

Satisfaction Levels of Birdwatchers: An Observation on the Consumptive—Nonconsumptive Continuum¹

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Abstract Visitors using an auto tour route at a National Wildlife Refuge were found to report a high degree of satisfaction with their visit using a standard satisfaction scale that has been applied to other recreationists. Reported satisfaction levels were similar to other nonconsumptive recreation activities and considerably higher than consumptive activities (hunting or fishing). Degree of skill at bird identification was related to reported satisfaction, with more knowledgeable birders reporting significantly lower satisfaction levels than less knowledgeable birders. Differences may be related to the goal specificity of advanced birders which renders this activity more similar to a consumptive recreation, or to variation in expectations and preferences among different levels of birders.

Keywords Satisfaction, birders, National Wildlife Refuge, wildlife.

In a paper that summarized 13 studies, Vaske et al. (1982) reported respondents' satisfaction ratings for specific outdoor recreational experiences, and found large differences between ratings of consumptive and nonconsumptive recreationists. Consumptive recreationists (hunters and fishermen in the studies cited) consistently recorded lower satisfaction scores using a standardized scale than did nonconsumptive recreationists (hikers, campers, day visitors, canoers, and rafters). Vaske et al. (1982) used traditional definitions (Wager 1969) of consumptive and nonconsumptive recreation, in which "nonconsumptive use provides people with experiences rather than products, while a consumptive activity focuses on products." They suggested that differences in satisfaction resulted from differences in goal specificity and in probabilities of realizing these goals during a typical outing. Since a clear goal of deer or turkey hunting is bagging game, and since this goal is most often unfulfilled, they argue that it is reasonable to expect lower satisfaction ratings among consumptive users than among nonconsumptive users whose goals are less specifically defined and almost always achieved. Hikers, for instance, usually reach their desired destination, and observe the vistas that they had anticipated in the process.

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Having defined the consumptive/nonconsumptive dimensions of outdoor recreation, Vaske et al. (1982) argue that specific recreation activities are a mixture of consumptive and nonconsumptive dimensions, and that activities will fall along a continuum depending on the relative mix of consumptive and nonconsumptive parts. Hunting has a clearly consumptive objective, but Potter et al. (1973) and Hendee (1974) have described other dimensions of hunting satisfaction that can be achieved without bagging game. Likewise, the backpacker has objectives that are primarily nonconsumptive, but each visit has a small consumptive impact on the environment in terms of trail erosion and firewood use. In developing the notion of this continuum, Vaske et al. (1982) speculated on the position of mountain climbing and birdwatching along the continuum. They argue that both have strong consumptive elements, because, for each activity, the goal can be achieved only once by an individual, and the goal specificity is more explicitly defined than for many other nonconsumptive activities. In the case of birdwatching, the keeping of a life list amounts to a form of consumptive use, since a species can be added to the birdwatcher's list only once in a lifetime, and, once added, is no longer available to that recreationist. And what could be more goal-specific than a trip with the purpose of sighting a hudsonian godwit?

As both an avid hunter and birdwatcher, the senior author has noted striking similarities between these two activities. In both endeavors, the recreationist invokes a personal skill and knowledge of wildlife behaviors and habitat affinities to reduce an individual animal to a form of possession. In the one case, the bird ends up on the table; in the other it ends up on a checklist. Anyone who doubts these parallels should spend a day in a duck blind and a day at a raptor banding station.

If birdwatching has important elements that parallel the consumptive dimensions of hunting and fishing, then it could be hypothesized that satisfaction ratings of these recreationists might be closer to hunters than to backpackers.

Birdwatchers, or "birders" as the more committed prefer to be called, have only recently begun to be studied as the wildlife management profession recognizes the emergence and growth of this important new constituency. Studies have focused on demographic characterization and economic expenditures. We have learned from a survey of the general population of the United States that "primary-nonresidential" wildlife users (those who take trips of greater than one mile for the specific purpose of observing wildlife) numbered 28.8 million in 1980 (Shaw and Mangun 1984). Sex, age, and race data for participants are approximately the same as for the general population, and participants are generally better educated and more affluent than the general population (Shaw and Mangun 1984). Studies of avid birders visiting specific birding locations in southeastern Arizona (Richards et al. 1979, Shaw and King 1980) showed more men than women in the sample and strikingly high levels of affluence and education. In these studies, more than 50% of respondents had completed 4 years of college and had annual family incomes in excess of \$20,000 (Shaw and King 1980).

Satisfaction of birders has not been studied to date. Fowler and Bury (1973) referred to satisfaction among visitors to Okefenokee National Wildlife Refuge by stating "four-fifths of the visitors indicated that they were satisfied with the facilities and services as offered," but their findings are not relevant to the scales described by Vaske et al. (1982) and cannot be used to compare birders with other outdoor recreationists.

Various researchers have cluster- or factor-analyzed data on recreationist characteristics and described discrete subsets among individuals defined loosely as "hunters" (Brown et al. 1977, Decker et al. 1980, Hautaloma and Brown 1979, Kellert 1978) or

“birdwatchers” (Fowler and Bury 1973, Applegate et al. 1982). In the studies summarized by Vaske et al. (1982), recreationists were not subdivided further than hunters or fishermen, thus leaving us with no sense as to whether satisfaction levels might vary within a particular class of recreationists.

Given the lack of satisfaction data from birdwatchers, the purpose of this study was to apply the standardized satisfaction scale to a sample of birdwatchers. The research hypothesis, based on the speculation of Vaske et al. (1982), was that mean satisfaction scores of birdwatchers would be lower than those recorded previously for other nonconsumptive recreationists. Further, we set out to examine differences in satisfaction scores among the several levels of birding competence established in our previous research (Applegate et al. 1982).

Study Site

The Brigantine Unit of Forsythe National Wildlife Refuge is located near Atlantic City, New Jersey, about 100 km east of Philadelphia. The refuge is made up of salt marsh, pine-oak forest, and a large freshwater impoundment. The dike that surrounds this impoundment serves as a 13 km self-guided auto tour route for refuge visitors. The density and diversity of birds along this route is exceptional, and the refuge is widely known as an excellent site for birding. Annual visitation is about 200,000 people. Since fishing, crabbing, and picnicking are not allowed on the tour, the site provides an excellent location to study birdwatchers.

Methods

A surveyor greeted visitors at the beginning of the tour loop, gave them a one-page questionnaire to be filled out during their visit, and recorded the time of entry and auto license plate number of each entering vehicle. At the end of the salt marsh portion of the auto tour (10 km from the entrance), a team of surveyors accepted the completed questionnaires and had visitors respond to the standard satisfaction question used in the studies cited by Vaske et al. (1982). The team also recorded the auto license number and time of arrival at this checkpoint, so that the amount of time the visitors spent on the auto tour could be determined. At this point, also, visitors were tested on their knowledge of bird identification and their knowledge of the natural history of wildlife.

We have developed two scales for evaluating ability at bird identification and natural history knowledge which we have used in our studies of Brigantine visitors (Applegate et al. 1982). In the ID scale, visitors are asked to identify nine pictures of birds that have been clipped from Peterson (1947) and Robbins et al. (1966), two popular field guides used by eastern birders. Six of the birds are used in a Guttman scale of ID ability. The scale was developed from a pretest sample of 102 respondents and has a coefficient of reproducibility of 0.971. The natural history quiz consisted of seven questions on the biology of wildlife species common to the eastern U.S. Five of the questions make up our Guttman scale of wildlife knowledge, which was developed from a pretest sample of 66 and had a coefficient of reproducibility of 0.964. For both scales, scores were recorded as the summation of correct answers.

Data were collected from 92 visitors to the refuge on Wednesday, June 20, 1984 ($n = 34$) and Saturday, June 23, 1984 ($n = 58$).

Results

Satisfaction responses recorded for all visitors (Table 1) are comparable to those reported by Vaske et al. (1982) for other forms of nonconsumptive recreational activities. The overall average rating by our respondents was 5.05 compared to the 4.74 average score for nonconsumptive recreationists reported by Vaske et al. (1982). These data therefore establish that day-visitors to a National Wildlife Refuge report satisfaction ratings similar to other nonconsumptive recreationists, which are considerably higher than ratings reported by consumptive wildlife users. Vaske et al. (1982) reported an average rating of 2.85 for 1336 hunters and fishermen who participated in six previous studies.

In our earlier work with visitors to the refuge (Applegate *et al.* 1982) we found through cluster analysis that about half of our respondents were relatively unsophisticated in their wildlife knowledge and skill at bird identification. This group, on average, scored only 1.8 on our ID scale, 2.1 on our knowledge scale, and spent only 45 minutes on the tour. By comparison, the more sophisticated clusters (about 20% of visitors) scored an average 3.7 and 3.8 on our ID and Knowledge scales, respectively, and spent more than three hours on the tour. When we divided our respondents in the present study into comparable clusters, we found that those who scored three or more on our ID scale reported significantly lower satisfaction ratings than those who scored two or less. The average satisfaction rating by high scorers was 4.77 ($n = 43$) and the average rating by low scorers was 5.38 ($n = 49$) ($t = 2.97$, $p < 0.01$).

As we found in previous work with refuge visitors, ID score is highly related to time spent on the tour. Overall, the high ID score group spent an average of two hours and 22 minutes on the tour compared to only one hour and 28 minutes for the low ID score group ($t = 4.05$, $p < 0.001$). Combining our findings on satisfaction and time spent on the tour, it appears that the more sophisticated birders are "doing it more but enjoying it less."

Discussion

Our study provides the first data for comparison of birdwatchers with other outdoor recreationists in regard to satisfaction ratings of a recreational experience. Contrary to the speculation of Vaske et al. (1982), the overall average rating for our respondents was quite consistent with that reported for other nonconsumptive activities. In fact, our

Table 1
Satisfaction Ratings for Visitors to Forsythe National Wildlife Refuge

"Overall, how would you rate your visit?"	LOW ID SCORE	HI ID SCORE	ALL
Poor	0	0	0
Fair, it just didn't work out	1	1	2
Good, but I wish a number of things could have been different	3	4	7
Very good, but could have been better	5	9	14
Excellent, only minor problems	14	19	33
Perfect	26	10	36
Mean Rating	5.38	4.77	5.05

overall mean of 5.05 exceeded the mean of 4.74 that Vaske et al. (1982) reported for all nonconsumptive activities.

The most interesting finding of this study is that more competent birders report lower ratings of satisfaction than less competent birders. One explanation of this finding relates to the goal specificity aspect of Vaske's consumptive/nonconsumptive continuum. Experience with birders would lead us to believe that more sophisticated individuals would have more specific goals during a day at the refuge. They would like to see certain bird species that should be at the refuge during that time and would probably keep a list of birds observed during the visit, with an informed perception of how many species would constitute a good day. With this level of goal specificity, the visitor has a higher probability of being disappointed than does his less-sophisticated counterpart who sets out to see birds and does.

A second, related explanation may involve variations in expectations and preferences. In studies of perceptions of crowding in recreation activities, Shelby et al. (1983) found that preferences had a strong influence on a person's feeling of being crowded. A similar circumstance may exist for a recreationist's sense of satisfaction. Preference of sophisticated birders would probably lean toward species richness and the presence of less common species, whereas the less sophisticated birdwatcher, lacking ability to identify species, might prefer large numbers of conspicuous individuals. Again, the less sophisticated individual is more likely to meet his expectations during a visit to Brigantine. It would be interesting to follow our studies of birders with similar work wherein data on expectations and preferences of respondents, and success in meeting expectations during a visit, are collected in addition to the kinds of information that we gathered.

At a more general level, this study raises some concern over the utility of satisfaction data in resource management planning. It would seem intuitive that social benefits are increased by programs that increase the cumulative satisfaction of a recreation clientele. Here, however, we have provided evidence that the most committed segment of a user group is less satisfied than their more casual counterparts with on-site experiences. It is unreasonable to conclude that individuals have spent many preparatory hours in achieving competence, and commit many more hours to on-site experiences, in order to receive fewer benefits. In another context, it would make no sense for a refuge manager, interested in maximizing social benefits from the use of a resource, to initiate programs that would decrease the average competence of visitors. The obvious conclusion is that measures of satisfaction may be poor indicators of social benefits.

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