

## **EFFECTS OF THE USE OF WATER FEATURES IN ANTALYA URBAN PARKS**

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**Abstract.** Urban parks provide positive contributions to urban ecology. These places are accessible for local community and can be used for recreational activities. One of the most important components of urban parks is water features. Water is a design component that is used in various forms. It is used in landscape as an aesthetic element or for useful functions as air cooling, sound buffering, irrigation or recreational activities. 75% of the Earth are covered by water. Although it seems that there is plenty of water, the rate of potable water is just about 0.74%. It is difficult to define the structure of human and city life without water. Therefore, water should be used in suitable form and appropriate amount for creating sustainable environments. In this research, the question ‘why users visit urban parks’ is investigated on Antalya urban parks cases (Ataturk Park, Ataturk Culture Park, Duden Park, Karaalioglu Park) via questionnaire ( $N = 387$ ). As a result, it is determined that most of the users remark that water features should place in urban parks. However, existence of water features has not high priority for users in proportion to other reasons (such as resting, exercising, etc).

*Keywords:* water features, urban parks, sustainability, Antalya.

### **AIMS AND BACKGROUND**

Urban green undoubtedly updates humans quality of life in cities has a positive impact to the microclimate and air texture, improves both architectural and aesthetics view of cities and represents nature in the structured environment<sup>1</sup>.

Traffic density, air pollution and unplanned urbanization change negatively the urban environment, cause an overall aesthetic degradation of landscape and affect people psychology and health<sup>2</sup>. For this reason, urban parks which play an important role for sustainable cities are special places that make a major contribution to urban environment in terms of ecological, physical and aesthetic quality. These places provide several recreational opportunities to people that reduce pressure caused by city life and gather round people for social and psychological demands<sup>3-11</sup>. Also landscapes as forests, lakes, parks, etc. are resources of tourist attractiveness and their contribution to regional tourism development is very important<sup>12</sup>.

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Gold<sup>9</sup> defines urban parks as places where people can access easily and move away from noise and complexity of the city.

Urban parks make contributions to sustainability of city and environment. Sustainability of urban parks is provided depending on suitability criterions such as livability (comfort), accessibility and sensory (psychological)<sup>13,14</sup>.

One of the important components of urban parks is water features. Throughout history, water resources such as sea, rivers, etc. have played an important role in establishment of many settlements and generally one of the main causes for selection of settlements<sup>15</sup>. All livings need water to survive<sup>16</sup>. 75% of the Earth are covered by water. Although it seems that there is plenty of water, the rate of potable water is just about 0.74% (Ref. 17).

Water is a design component that is used in various forms in urban open and green spaces, and takes part in design in various types. Water is also used in landscape as an aesthetic element or for useful functions as air cooling, sound buffering, irrigation or recreational activities or recreational activities as swimming, water skiing, etc.<sup>18-21</sup>

Water is used in urban green spaces as an indispensable part of landscapes. Instead of bounteously use, efficient use of water is essential in order to create sustainable environments. In Earth, where water resources are getting scarce, productive use of water in recreational areas became an important design topic.

This study shows participants purposes of urban parks use in Antalya and priority of water features in these purposes and people preferences on using water features in urban parks.

## EXPERIMENTAL

In this research, Ataturk Park, Ataturk Culture Park, Duden Park and Karaalioglu Park were selected as case areas. The locations of all parks are in available points of city. All parks have several advantages such as recreational activities, accessibility, etc.

A questionnaire form was prepared in order to determine the purposes of urban parks use and the priority of water features between these purposes.

Two methods were used for determining the number of participants and the number of questionnaires per park. Firstly, the numbers of participants were determined according to total population of Antalya city centre. According to information obtained from address-based population registration system, the population of Antalya city centre is 1 041 972 (Ref. 22) people and so the sample was defined as minimum 384 (Ref. 23). After that the number of questionnaires for each area was determined according to acreages of study areas. Table 1 presents the acreages of the study areas and the number of questionnaires per each area.

**Table 1.** Acreages of the study areas and the number of questionnaires per each area

Study areas	Acreages (m <sup>2</sup> )	%	Number of questionnaire (has to be done)	Number of questionnaire (practiced)
Ataturk Culture park	205000	36.35	139.58	140
Ataturk park	187000	33.15	127.29	128
Düden park	130000	23.05	88.51	89
Karaalioglu park	42000	7.45	28.60	30
Total	564000	100.00	384.00	387

The questionnaire was applied to volunteers who live in Antalya.

In the study, 387 complete and accurate data of questionnaire were transferred to computer via the SPSS software. After the process of data input, frequency tables were prepared and data was controlled. And then, inaccurate and incomplete entries were corrected.

## RESULTS AND DISCUSSION

Table 2 presents the demographic characteristics of participants.

**Table 2.** Demographic characters of participants

Demographic factors	Participants	Frequency	Percentage
Gender	male	181	46.8
	female	206	53.2
Age	18–24	60	15.5
	25–60	295	76.2
	61+	32	8.3
Education	primary school (graduated)	45	11.6
	high school (graduated)	105	27.1
	higher school (graduated)	237	61.3

Table 3 presents the park visit characteristics of participants and preferences of water features in urban parks.

After analysing the results, it is revealed that participants have enough information about urban parks.

The question ‘Should water features placed in urban parks?’ was answered by participants as ‘yes’ by the rate of 99.2% (Table 3). Presence of water features in urban parks is welcomed by participants.

Participants was asked to list first five purposes of visiting urban parks by importance. The five purposes which were preferred as first choice are ‘resting/relaxing’ by the rate of 28.4%; ‘sports’ by the rate of 22.2%; ‘watching landscapes’

by the rate of 8.3%; ‘show kids around’ by the rate of 7.8% and ‘spending time’ by the rate of 7.5% (Table 4).

**Table 3.** Participants characteristics and preferences on water features

Variables	Alternatives	Frequency	Percentage
When do you visit urban parks?	weekdays	23	5.9
	weekends	208	53.8
	both	156	40.3
How often do you visit urban parks?	everyday	50	12.9
	once a week	221	57.1
	monthly	111	28.7
	once a year	4	1.0
	first	1	0.3
Should water features placed in urban parks?	yes	384	99.2
	no	3	0.8

**Table 4.** Purposes of urban park visit

Purposes	Importance of purposes					Total	
	1	2	3	4	5		
	<i>N (%)</i>						
	1	2	3	4	5	6	7
1 sports	86	25	20	15	14	160	
	22.20%	6.50%	5.20%	3.90%	3.60%	8.3%	
2 resting/relaxing	110	84	30	30	26	280	
	28.40%	21.70%	7.80%	7.80%	6.70%	14.4%	
3 spending time	29	24	51	19	19	142	
	7.50%	6.20%	13.20%	4.90%	4.90%	7.3%	
4 watching landscapes	32	75	62	39	30	238	
	8.30%	19.40%	16.00%	10.10%	7.80%	12.3%	
5 sunbathing	3	5	7	8	8	31	
	0.80%	1.30%	1.80%	2.10%	2.10%	1.6%	
6 crossing	0	0	2	4	3	9	
	0.00%	0.00%	0.50%	1.00%	0.80%	0.5%	
7 shopping	1	2	2	0	2	7	
	0.30%	0.50%	0.50%	0.00%	0.50%	0.4%	
8 watching water features	1	11	26	20	23	81	
	0.30%	2.80%	6.70%	5.20%	5.90%	4.2%	
9 meeting new people	0	0	3	2	3	8	
	0.00%	0.00%	0.80%	0.50%	0.80%	0.4%	
10 lie on the grass	2	2	9	9	5	27	
	0.50%	0.50%	2.30%	2.30%	1.30%	1.4%	

to be continued

Continuation of Table 4

	1	2	3	4	5	6	7
11 fishing	0	2	2	0	3	7	
	0.00%	0.50%	0.50%	0.00%	0.80%	0.4%	
12 facilities in the park	19	22	22	32	20	115	
	4.90%	5.70%	5.70%	8.30%	5.20%	5.9%	
13 meeting friends	11	19	13	12	13	68	
	2.80%	4.90%	3.40%	3.10%	3.40%	3.5%	
14 stand alone	1	8	14	20	20	63	
	0.30%	2.10%	3.60%	5.20%	5.20%	3.3%	
15 show kids round	30	26	13	12	22	103	
	7.80%	6.70%	3.40%	3.10%	5.70%	5.3%	
16 walking the pets	4	0	4	2	4	14	
	1.00%	0.00%	1.00%	0.50%	1.00%	0.7%	
17 reading magazine, newspaper, book, etc.	2	3	12	11	14	42	
	0.50%	0.80%	3.10%	2.80%	3.60%	2.2%	
18 attending to concert, fair, exhibition, etc.	0	6	5	17	10	38	
	0.00%	1.60%	1.30%	4.40%	2.60%	2%	
19 having a picnic	3	5	8	9	9	34	
	0.80%	1.30%	2.10%	2.30%	2.30%	1.8%	
20 getting fresh air	27	40	36	73	53	229	
	7.00%	10.30%	9.30%	18.90%	13.70%	11.8%	
21 spending time with family	17	18	30	31	40	136	
	4.40%	4.70%	7.80%	8.00%	10.30%	7%	
22 moving away from city life	7	10	16	22	44	99	
	1.80%	2.60%	4.10%	5.70%	11.40%	5.1%	
23 other	2	0	0	0	2	4	
	0.50%	0.00%	0.00%	0.00%	0.50%	0.2%	
Total	387	387	387	387	387	1935	
	100%	100%	100%	100%	100%	100%	

Because of the idea that the priorities of individuals may be different to each other, sum of answers were investigated in order to understand these differences. While evaluating the sum of answers on purposes, it is revealed that the most preferred first five purposes were 'resting/relaxing' by the rate of 14.4%; 'watching landscapes' by the rate of 12.3%; 'getting fresh air' by the rate of 11.8%; 'sports' by the rate of 8.3% and 'spending time' by the rate of 7.3%.

As purposes of visiting urban parks analysed, it was understood that participants visit urban parks for many different purposes. Although most of the participants specify that water features should place in urban parks, it is revealed that the purpose 'watching water features' has not high priority.

## CONCLUSIONS

Urban parks are important areas that are a part of urban open and green space systems contribute to the city and community in terms of aesthetical, functional, ecological, economical view, etc. One of the important components of these areas is water features. People generally take kindly to water features in parks. The study has shown that watching the water features has lower priority than the other purposes but using water features in urban parks is intensely supported by participants.

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*Received 23 May 2014*  
*Revised 22 August 2014*