

A Field Critique of the 3-Year Pilot Test for the CUSTOMER Recreation Visitor Survey¹

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Abstract: From 1990 to 1992, the USDA Forest Service implemented a 3-year pilot test of CUSTOMER, a standardized nationwide recreation visitor survey. Intended as a partnership between the agency's Research and National Forest System branches, CUSTOMER has been a limited success to date. By the end of 1993, nearly 20,000 recreation visitors had been interviewed in more than 35 different sites, including 15,800 National Forest visitors from Alaska to Puerto Rico. Resulting data have not been fully analyzed to date nor been made available for recreation researchers, managers, or the general public. The results of a telephone interview of past CUSTOMER users is presented regarding their evaluation of the recreation visitor survey. Inherent conflicts within the multiple goals of CUSTOMER are examined, as well as insufficient funding and sponsorship, methodological compromises, and availability of alternative means for data collection that may be curbing a wide-spread demand for the survey in its present form. Six general recommendations are offered to help improve identified problems in CUSTOMER.

The need to better understand the recreation use and users of the National Forest System has been evident since the passage of the Forest and Rangeland Renewable Resources Planning Act (RPA) in 1974 and the National Forest Management Act in 1976. Since the passage of these acts, the practical and theoretical goals of studying recreation have evolved from the collection of relatively simple quantitative measures to more complex qualitative measures of user behavior (Manning 1986). As suggested in the 1989 USDA Forest Service RPA Assessment, and by others including the Office of Technology Assessment (1992), further effort is needed to collect comprehensive recreation visitor information that will enable recreation providers to improve the quality of recreation planning and management nationwide (Cordell and others 1990). The importance of studying Federal "customers" was most recently reinforced in an Executive Order signed by President Clinton on September 11, 1993, which charged all executive departments and agencies (including the Forest Service) with "ensuring that the Federal Government provided the highest quality service possible to the American people" (Clinton 1993). Specifically, the Order called for agencies to "survey customers to determine the kind and quality of services they want and their level of satisfaction with existing services."

One of the more ambitious efforts in recent years to improve understanding of recreation visitors nationwide, the Public Area Recreation Visitor Study (PARVS), was begun in 1985 by the USDA Forest Service's Southeastern Forest Experimental Station (SEFES). That Station has proposed to supersede PARVS by the more comprehensive Customer Use Survey Techniques for Operation, Management, Evaluation, and Research (CUSTOMER) recreation survey. In response, the Office of Management and Budget (OMB) issued approval in 1990 for a 3-year pilot test (1990-92) of CUSTOMER to evaluate the methodology and potential effectiveness of CUSTOMER. During the past 3 years, CUSTOMER has been one of the few large scale studies of the Federal land recreation visitors and the only one to be conducted by a Federal agency.

This paper offers a field-level review and discussion of the 3-year pilot test of the CUSTOMER recreation visitor survey. After the achievements of CUSTOMER during the 3-year pilot test are summarized, the results of a telephone interview of personnel from sites that have utilized CUSTOMER are presented. Finally, three general issues associated with the CUSTOMER survey are discussed, as well as six recommendations for improving CUSTOMER (or other subsequent recreation survey projects).

CUSTOMER Achievements and Current Status

During the 3-year pilot test (and 1993) on selected Federal lands nationwide, CUSTOMER was successful in generating a wide range of recreation visitor data using a combination of on-site interviews and mailback questionnaires. As of December 31, 1993, CUSTOMER had been implemented at more than 35 sites (defined as a unique combination of a specific administrative unit and recreation season) in 17 States, including 28 sites administered by the Forest Service, 7 by the USDI Bureau of Land Management, and one each by the USDI National Park Service and Tennessee Valley Authority. (CUSTOMER has also been used as a component of several other economic value studies around the Nation.) More than 19,850 recreation visitors were interviewed on site, with 43 percent also completing and returning one or more additional mailback surveys. Some 80 percent of the total interviews (15,800) occurred within National Forests in all major geographic regions although the regions were sampled disproportionate to the amount of recreational use they received (USDA Forest Service 1993). Within the National Forests sampled, visitors engaged in all major categories of recreation activities (as defined by the Forest Service's RIM [Recreation

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Information Management] and RRIS classifications) were interviewed, although again, disproportionate to use.

CUSTOMER on-site interviews yielded information on selected demographic characteristics of visitors, including respondent sex, age, race/ethnicity, education level, employment, physical and learning impairment, household type, household income, group type, and group size. Selected trip characteristics of respondents included residence or market area; trip purpose; information sources for trip planning; primary destination; repeat versus first-time visitation; distance and hours travelled; length of stay; nights on site; visits during last 12 months; year of first visit; reasons for choosing a site; and identification of substitute sites. Finally, the on-site interview collected visitor attitudes about selected site-specific recreation planning and management issues.

Following the on-site interview, visitors were given mailback questionnaires asking them to rate the importance of generalized setting attributes for both ideal settings and those at the site. Visitors also rated their satisfaction with those same attributes. In accordance with the work of Martilla and Hames (1977), importance and satisfaction ratings were subsequently combined to suggest appropriate general management responses. An optional second mailback questionnaire captured visitor trip and equipment expenses that could be utilized in the IMPLAN economic input-output model to indicate the economic impact of recreation use on surrounding counties.

A Field Evaluation of CUSTOMER

Despite the cost and amount of effort involved in the development and application of CUSTOMER during the 3-year pilot test, to date the survey's implementation, effectiveness, or use by the sites that have implemented CUSTOMER have not been systematically evaluated. Accordingly, for this paper one or more representatives from each site that had contracted for CUSTOMER during its 3-year pilot test were interviewed over the telephone by the authors between December 1993, and January 1994. The purpose of the interview was to evaluate CUSTOMER based upon the experiences of the sites. Two types of site representatives were defined and contacted: (1) "planners," or those involved in initiating and structuring the customer survey for the site, and (2) "users," or those who now apply the results of CUSTOMER data in the ongoing planning and management of the site. A total of 47 site representatives were identified and interviewed. (Four representatives had retired subsequent to their involvement with CUSTOMER and were not contacted.) The responses of each site representative were weighted equally in the analysis of the interview results although in several cases an individual was involved as both a planner and a user at the site, or was involved in multiple implementations of CUSTOMER.

The responses of planners and users were compared in order to detect differences in their expectations for

CUSTOMER and its subsequent performance. And responses for the years 1990, 1991, and 1992 seasons were compared in order to recognize improvement or maturation of the CUSTOMER project. And the Forest Service was compared with other agencies in order to suggest whether CUSTOMER was found more or less suitable by Forest Service site representatives as a group.

Expected Use of CUSTOMER Data

Site representatives were asked to indicate whether they had expected to use CUSTOMER data for several advertised uses of CUSTOMER. The most expected and most frequently used application of CUSTOMER data reported was for uses associated with new investments and capital improvement projects (89 percent), followed by site planning (83 percent), and forest planning and plan revision (77 percent). The application with the least expected and actual use was training (17 percent). Other possible expected uses included marketing and publicity, environmental impact statements and assessments, congressional data requests, budgeting and staffing, and conflict resolution. Up to 35 percent of the site representatives reported that they had not yet had an opportunity or need to use the data for one or more of the expected purposes. Many expected that they would eventually use the data.

Usefulness of CUSTOMER Data

Site representatives were asked to rate 10 specific areas of CUSTOMER data in terms of usefulness for meeting their planning and management needs. Using a 5-point scale ranging from "very good" (5) to "very poor" (1), the highest ratings were given to visitor demographic profiles (4.2), trip profiles (4.1), and visitor setting preferences (4.1). The least useful data were associated with spending and economic impact (2.9). Other possible areas of data included activities engaged in, visitor setting satisfactions, values and markets, special issues, and willingness-to-pay. The mean ratings for several areas of information differed significantly ($p \leq .05$) by agency and by year.

CUSTOMER Implementation

Using the same scale, site representatives were asked to rate how well nine different stages of CUSTOMER were implemented at their sites. Volunteer training and interviewing (4.2), pre-survey consultation (3.9), and on-site set-up and sampling (4.0) were most highly rated. The lowest rated implementation stage was post-survey consultation (2.4). Other implementation stages included final data report, presentation of results, mid-survey consultation, and contract administration. The mean ratings for several implementation stages were significantly different ($p \leq .05$) by year, the highest ratings given to CUSTOMER implementation in 1991.

Future Use and Recommendation

Site representatives were asked if they would consider conducting another CUSTOMER survey at their site within the next 3 to 5 years. The most common responses were “No—no need to update data” (20 percent), “Maybe—survey funding is uncertain” (17 percent), and “No—would seek other sources for data” (15 percent). Thirteen percent indicated “No—not satisfied with CUSTOMER” and only 6 percent indicated “yes—satisfied with CUSTOMER.” The frequency for the “No—not satisfied with CUSTOMER” response differed significantly ($p \leq .05$) by agency, with Forest Service site representatives less likely to be unsatisfied.

Most site representatives responded “Yes—without conditions or reservations” (47 percent) when asked if they would recommend CUSTOMER to other National Forests, parks, wildlife refuges, or Bureau of Land Management districts. Forty percent indicated “Yes—with conditions or reservations,” but 13 percent responded “No—would not recommend CUSTOMER.”

Comments

Site representatives were asked whether they had additional comments regarding CUSTOMER or suggestions for improving or changing CUSTOMER. The most common points expressed in the comments of the representatives included:

- A need and desire for social survey data on recreation visitors in general.
- A need for data that can address site-level planning and management problems and issues, as opposed to data structured for use in a national research database or national modeling efforts. This site-level data is without a doubt the reason that most sites became involved in CUSTOMER.
- A wide range of physical and social conditions and available management resources among sites, as well as analytical capability and sophistication among site managers. The implementation of CUSTOMER needs to be flexible to fit unique situations and available resources.
- Some of the most desired information, especially economic impact and market analyses, is also the least well developed in CUSTOMER in terms of its scope, comprehension, and applicability.
- One of the most often expressed complaints was that CUSTOMER did not also capture total use estimates as well as profiles of typical visitors.

Issues Facing CUSTOMER

As reflected in the responses from the telephone interview of site representatives, field-level support of CUSTOMER as it was implemented was less than unanimous. Not surprisingly, usage of CUSTOMER has declined since its

peak year in 1991. In 1993, only six sites participated and, to date, only half that many expect to implement CUSTOMER in 1994. The apparent concern about CUSTOMER expressed in the interviews suggests that if CUSTOMER is to mature and thrive in the future as a corporate recreation visitor research tool at least three very much interrelated issues must be addressed: (1) the purpose of CUSTOMER; (2) the administration of CUSTOMER; and (3) the methodologies of CUSTOMER. These issues are easy to identify but will require some hard decisions and a full recognition of the implications and trade-offs of the choices made.

Purpose of CUSTOMER

CUSTOMER was implemented to serve multiple purposes, especially to aid National policy planning and National Forest-level management. Like its predecessor PARVS, which was one of the foundation databases used in the Forest Service’s legislatively mandated 1989 RPA Assessment (Cordell and others 1990) and 1993 RPA Assessment update (English and others 1993), CUSTOMER was intended foremost to provide baseline and continuing data for RPA Assessment analysis of the outdoor recreation and wilderness situation in the United States. This purpose has dictated much of the structure of the CUSTOMER sampling methodology and survey questionnaires.

Another purpose of CUSTOMER was to provide visitor information to individual sites participating in the survey. Thus, in addition to information used in the RPA Assessment analysis, CUSTOMER also contained questions to help provide insight into managing recreation resources, including visitor reasons for choosing a site; visitor satisfaction with various site and management attributes; and up to a dozen unique questions developed in consultation with each site.

A third purpose was to develop a nationwide database that would be capable of providing a composite picture of recreation visitors at public recreation areas across the country. The data base would also be utilized to compare visitors of one site with those of other sites in order to help establish a frame of reference for interpreting results.

CUSTOMER most likely can serve only one master well. The multiple purpose intent of CUSTOMER has contributed to conflicts in its implementation and to some limitations in its usefulness for the RPA Assessment analysis of recreation and for the management of individual sites. For example, by virtue of its trying to assess comparable national trends, CUSTOMER questionnaires have purposefully retained some vagueness in question structure in order to be applicable at a variety of sites and for a variety of activities. This purposeful vagueness, however, may in turn increase confusion among visitors when responding to survey questions and among site managers interpreting ambiguous data results. Both tend to limit the specificity and usefulness of information needed for management at any given site. In addition, the number of questions whose primary usefulness is for RPA Assessment analysis modeling (and national database purposes) consumed most of the time it took to complete an interview. As a result,

few site-specific questions could be added to the questionnaire without the entire survey often requiring one-half hour or more to administer.

CUSTOMER sampling plans were structured around specific groups of recreation activities, preferably those that could be easily incorporated into RPA Assessment analysis modeling equations for set activity groups, rather than focal areas of activities. Site managers were encouraged (if not effectively restricted) to label and treat their recreation visitors as standard activity groups rather than as unique visitor groups with unique desires and needs. The sampling plans in turn relied upon a site manager's ability to estimate the number and distribution of recreation visitors by the standard activity groups. In many cases the site managers were unable to supply accurate estimates, which led to less effective sampling plans. More importantly, since it was not entirely random, sampling by activity group precluded the almost universally desired capability of estimating total recreation use.

Such limits on the usefulness of CUSTOMER data to sites has contributed to an annoyance among some site managers. Some consider that they have in a sense helped underwrite the cost of the RPA Assessment analysis out of their own forest budgets at the expense of gaining more reliable site-specific data.

CUSTOMER's multiple purpose nature has also affected the usefulness of the data for national database purposes as well. Because of the use of individual sampling plans and the self-selecting nature of participating sites, the ability to derive and validate weighting factors to proportionately weight site data for national aggregation has also been adversely affected. Finally, regardless of the reason, no national database has been made available to date nor have the summaries of individual results been compiled and published.

Administration of CUSTOMER

Developed within the Research branch of the USDA Forest Service Service, CUSTOMER was initially considered to be a research project. Thus, the development costs of the 3-year pilot test were primarily funded by the Research branch. Nevertheless, sites participating in CUSTOMER transferred funds to SEFES to help cover the cost of travel for consultation, developing sampling plans, providing and monitoring volunteer interviewers, data analysis, and report preparation. An average cost per site for implementing CUSTOMER was about \$15,000, although some sites contributed as much as \$100,000 for extended or multiple seasons of interviewing. During the middle of the pilot test, a recommendation was made by the National Forest System branch to set an unofficial cap of \$20,000 for an average site. Without additional base funding, this amount would not be adequate to support a full-time staff at SEFES dedicated to the operation and development of CUSTOMER.

In 1992, the Research branch considered CUSTOMER to be sufficiently developed and therefore no longer considered it a proper research function (although it retains its original

ties to SEFES). The National Forest System branch, however, has yet to assume the direction and funding of CUSTOMER. As a consequence, CUSTOMER now receives little or no base funding sufficient to maintain a dedicated staff. CUSTOMER is effectively in administrative limbo.

Although the cost per site for implementing CUSTOMER is too low to support a full-time staff, it is nevertheless a considerable amount to many National Forests. The decision to implement CUSTOMER often comes at the expense of hiring seasonal employees needed to help manage the sites. The perceived high cost of CUSTOMER in comparison to other priorities for National Forest recreation budgets, in combination with the acknowledged need for visitor data, has and will continue to force a number of site managers to pursue other avenues for collecting recreation use and information (especially the use of nearby universities). The reliance upon independently operated research will not further the development of a standardized national database of recreation visitor information.

The cost of research will also likely promote the continued sampling of activity groups, which for one reason or another have become a management problem or interest. Alternatively, site managers may choose to maximize data collection by sampling only the most cost-effective activity groups, such as developed overnight and day use, sightseeing, and visitor information centers. There is evidence that this has occurred. To date, little if any extensive sampling has been done in designated wilderness areas because of the very high per capita cost of interviewing wilderness visitors. Without some form of reduced cost or subsidization, the information available about backcountry visitors in particular will continue to be sub-standard by comparison. As a result, the breadth of recreation visitor knowledge will likely remain rather narrow in scope and focused on more heavily used and developed sites.

Resolving the administration of CUSTOMER may also affect its overall sampling strategy and the flexibility of the survey instrument. If CUSTOMER were to be administered by the National Forest System branch—essentially as just one tool in a manager's "toolbox"—concern for ensuring "representatives" of sites when compiling results from a national database would be minimal. Rationale for retaining a rigid questionnaire format and length would also be reduced. Again, such a course will not further the development of a standardized national database of recreation visitor information.

CUSTOMER Methodology

Other problematic issues that affect the sampling procedures used for CUSTOMER, include problems of poor specificity of sampling unit; nonrandomness on the selection on sites and visitors; bias and representativeness of results; aggregation and weighting of data; and confidence levels for results.

As a source of data for national planning, some argue that existing CUSTOMER data has a degree of bias in terms of geography, activity, and towards repeat visitation. The

sites that have participated in the 3-year pilot test essentially represent a self-selected sample of all such sites where people recreate. To date, general regions such as the Rocky Mountains (especially the Rocky Mountain Region) and the Pacific Coast (especially the Pacific Southwest Region) have been proportionately under-sampled in terms of the visitor use they receive annually, while areas such as Alaska and the South have been over-sampled. This problem compounded by the fact that the sites sampled within the regions are not necessarily a good cross-section of the range of site types in the region.

Another problem has resulted from the fact that each site involved in the 3-year pilot test was responsible for assigning a definition to an activity group. Although this should rightly be their choice, activity groups may be defined differently: an urban-oriented site (such as the Las Vegas District of the Toiyabe National Forest in Nevada) may define 'over-night camping' differently than a more remote site (for example, the Steens Mountains in the Bureau of Land Management's Burns District in Oregon). Comparisons and aggregations of such data seem logical but may result in the proverbial mixing of apples and oranges.

Still another problem stems from the fact that CUSTOMER data in fact represents only the visitors who used the site. CUSTOMER was not intended to be a household survey capable of assessing the recreation behavior of the population in general without regard to whether to, or how often, they used a site. In this respect, CUSTOMER data is most likely biased toward visitors who frequent sites most often and may be biased toward those who haven't been displaced because of dissatisfaction with the setting attributes or management. As a result, data on infrequent users and dissatisfied visitors is under-represented. This is one possible explanation for the consistently high visitor satisfaction ratings for site attributes observed throughout CUSTOMER results. Mailback responses were not examined to disclose the possibility of non-response bias among visitors.

Although systematic weighting adjustments suggested by other National Forest use information may compensate for non-random, disproportionate, or biased sampling, the end product cannot be better than the other information. In truth, the reliability of National Forest recreation use information at all levels is highly variable. Thus, even if problems with randomness and adequate sample size could be resolved, final estimates may be compromised by unreliable weighting factors.

A true pre-test of the CUSTOMER survey was lacking. Instead, the prior PARVS instrument, from which the CUSTOMER questionnaire was adapted, was assumed to have already been tested in service. However, CUSTOMER included several new "modules" and a new pre-test might have been able to detect how well visitors actually understood some new key concepts and phrases. For example, in questions concerning satisfaction, visitors were asked to rate "barrier-free access." Although the phrase is generally understood among recreation professionals as referring to a

degree of accessibility to persons with a physical or other disability (a qualitative measure), visitors could also have interpreted the phrase as referring to whether enough trails or roads were open to the public (a qualitative measure).

Also needing additional examination are statistical confidence levels that may be placed on CUSTOMER survey results. To date, there has been little if any discussion as to what constitutes acceptable error bounds for survey mean and frequency estimates, considering the implications of their use for both Federal and National Forest level applications. Without such an examination, sites especially are resigned to "getting what they get" from sample sizes that their budgets permit. In addition, site managers have not been provided with confidence intervals for means and frequencies estimated in the standard CUSTOMER reports in order that they might at least make their own judgments with a known level of risk.

Summary and Recommendations

The range and volume of data needed to plan and manage our National Forests and other Federal lands—both individually and collectively—is extensive and varied. Like other Federal agencies, the Forest Service has been making slow but steady progress towards recognizing those needs and to improving their efforts to gain the necessary information. Clearly, though, much remains to be done in terms of conceptualizing and implementing a comprehensive visitor information monitoring strategy.

The PARVS and CUSTOMER recreation visitor surveys have been valuable tests for the collection of some necessary information. Nevertheless, like many other Federal, state and private recreation visitor surveys, CUSTOMER has its flaws and may have a limited future as it has been structured and implemented. Given the potential for conflicts involved in gathering site-specific management data and nationwide planning data, the expectation that one type of survey can meet multiple needs may not be feasible. CUSTOMER has been developed and implemented without the benefit and guidance of a truly comprehensive national information strategy. From the results obtained from telephone interview of site representatives, the conflicts and the lack of direction could undermine widespread user confidence in and application of CUSTOMER.

In the longer term, other data collection strategies—existing, proposed, or future strategies can equally if not better fulfill the separate purposes of CUSTOMER. For example, the recently developed, shorter, and more flexible (CUSTOMER) Report Card may be a superior method for collecting data and specific management issues. Household surveys, such as the proposed National Survey on Recreation and the Environment, are in theory superior for collecting nationwide recreation visitor use and general preference information.

In the near term, we recommend several general actions that would increase the attractiveness of CUSTOMER to

either the Research or National Forest System branches of the Forest Service, (and other potential users) by correcting some of the surveys major weakness, including the following:

- Establish a new national task force or working group composed of national planners, field recreation managers, and researchers to review the Forest Service's future recreation planning and management data needs. Further, the group should develop a reasoned and comprehensive strategy and set of quality standards to guide site-specific and national recreation information collection and analysis. (This recommendation is consistent with conclusions of the Office of Technology Assessment (1992) regarding the data condition and needs for the RPA Assessment analysis of recreation and wilderness.)
- Resolve which branch of the Forest Service—Research or the National Forest System—will administer and fund the operation and development of CUSTOMER.
- Resolve whether the purpose of CUSTOMER data collection is for RPA Assessment analysis, the national recreation visitor database, or National Forest-level management.
- Conduct an in-depth review of CUSTOMER's theoretical and technical strengths and weaknesses. Similarly, other existing and proposed surveys should be reviewed so that CUSTOMER may be compared to systems and methodologies (Chavez and others 1993). Establish protocols for linking or modifying CUSTOMER so that it may also serve in a secondary support role to other equally sophisticated survey efforts previously implemented.
- Improve the standard CUSTOMER sampling methodology, data analysis, and reporting format to include more useful marketing data and economic expenditure and regional impact analyses. Confidence intervals on mean and frequency estimates should be included to help managers assess the "risk" of relying upon an

estimate. Better pre-survey consultation should be conducted, and post-survey follow-up procedures to evaluate experience should be improved. More flexibility in sampling approach that permits estimation of activity and total site use should be available, if not preferred. Finally, the summary results of pilot test sites should be compiled, published and updated annually.

- Develop a short course or module in the national correspondence course curriculum (such as exists at Colorado State University) that could teach site managers to become more knowledgeable in survey research methodology and data analysis, including the use of available computer software to compile and analyze CUSTOMER survey data.

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