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Environmental Problems and Visitor Behavior at the Olimpos National Park, Turkey

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Abstract: The present research focuses on the environmental problems, especially solid waste production and disposal and behavior of visitors in national parks. Kindilçeşme Camping and Recreation Area of Olimpos National Park in Turkey was selected as the area of study. Survey research and participant observation were utilized to collect necessary data. Findings indicate that environmental problems, primarily the production of solid waste, as in many parks all over the world, is predominantly rooted in the mode of industrial production activities, the management policies and the manner of uses of consumer materials and goods with disposable packaging. The park users acknowledge the fact that there are serious waste problems. However nobody seems to accept the responsibility. It seems that there is an urgent need for cultivating environmental sensitivity and sense of responsibility. There is also need to make park users, policy makers, planners and managers sensitive towards the issue. Furthermore, environmental policy initiatives and search for solutions in recreation and tourism areas should concentrate on the waste prevention, minimizing the production of waste and maximizing the reuse and recycle activities at every stage of social production, distribution and consumption.

Key words: Solid waste, environmental behavior, National Parks

INTRODUCTION

This research studies environmental problems and behavior of park users. According to the theoretical approach of the study, environmental problems, including solid waste is produced during the production, packaging and distribution and the pre and post consumption activities. That's why the problem can not be confined in or explained only by park users' beliefs, attitudes, values and behaviors. Perceptions, knowledge, consciousness, attitudes and behavioral changes are important factors connected with environmental problems. However, they are not the only ones. Industrial ways of production and business culture should not be ignored, because the source of environmental problems is rooted in the mode of industrial production, packaging and distribution and finally in the use/consumption activities.

There are numerous studies on the waste issue. As Corraliza and Berenguer^[1] indicated the bulk of research has traditionally focused on the study of personal variables like values and beliefs to determine the environmental behavior^[1-4]. These positivist-empiricist behavioral approaches implicitly and explicitly tend to find people responsible for environmental problems by accentuating limited individual behavioral factors and emphasizing on the use of the end products by individual consumers. These studies find significant correlation among (a) beliefs, attitudes, values, awareness, environmental education and (b) environmental condition, waste production and reduction. They position

consumers at the center of the waste problem, thus confine the solution in consumption stage of the process^[5,6]. Solutions put forward by these approaches heavily emphasize the beliefs, attitudes, motivations and behavioral changes via teaching and raising environmental awareness of general public. Current ruling approach to waste problems in Turkey reflects such dominant orientation. The nature of these approaches shows that they are part of the problem rather than the solution. That's why the Environmental Protection Agency of the US (EPA) and European Union primarily aim at prevention and waste reduction at the source, rather than exclusively focusing on the consumption practices of people.

The National Parks in Turkey and elsewhere in the world are invaluable public assets. Unfortunately, legal status of National Parks steadily is rearranged for the interest of tourism industry. At the same time, studies with varying secondary objectives are conducted in these parks. Most of these studies in Turkey and elsewhere focus on visitor behavior, park planning, development and management and propose visitor education and interpretation for behavioral change as solutions to the problems^[7,8].

MATERIALS AND METHODS

Theoretical population of the study is National Parks and park users in Turkey. A survey research was designed for this purpose. Olimpos National Park among

33 existing national parks in Turkey was selected as the most suitable place for the study.

Olimpos National Park is located in the South of Turkey within the city limits of Antalya. The park occupies an area of 34,425 ha. Kindilçeşme camping and recreation park covers an area of 8 ha. There are 200 camping spaces and 90 picnic tables in the park.

Product selection, use and disposal behaviors of visitors is highly important in environmental protection, because their means and ways determine the current and future conditions of the park. Therefore, it is necessary to know the nature of their behaviors in order to produce proper policy and applications. For this reason, a research design combining quantitative and qualitative approaches was prepared to study the user behavior and environmental assessment, respectively. Study population was defined as (a) the campers and visitors of Kindilçeşme Park for the survey research and (b) the park landscape and facilities for observation. Systematic probability sampling was used for the survey research on campers and visitors together defined as park users. One hundred eighty eight visitors and 174 campers were randomly selected for the study. Observations of the park landscape and facilities were conducted by using the whole park ground. The user behavior was measured by questionnaire and daily observations.

RESULTS

Visitor survey included 188 daily users (53% of the daily average) and 174 campers (75% of the camp tents), totaling 362 (35.4% women and 64.6% men). Nearly half of the visitors (44.6%) are college and 40% high school graduates. Park use is at its peak in June, July and August. The majority of daily visitors (69%) are single family users, followed by multi-family groups (26.3%) and friend groups (4.7%). Environmental condition of National Park is greatly influenced by the nature of the uses. There are basically three groups of people using the park; visitors, employees of private concessionaire and park management personnel. The most of the environmental deterioration and waste production at the park is attributed to the daily visitors and campers by the park management. But campers and visitors put the blame on each other and the park management for the environmental conditions.

Environmental problems include human and car noise (especially evening and at night), waste floating at the seashore (time to time), soil hardening and sweeping erosion at the camp ground, tree roots exposed, metal nails nailed on some trees, flies around the garbage, thorn and dirty newspaper pieces at the picnic area, small pieces

of papers used for covering and packaging the consumer products, i.e. chewing gum, candy (everywhere), food leftovers under the trees, inside the picnic fireplace and beside the garbage cans, ashes, cigarette butts (everywhere), problems emerging from the lack of facility maintenance (problems with showers, toilets, water fountains, picnic tables, water supply, tools etc.).

Visitors bring various articles along when they come to the park and also buy consumer goods in the park. Some of these articles are physical sources of environmental deterioration. The extend of material use in the park doesn't show a homogenous distribution. The findings show that fresh and canned food, soap, detergent, newspapers and magazines, materials for picnic fire and plastic utensils are the most used articles by the visitors (Table 1).

After-use behavior: Some articles bought and used in the park can be reused and recycled. However plastic articles are mainly thrown in the garbage cans (60.7%); glass bottles are mostly reused (80.67%); Little over the half (54.92%) of the metal cans is reused. According to general use index, fifty one percent of all articles used are dumped to garbage can and forty two percent is reused. As the findings indicate, the mode of behavior depends on the character of the articles used (Table 2).

Waste disposal behavior was defined as the way users treated the garbage they produced after use in the park. Visitors were asked first to self-evaluate their own waste disposal behavior. As expected, almost everybody reported that they always disposed their waste (94.2%) and frequently (4.2%) in the garbage can. Then, visitors were asked about the other people's waste behavior. Results showed intriguing distribution (Table 3), because, over half of the people made negative evaluation of other people's waste behavior, while almost everybody reported his/her own waste disposal behavior as proper one.

These findings indicate that disassociation of one's own self with the environmental condition emerge as a serious obstacle for proper park management and behavioral change. Furthermore, protectionist environmental behavior is less related with perception, attitude, awareness, knowledge and education than with personal material interests in organized life and existence of a culture conducive to environmental protection.

Visitors hold primarily the park management and generally the other visitors responsible for deterioration and inadequacies in the park. The answers of park management indicate more positive evaluation of visitor behavior than visitors' evaluation of the park management and other visitors. Everyone disassociates himself/herself

Table 1: Distribution of the materials used in the park (%)

Materials	N	1 Always	2 Often	3 Some times	4 Seldom	5 Never
Soap	342	76.30	14.3	5.3	2.0	2.0
Food to be cooked	337	61.10	20.2	11.6	4.5	2.7
Food prepared at home	342	58.20	21.3	12.6	5.3	2.6
Detergent	337	58.20	19.0	13.4	5.3	4.2
Newspaper and magazines	349	61.80	6.3	21.0	7.2	4.0
Materials for picnic fire	350	46.00	11.4	29.1	11.4	2.0
Plastic water caps	336	41.70	22.3	20.2	6.0	9.8
Recyclable glass cans	326	39.00	20.6	18.7	10.1	11.7
Recyclable metal cans	317	24.90	13.6	18.3	20.2	23.0
Cardboard	327	11.30	5.8	38.2	23.5	21.1
Recyclable boxes	309	14.90	8.7	23.3	24.6	28.5
Non-returnable glass cans	319	10.70	7.5	20.7	21.3	39.8
Batteries	362	8.60	3.9	16.3	20.4	38.4
Can food	312	4.50	5.8	26.0	26.0	37.8
Metal beer cans	323	8.00	4.0	26.0	14.2	47.7
Aluminum foil	313	6.70	4.2	17.9	17.9	53.4
Paper bags	321	3.70	4.0	22.4	22.4	47.4
Paper dishes	322	4.00	4.0	21.1	19.6	51.2
Metal food containers	362	5.20	1.9	15.2	18.0	45.9
Baby diapers	362	9.70	3.6	4.4	5.0	59.9
Spray cans	311	6.80	4.5	9.6	17.0	62.1
Aluminum cans	314	2.20	3.2	14.6	19.4	60.5

Table 2: After the use preferences

Materials	N	Reuse	Selling	Burning	Thrashing
Plastic bags	341	39.01	0.29	0.00	60.70
Glass bottles	326	80.67	0.61	0.61	18.11
Plastic bottles	313	46.64	0.32	0.32	52.72
Metal cans	264	54.92	4.17	1.14	39.77
Newspapers	311	53.05	5.47	10.93	30.55
Magazines	254	49.61	7.08	12.10	31.10
Packaging papers	263	35.74	1.90	5.71	56.65
Cardboard	253	33.99	3.56	9.49	52.96
Rags	240	9.17	1.25	6.25	83.33
Batteries	236	14.41	-	-	85.59
Use index (%) (Ci/Cn)*		41.72	2.46	4.67	51.15

* C= Column percent; Cn= Column number

Table 3: Evaluation of waste behavior of visitors by visitors (%)

Evaluation	1	2	3	4
Park is full of waste	23.70	30.10	40.20	6.10
Garbage cans are empty because people are not using them	11.00	21.90	44.10	23.10
They put trash beside the garbage can	14.20	44.90	33.60	7.20
They send waste by children	24.70	46.20	26.50	2.50
They throw them around instead of using a garbage bag	22.50	31.90	37.30	8.30
General evaluation index (%)*	19.22	35.00	36.34	9.44

*1(= every time) refers to the most negative and 4 (= never) is the most positive evaluation

with environmental problems. These findings suggest that the environmental programs should focus on the effort to have people realize that they are part of the problem too.

Studies customarily establish causal relationship between educational level and environmental behavior. The great majority of park users have higher education (high school 40.2% and university graduates 44.6%). This finding contrarily indicates that it is not right to report that park users lack environmental knowledge and consciousness (or sensitivity) because of their education. Talking about perceptual deficiency or inadequacy doesn't look appropriate too. The main factor seems to be the existence of a dominant culture that is insensitive

towards environment, nature, other people and future of the human race. Underlining the inadequacy of assumed causal relationship between attitude, awareness and behavior. Some researchers^[9,10] concluded that individuals should hold themselves responsible for the environmental outcome. That's why brochures on information and interpretation on environmental protection is inadequate; it is necessary to pay attention to the established social and personal norms^[11].

Evaluation of the condition of the park: Park visitors were asked to evaluate the environmental conditions in the park on a five level scale (Table 4). Index of 14 items

Table 4: User evaluations of the park conditions (1: There is no such problem; 2: Very little problem; 3: A general problem; 4: Serious problem; 5: Very serious problem)

Conditions	N	1	2	3	4	5
No waste can at the beach	346.00	8.09	9.25	19.94	23.12	39.60
Visual pollution because of waste	335.00	6.57	12.54	21.19	18.80	40.90
Impoverished environment	348.00	6.61	15.52	20.68	17.82	39.37
Foul smell from garbage	345.00	7.83	11.59	23.19	19.71	37.68
Dirtyof waste cans	341.00	10.26	13.78	22.87	20.54	32.55
Inadequate waste cans	339.00	7.97	14.75	23.00	29.50	24.78
Not emptying waste cans on time	341.00	12.32	17.30	20.23	19.06	31.09
Garbage in picnic area	343.00	6.70	22.74	29.45	20.99	20.12
Remoteness of waste cans	343.00	10.79	28.28	26.24	17.49	17.20
Arrangement of waste cans	334.00	11.98	22.75	32.34	18.26	14.67
Garbage in camping area	345.00	10.43	29.27	30.73	13.62	15.95
Inconvenient waste cans	337.00	20.77	19.0	22.55	22.55	15.13
Closeness of waste cans to tents	330.00	15.76	30.61	24.55	16.35	12.73
Garbage thrown sidewalks	347.00	19.00	34.00	23.10	7.20	16.70
General index (Cyi/Cn)*		11.08	20.10	24.29	18.93	25.60*

Cyi = Column percent; Cn = Column number

indicates that 31.9% of people find no or little problem, while the 44.5% finds serious and 24.3% general problem in the park's environmental condition. Visual pollution of waste, impoverished environment, foul smell and lack of garbage cans at the beach are seen as leading problems by over 80% of people.

Waste collection and disposal practices: Observations and interviews with the campers and visitors indicate that waste collection practices have serious shortcomings. There are eleven 750 L and eight 50 L containers in the park. Containers are old and corroded. Three days a week collection schedule is generally irregular. Containers are overfilled during the weekends, yet there is no weekend collection. People, especially children leave waste by the containers, partly because metal waste containers have lids too heavy to open. These findings indicate that there is an urgent need for an integrated waste management policy. Waste collection schedule should be set according to the nature of daily, weekly and seasonal park use. Decision on color, label, size, material, placement and amount of waste containers should be based on careful study of the park landscape, user orientations and waste production and composition. A well planned, designed and managed park accordingly leads people to a proper mode of behavior.

Such findings also indicate that an integrated park and waste management should include not only immediate users and park management, but also general public, community leaders, institutions, private and public organizations and businesses in the surrounding environment.

Concluding, the study found that there are environmental problems and that visitors, campers, concessionaires and their employees, park personnel and garbage collectors are all part of the problem.

Post-study interviews with the campers and visitors and campground observations on July 2004 after 6 years show that situation is getting worse: The campground has been operated by a private concessionaire during the last two years. The visitors complain about poor services. There is a new grocery store at the entrance and there are garbage, mostly paper, scattered around the store. The visitors who come to the park every year indicate that facility and park maintenance are deteriorated and waste and garbage collection problems are worse than ever. Garbage cans are still old, corroded and overfilled. Piles of garbage and bags are seen around the garbage cans a lot more than before. The environmental pollution and deterioration can be seen right in the entrance of the park: There are garbage piles under and nearby the "keep the park clean" sign. There are too many people and too much noise and movement. The park is overcrowded and overused.

DISCUSSION

The study findings indicate that there is an urgent need of cultivating environmental sensitivity and responsibility among people, primarily people in power and people responsible for park management and guidance daily. Environmental projects, programs, policy and search for solutions should concentrate on the waste prevention, minimizing the production of waste and maximizing the reuse and recycle activities on every stage of social production, distribution and consumption. Integrated waste management should be comprehensive. It is time we cease focusing only on the end-use and end-users. Furthermore, enacting environmental laws and providing regulations are necessary, but destined to remain merely fake pretenses without proper means and tools of actualization. It is crucial to collect detailed information about culture, state of mind, worldview, habits

and behavior of users and about industrial processes, products for landscape planning, environmental management, projects and programs. The early and post-study found that existing consumer products, packaging and bottling provide very limited preference prospects for consumers. Most of them are not recyclable and reusable. Habits formed by the dominant properties of the products fall contrary to environmental protection. That's why industrial practices in production, packaging and distribution should be reviewed and necessary revisions and changes in industrial ways, means and business culture should be planned and practiced. The business world and end users should be encouraged to be sensitive to environment and motivated for production and use of goods friendly to environment. All these require diligent planning and implementation of social, economical and cultural programs and policies geared toward environmental protection, prevention, recycling, waste minimization and scientific disposal. Studies on environment in the developing countries are as important as the ones in the developed countries. No country can be immune from and remain outside the responsibility of the deteriorating environmental conditions. That's why every environmental study in any country is invaluable addition to the scientific knowledge. Further research in developing countries is needed especially on planning, landscape design and policy issues as well as the use patterns and their implications.

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