

The Price is “About” Right:
National Wildlife Refuge visitors’ evaluations of the fee demonstration program

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Abstract

This paper describes National Wildlife Refuge (NWR) visitors’ evaluations of the entrance fees paid relative to the NWR visited, the characteristics of their visit, the socio-demographic characteristics of the visitor, and their beliefs about fees and the fee demonstration program. Data for this investigation were obtained from on-site surveys distributed at eight NWRs. The study sites were selected to represent the variety of fee changes implemented by the USFWS in response to the Congressionally mandated fee demonstration program. As the title of this article suggests, across all refuges, 88% of the respondents evaluated the entrance fees they paid as “about right.” This general pattern of findings was observed across six different characteristics of the visit. Individuals who paid varying amounts of fees, who participated in different activities with varying group sizes and histories of previous use, all generally considered the fees to be “about right.” Similar conclusions emerged when the visitors’ fee evaluations were analyzed relative to socio-demographic characteristics (sex, age, education, income). Evaluations of the fees paid, however, were related to respondents’ beliefs about fees and the fee demonstration program. People who understood the rationale for the fee program and thought the fees were necessary to maintain quality services were more likely to evaluate the fees as “about right.”

Introduction

The U.S. Fish and Wildlife Service is one of the four federal land management agencies (other agencies include Bureau of Land Management, National Park Service, Forest Service) mandated by Congress to implement a recreation fee demonstration program and evaluate its impact on the visiting public. Money collected from entrance fees and other recreation fees in wildlife refuges has traditionally gone to Migratory Bird Land Acquisition (70%) and the refuge collecting the fee (30%). Under the trial fee program, each refuge may keep 80% of the revenue to make infrastructure repairs and to improve resource management and visitor services within the refuge.

Requiring visitors to pay recreation fees for using publicly owned natural resources, however, is often controversial (Bowker, Cordell, & Johnson, 1999; Martin, 1999). Proponents have argued that fees 1) promote equity by charging those who actually use the resource (Crompton & Lamb, 1986), 2) enhance economic efficiency (Sanderson, 1995), and 3) generate revenue for natural resource agencies who typically confront severe budget constraints (LaPage, 1994). Alternatively, some authors have expressed concern over the potential displacement of visitors due to the federal recreation fee program (Schneider & Budruk, 1999), especially for

individuals who cannot afford the fees (More, 1999). Others have questioned the appropriateness of fees in recreation areas such as wilderness that have traditionally been provided by tax dollars (Trainor & Norgaard, 1999; Williams, Vogt, & Vittersø, 1999; Vogt & Williams, 1999).

The controversy regarding the benefits and costs of user fees at public recreation areas recently stimulated theme issues in two journals. Articles published in the *Journal of Park and Recreation Administration* (Volume 17, number 3, 1999) focused on public sector fees and pricing issues, while the theme issue in the *Journal of Leisure Research* (Volume 31, number 3, 1999) concentrated on societal responses to recreation fees (Watson, 1999). These articles, as well as other collections of fee demonstration related research (McCollum, Puttkammer, & Chivers, 1999), have greatly expanded the knowledge base regarding the recreation fee program, particularly as it applies to areas managed by the National Park Service (e.g., Krannich, Eisenhauer, Field, Pratt, & Luloff, 1999; Lundgren, 1996), and the Forest Service (e.g., Absher, McCollum, & Parker, 1999; Winter, Palucki, & Burkhardt, 1999; Williams et al., 1999). Visitors to National Wildlife Refuges, however, may represent a somewhat different segment of society. Hunters, for example, who have traditionally paid for licenses and access rights may be more accepting of recreation fees than other visitor groups who may be less accustomed to paying for recreation services.

The descriptive study reported here evaluated National Wildlife Refuge (NWR) visitors' reactions to changes in the fees. The specific objectives of this paper are to examine visitors' evaluations (i.e., too low, about right, too high) of the entrance fees paid relative to: 1) the NWR visited, 2) the characteristics of their visit (e.g., amount and type of fees paid), 3) the socio-demographic characteristics of the visitor (i.e., sex, age, education, income), and 4) their beliefs about fees and the fee demonstration program.

Study Sites

In response to the demonstration program, the U.S. Fish and Wildlife Service implemented a variety of fee changes at different National Wildlife Refuges. These included new entrance fees, increased entrance fees, refuge-specific annual passes, new hunts, and non-fee adjustments (e.g., extending the length of the hunting season). To represent the various types of fee changes, as well as the NWRs included in the fee demonstration program, eight refuges were selected for inclusion in this study:

- Sacramento NWR, in northern California, initiated an "honor system entrance fee" of \$3 per vehicle. It is anticipated that this entrance fee will affect 21,000 visitors per year.
- Aransas NWR, located on the Gulf coast of Texas, implemented a new entrance fee of \$2 per person and increased their hunting fee from \$20 to \$50. Approximately 10,000 visitors will be influenced by the entrance fee and 1,400 by the hunt fee.
- Dungeness NWR, in western Washington State, increased their entrance fee from \$2 to \$3 per person, expecting to affect 21,000 visitors. This NWR also initiated a \$12 refuge-specific annual pass.
- Chincoteague NWR, on Assateague Island in eastern Virginia, implemented a new \$12 refuge-specific annual pass, affecting about 3,300 visitors.
- St. Catherine's Creek NWR, in southwest Mississippi, implemented a new deer and waterfowl hunting fee costing \$12.50. About 2,000 hunters are affected.

- Balcones Canyonlands NWR is located near Austin in central Texas. To be consistent with state hunting fees, Balcones initiated a new deer hunting fee of \$40.
- Buenos Aires NWR, located near the Mexican border in southern Arizona, established a new \$2 per person entrance fee, affecting an estimated 2,500 visitors.
- Piedmont NWR, in central Georgia, implemented a non-fee adjustment, expanding their quota deer hunt from 2 to 3 days, impacting about 5,600 hunters.

Methodology

Random samples of individuals using the eight NWRs were surveyed during the peak season for that refuge. For example, sites reflecting a change in hunting fees were sampled during the hunting season. A stratified multi-stage cluster sampling design was used. The primary sampling unit was blocks (clusters) of time randomly selected at a rate proportional to past use patterns. Two stratification dimensions were specified: 1) point of egress from the refuge, and 2) day of the week (weekend versus weekday). All visitors exiting the refuge during a time cluster were included in the study. A total of 1763 completed surveys were collected using these procedures (response rate = 96%). The sample sizes associated with specific refuges are shown in Table 1.

Variables Measured

Visitors' evaluations of the fees they paid were measured with a single item that asked: If you or any member of your group paid a fee for this unit, what is your opinion of the amount charged? Responses were coded as "Too high" (1), "About right" (2), or "Too low" (3). A "Does not apply" category was included for those who had not paid any fees. For example, individuals who had already purchased an annual pass (e.g., Golden Eagle) that allowed them to visit all wildlife refuges would not pay an entrance fee. Across all refuges, 18% (n = 320) of the respondents did not pay an entrance fee on the day they were interviewed, and thus were excluded from further analysis.

Fee evaluations were examined relative to four categories of variables: 1) NWR visited, 2) characteristics of the visit (e.g., amount of fees paid, type of fee paid, primary activity at the refuge), 3) characteristics of the visitor (i.e., sex, age, education, income), and 4) beliefs about fees and the fee demonstration program (see Table 4 for belief statements). Response options for these variables are shown on Tables 1 through 4.

Results

Fee Evaluations by Visit and Visitor Characteristics

Across all respondents from all refuges, 88% of the visitors who paid an entrance fee evaluated the amount they paid as "about right," and an additional 6% considered the fees "too low" (Table 1). This pattern of findings was evident for each of the eight National Wildlife Refuges included in this study. Only a tenth or less of the respondents at each refuge evaluated the fees as "too high." Although this analysis produced a significant chi-square ($\chi^2 = 58.02$, $p < .001$), sample sizes tend to inflate this statistic. The correlation coefficient ($r = .06$) suggests no relationship between the respondents' evaluations of the fees paid and the National Wildlife Refuge visited.

The amount charged visitors varied by refuge and the person's recreation activity. For some hunts, for example, individuals were charged \$12, while hunters at other refuges paid \$40

to \$50. In general, the non-hunter fees ranged from \$2 to \$4. Irrespective of the amount charged, 85% to 90% evaluated the fee as “about right” (Table 2). Individuals who paid non-hunting (92% to 97%) or hunting (92%) entrance fees believed the amount charged was “about right” or “too low.” Hunters, wildlife viewers, wildlife photographers, and hikers all expressed similar views. In addition, the pattern did not vary according to party type (i.e., visiting alone, or with family and friends), party size, or number of prior visits. While 4 of the 8 chi-squares shown in Table 2 were statistically significant, the strength of these relationships was relatively weak (average Spearman $r = .035$, range = .01 to .07).

It is sometimes suggested that requiring individuals to pay to visit publicly owned resources adversely affects some segments of society (More, 1999). For example, those who lack sufficient financial resources may no longer be able to participate if fees are implemented or increased. Table 3 examines how individuals with different socio-demographic characteristics evaluated the fee demonstration program. In general, 89% or more of the males and females, young and old, those with little formal education to those with graduate degrees, and those in all income categories, considered the fees to be “about right” or “too low.” None of these distributions varied statistically by fee evaluation ($\chi^2 \leq 16.02$, $p \geq .059$, in all cases).

Fee Evaluations by Beliefs about Fees and the Fee Demonstration Program

Evaluations of the fees were related to the respondents’ beliefs about fees and the fee demonstration program ($\chi^2 \geq 85.41$, $p < .001$, Table 4). More than 90% of the respondents who indicated that the entrance fees they paid were “about right” believed the fees were necessary to maintain the quality of the services. When compared to respondents who evaluated the fees as “about right” or “too low,” individuals who thought the fees were “too high” disagreed that the current fees were acceptable to them (70%) and believed they should not have to pay a fee to visit National Wildlife Refuges (60%). People who checked the “about right” or “too low” response evaluations, understood the reasons behind the program (92% and 97%, respectively) and, in general, approved of the fee program (92% and 94%, respectively). Individuals who felt the entrance fees were “too high” were more likely to believe that the fee program would limit their access to the refuge (56%), and that there was no need for a fee program because the services were fine (51%). The strength of these relationships was substantial (Spearman r ranging from -.25 to .43).

Conclusions and Implications

As the title of this article and the findings presented here suggest, 88% of the respondents to the eight National Wildlife Refuges evaluated the entrance fees they paid as “about right.” If those who rated the fees as “too low” (6%) are included in this overall evaluation, the data suggest that the current entrance fees at National Wildlife Refuges are acceptable to nearly all respondents. This general pattern of findings was observed across six different characteristics of the visit. Individuals who paid \$50 to hunt at the refuge were just as supportive of the fees as those who paid the \$2 entrance fee. Hunters, wildlife viewers, wildlife photographers, hikers, those visiting by themselves or with others, people in small parties and larger groups, and first time and frequent visitors, all generally considered the fees to be “about right.” When the visitors’ fee evaluations were analyzed relative to socio-demographic characteristics, the same conclusion emerges. Males and females, young and old, those with little formal education to those with graduate degrees, and those in a range of income categories evaluated the fees as “about right.”

The consistency of these findings strongly suggests that some of the concerns regarding the negative impact of the fee demonstration program are unfounded. The cautionary note, however, is that the fees may have already displaced some visitor groups who do not believe in fees for the use of public recreation lands. Data reported by Schneider and Budruk (1999) provide some justification for this hypothesis. In their survey of visitors to a non-fee area in a National Forest, one-half of the respondents selected the site because it was free and one-third had changed their visitation in response to the fee program. Of this latter group, one-half had been displaced.

Ancillary analysis of additional items in our survey addressed this displacement issue. Of the 1,268 individuals who had paid an entrance fee on the day they were interviewed, only 125 (10%) indicated that they were likely to change their plans for future visits because of the fees they paid. Somewhat surprisingly, only a quarter of these individuals felt the fees were “too high,” suggesting that for the majority the amount of fee paid is less important than having to pay a fee at all. This pattern of responses was evident across the eight NWRs included in this study. These findings in combination with the results reported by Schneider and Budruk (1999) point to the importance of addressing the different types of displacement (e.g., visiting other non-fee locations, visiting less often) that individuals may use to cope with recreation fees. Answering these types of questions, however, will necessitate longitudinal studies that track specific individuals over time.

The findings presented here do highlight the need for increasing visitor awareness of the fee program. Evaluations of the fees paid were related to the respondents’ beliefs about fees and the demonstration program. When individuals understood the reasons behind the program and believed that fees are necessary to maintain high quality services, nearly all evaluated the fees as “about right” or “too low.” Reactions to such statements suggest that educational efforts may be effective in gaining support for the program (see Kyle, Kerstetter, & Guadagnolo, 1999, for a discussion of this topic). Responses to other belief statements pose a more serious challenge to natural resource managers. Individuals who fundamentally oppose paying entrance fees for public recreation areas are not likely to be persuaded by additional information. Fortunately, the good news is that the overwhelming majority of current visitors feel the price is “about right.”

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Table 1. Entrance fee evaluations at selected National Wildlife Refuges

National Wildlife Refuge	Sample Size		Entrance Fee is: ¹		
	Total	Paid Fee	Too Low	About Right	Too High
Sacramento, CA	290	231	5	92	3
Aransas, TX	196	137	4	87	9
Dungeness, WA	404	334	3	87	10
Chincoteague, VA	203	181	12	86	2
St. Catherine's Creek, MS	98	76	15	80	5
Balcones, TX	84	47	4	89	6
Buenos Aries, AZ	167	73	14	86	0
Piedmont, GA	321	189	5	88	7
Total	1763	1268	6	88	6

1. Cell entries are row percents.

$\chi^2 = 58.02$, $df = 14$, $p < .001$

Spearman correlation = .06

Table 2. Entrance fee evaluations by characteristics of the visit

	Sample Size	Entrance Fee is: ¹			χ^2	p-value	Spearman r
		Too Low	About Right	Too High			
Amount (\$) of fees paid					22.46	.004	.01
\$2	87	13	86	1			
\$3	491	3	90	6			
\$4	235	7	89	4			
\$12 - \$12.50	353	8	85	7			
\$40 - \$50	53	4	87	9			
Type of fee paid					17.96	.006	.03
Non-Hunting							
Daily individual	347	4	88	8			
Daily vehicle	471	7	90	3			
Annual pass	100	11	82	7			
Hunting	321	7	85	8			
Primary activity at refuge ²							
Wildlife viewing	709	7	88	5	7.33	.026	.07
Wildlife photography	283	9	87	4	5.69	.058	.07
Hiking	557	7	87	6	0.74	.690	.02
Party type					1.03	.599	.02
Alone	107	7	85	8			
Family and friends	1059	6	88	6			
Party size (individuals)					4.60	.598	.03
2	328	6	90	4			
3 to 4	257	8	87	5			
5 to 6	81	7	88	5			
7+	62	5	86	9			
Number of prior visits					21.55	.001	.03
1 st visit	802	5	90	5			
2 visits	163	5	85	10			
3 to 4 visits	119	8	82	9			
5+ visits	130	14	82	4			

1. Cell entries are row percents.

2. Sample sizes and percents refer to the percentage of respondents participating in the activity.

Table 3. Entrance fee evaluations by characteristics of the visitor

	Sample Size	Entrance Fee is: ¹			χ^2	p-value	Spearman r
		Too Low	About Right	Too High			
Sex					5.65	.059	.04
Female	493	6	90	4			
Male	723	7	86	7			
Age					16.02	.099	-.04
Less than 25	61	10	79	11			
25 to 34	199	5	89	6			
35 to 44	325	7	87	6			
45 to 54	322	6	87	7			
55 to 64	184	5	92	3			
65 +	105	12	84	4			
Education					9.66	.645	.06
8th grade or less	13	8	85	8			
Some high school	31	6	84	10			
High school or GED	227	7	87	6			
Some college	262	5	87	8			
College graduate	328	6	88	6			
Some graduate school	68	7	90	3			
Masters, Ph.D.	277	9	87	4			
1997 household income					15.75	.107	-.10
Less than \$15,000	48	4	88	8			
\$15,000 to \$24,999	76	3	88	9			
\$25,000 to \$39,999	206	6	85	9			
\$40,000 to \$64,999	367	7	88	5			
\$65,000 to \$99,999	245	7	89	4			
\$100,000 or more	166	11	85	4			

1. Cell entries are row percents.

Table 4. Entrance fee evaluations by beliefs about fees and the fee program

Belief statements ²	Entrance Fee is: ¹			χ^2	Spearman r
	Too Low	About Right	Too High		
Beliefs about Fees					
US Fish and Wildlife Service fees are necessary to maintain the quality of services provided to the public				129.98	.31
Agree	96	92	43		
Not sure	4	6	21		
Disagree	0	2	36		
I should <i>not</i> have to pay a fee to visit wildlife refuges				142.01	-.31
Agree	4	10	60		
Not sure	0	12	15		
Disagree	96	78	25		
The current fees at this refuge are acceptable to me				272.85	.43
Agree	91	93	14		
Not sure	2	4	16		
Disagree	7	3	70		
Beliefs about the Fee Program					
Overall, I approve of the fee program at this refuge				213.92	.39
Agree	94	92	24		
Not sure	4	6	25		
Disagree	2	2	51		
I understand the reasons behind the fee program				146.39	.33
Agree	97	92	41		
Not sure	3	7	27		
Disagree	0	1	32		
The fee program will limit my access to this refuge				87.78	-.25
Agree	5	13	56		
Not sure	4	11	12		
Disagree	91	76	32		
There is no need for a fee program at this refuge; the services are fine				85.41	-.25
Agree	4	12	51		
Not sure	12	26	23		
Disagree	84	62	26		

1. Cell entries are column percents.

2. Responses to the belief statements were originally coded on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree. Responses are collapsed here for ease of interpretation.

All chi-square values are significant at $p < .001$.