (BOKU)
2004 Award of the City of Vienna and the Technical University of Vienna for spatial planning
2007 Associate Professor at BOKU

Research interests:

His professional and research interests include outdoor recreation in protected areas, forests as well as in urban settings, landscape aesthetics, social and ecological carrying capacities, ecotourism, visitor monitoring and visitor management, visitor simulation modeling, and environmental education. He has written a number of articles on these topics. He is involved in the Cost Action E33 Forests for Recreation and Nature Tourism.

(4) Prof. Emeritus Dr. ASAKAWA, Shoichiro

Professor Emeritus at Hokkaido University.

2007- Chief Director of the Sapporo City Park Greening Association.

Teaching landscape architecture and open space planning as an adjunct professor

Doctoral degree, the Graduate School of Agriculture of Hokkaido University.

Research interests:

Focusing on perceptions of landscape, landscape assessment and urban open space planning.

(5) a.o.Prof. DI Dr. BRANDENBURG, Christiane

Institute of Landscape Development, Recreation and Conservation Planning, BOKU - University of Natural Resources and Applied Life Sciences, Peter Jordan-Str.82, 1190 Vienna/Austria, Tel +43/1/47654/7204, Fax/7209, E-mail: christiane.brandenburg@boku.ac.at, <http://www.rali.boku.ac.at/425.html>

2001 Ph.D. from the University of Natural Resources and Applied Life Sciences Vienna

2004 Fellowship of Japan Society for the Promotion of Science

2007 the “venia legendi” for landscape planning

The research activities focus on recreation, especially the effects of weather on recreational activities, nature conservation and cultural landscape development.

(6) Prof. FUJITA, Hitoshi

Professor of Aomori University Graduate School of Environmental Sciences, Environmental Education Course & Environmental Management Course, Tel. +81-17-738-2001, Fax. +81-17-728-5300, E-mail: h-fujita@aomori-u.ac.jp.

1971 Joined the Environment Agency, graduated from Dept. of Forest Science, Faculty of Agriculture at Tokyo University.

1971-1999 Serving the Environment Agency for 28 years, National Park management, e.g., numbers of projects, including the conservation and breeding of ibises, *Mayailurus iriomotensis* and Iriomote cats

Director General of the Tohoku Regional Office, Environment Agency, Planning of Shiracami-Mountains World Heritage Site

1999-2003 Chief Professor of the Environmental Education Course at the Aomori University Graduate School of Environmental Sciences

2003- Dean of Aomori University Graduate School

Academic activities: Environmental education, Japanese Institute of Landscape Architecture

Research interests:

Comparison of walking in nature between Japan and Europe

Protection from the extinction of Japanese Wild Animals

(7) Prof. Dr. IKEDA, Takayuki

Professor of Urban and Regional Planning, University of the Ryukyus.

Doctorate in City Planning from Tokyo Metropolitan University.

Award, prize of the Institute of Japanese City Planning

Research interests:

City planning and architectural design, and more recently topics related to environmental preservation and improvement.

(8) Mr. INOUE, Masato

Graduated student of Landscape architecture, Chiba University

Research interest:

Park users' behaviors at Yoyogi Park.

(9) Mr. ISHIUCHI, Teppei

Ph.D. student of Urban and Civil Engineering, Ibaraki University

Research interest:

The correlation between the Visitors' Activities and the Barriers around Kairakuen Park.

(10) Prof. ITO, Taiichi

Associate Professor of the Graduate school of Environmental Sciences, University of Tsukuba

Teaching wild land planning and management and conducting research with anthropologists and archeologists on cultural resource management in protected areas

Graduated from Kyoto University with dissertation on U.S. national parks and forests.

Study experiences: University of Wisconsin, University of Michigan, Harvard University, Ohio State University and Lincoln University, New Zealand.

Research interests:

Local natural areas, surveying visitors at Mt. Tsukuba, a landmark of Tsukuba City

(11) Mr. KIKUCHI, Masayoshi

Head of Maintenance Section at Tokyo Metropolitan Park Association.

1985- Park administration, Construction Bureau, Tokyo Metropolitan Government

Management of street trees for 3 years, e.g., clipping trees, pest control and planting trees

Budgeting and physical planning of metropolitan parks

Basic park planning and design advisor e.g., urban and suburban parks

Maintenance and repairing of animal cabins in the zoo

Tokyo Metropolitan Government for 3 years, management of street parks and local parks

Tokyo Metropolitan Park Association, management of all metropolitan parks

(12) Prof. Dr.-Eng. KOYANAGI, Takekazu

Professor of Dept. of Urban & Civil Engineering, Ibaraki University.

Dr.-Eng., from Tokyo University

Research Assistant, Tokyo Institute of Technology

Associate Professor, Ibaraki University

1981- Research and Education on Landscape Planning and Design

Member of Landscape Council at Ibaraki Prefecture

Chairman of Urban Environment Design Committee at Hitachi City

Research interests:

Visitors' behavior and Space Design in Kairakuen Park

Landscape Planning and Design of Public Space, Green Space and Recreational Area

Landscape Resources and Tourism Resources

(13) Prof. Dr.-Eng. OBASE, Reiji

Professor of Institute of Policy and Planning Sciences, Tsukuba University, Tel/Fax +81-29-853-5551,

E-mail: obase@sk.tsukuba.ac.jp

1971 graduated Dept. of Architecture, Waseda University

1977 graduated Tokyo Metropolitan University of Doctoral Program

1978 awarded Doctoral Degree in Engineering

1981-1988 Research Associate in Toyohashi University of Technology and Assistant Professor in Showa Women University

1988-1993 researcher at Tsukuba University

1993-1994 Guest Professor at Helsinki University of Technology

2002- Professor of Tsukuba University

Research interests:

Town Planning

Planning of Community Road

Housing Planning

(14) Mr. OGUCHI, Suguru

Graduate student of Social Engineering Dept., Tokyo Institute of Technology.

Research interests:

Parks and outdoor activities, nature paragliding in free time

Outdoor activities in other countries as well as in Japan

(15) Associate Prof. SOSHIRODA, Akira

Associate Professor, Graduate School of Information Science and Engineering, and Dept. of Social Engineering, Tokyo Institute of Technology

Tel/Fax +81-3-5734-3474, E-mail: soshi@mei.titech.ac.jp

1993 Doctor of Eng. Tokyo Institute of Technology. A historical Study on the Developing Process of Resorts in Japan.

1987-1990 researcher, Mitsubishi Research Institute, Japan

1990-1994 Assistant Professor, Dept. of Social Engineering, Tokyo Institute of Technology

1994-1999 Associate Professor, Dept. of Architecture, Niigata University

1999- Associate Professor, Graduate School of Information Science and Engineering, and Dept. of Social Engineering, Tokyo Institute of Technology

Awards:

1997 The Second Prize for Tourism Research, Asia-Pacific Tourism Exchange Center (APTEC), a Historical Study on Inbound Tourism Policies in Japan.

1994 The Encouragement Prize for Papers, CPIJ, A Historical Study on the Developing Process of Resorts in Japan

Research interests:

Development process from resort village to resort city

Conservation and conversion of structures and buildings & sustainable tourism planning

Community impacts of tourism

Relationship between tourism policies and city planning

Relationship between tourism policies and cultural policies

(16) Mr. UENO, Tomoya

Graduated Student of Urban Planning Dept., Tsukuba University.

Research interests:

Urban planning methods of Germany

Management methods of Urban Green Space

Urban renewal influences to the old urban district

(17) Prof. USUKI, Mitsuo

Professor of Faculty of Regional Development Studies, Toyo University

Phone; Office +81-276-82-9155, E-mail: usuki@itakura.toyo.ac.jp

1972 Master's Degree in Science from Tohoku Univ.

1974 Joined the Environment Agency (EA), Minister's Secretariat

1974-1979 Assistant Warden, Nikko National Park Office, Nature Conservation Bureau (NCB) of EA

1979-1981 Tourism Policy Officer, Prime-Minister's Secretariat for compiling of White Paper on Tourism

1981-1984 International Cooperation Officer, International Affairs Division, Minister's Secretariat of EA

1984-1987 First Secretary of Embassy of Japan in Kenya, and Deputy Permanent Representative of Japan to UNEP and UNCHS-HABITAT (Nairobi)

1987-1994 Deputy Director, Office of Natural Resources Survey, and Coordinator for International Affairs, NCB, EA

1994-1997 Deputy Regional Representative, Regional Office for Asia and the Pacific of the United Nations Environment Programme (Bangkok)

1997-1998 Senior Coordinator for Biological Diversity, NCB, EA
1998-2000 Senior Advisor to Director-General, Global Environment Department, EA
2000-2002: Superintendent, Regional Office for Conservation, Minami-Kantoh, Ministry of the Environment (MOE)
2002-2003 Senior Visiting Fellow, UNU/IAS
2003-Present, Professor, Faculty of Regional Development Studies, Toyo University

(18) Prof. Dr. TASHIRO, Yoritaka

Professor of Landscape Architecture, Chiba University.

Doctorate in city planning from Tokyo University (1979).

Immediate Past President of International Federation of Park and Recreation.

Director and Standing Judge of International Awards for Livable Communities.

Director of International Mosaiculture Committee

Research interests:

Landscape planning and managements and practical methods of planning

Postscript

At the beginning of this research, we could not find any image of cooperation. But we could establish a good relationship between Austria and Japan. In 1970, there were two researchers without any communication in both of the countries. At that time, it was very difficult for general people to commute between the west side of the continent and the east side. In 1970, ca. 150,000 Europeans visited Japan and 610,000 visited in 2001 and Japanese who went abroad were 2.5 million in 1970 and 18 million in 2001. Nowadays we can communicate without hard efforts. But the understanding of the different outdoor activities among different climatic conditions was not so popular to study. We had counted the visitor numbers for the purpose of management of each park. In Japan we found the exact statistics of those numbers, but no one had tried to find differences among them. And there was no method of statistical tests to compare with.

Japanese had already known the method of Quantification Theory I by Prof. Hayashi in early 1970. But the first trial was done and published by Aoki and Aoki (1974) in the journal of Japanese Institute of Landscape Architecture. Aoki tried and reported some results in the same journal. But there were no successors in this research field until Ichiba (2007). If we try in the different climatic conditions and cultural backgrounds, we can find a common tool to analyze the visitor numbers. The visitor numbers are a part of outdoor activities to be compared. So we proposed this project and this was supported by the research funds of scientific fields in both countries. We might find a common method of the analysis through the world. The meaning of our trials must be considered and examined in the future, but we established the first step in this field. We must wait several more decades to follow our results, but I would like to publish this report for the next or future generations. I will be happy when some researchers will find the value of our works, as the excavation of Kirchner's work.

Yoji AOKI

Reference

- Aoki, K. and Aoki, Y. (1974) A study on the Fluctuation of Park-use, *Journal of Japanese Institute of Landscape Architecture* 38(2), 12-17.
- Ichiba, H. and et. al. (2007) A Study on Prospect of the Number of Users in Season of a Cherry Blossoms in Shinjuku-Gyoen National Garden, *Technological Reports of Landscape Architecture* 4, 70-75.