

Is Alaska Really Different? A Review of CUSTOMER Recreation Visitor Survey Data¹

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Abstract: Many believe that Alaska is unique and that its location, resources, and population influence the use patterns and attitudes of its National Forest recreation visitors so that they seem notably different from visitors to other National Forests outside Alaska. Data from a recreation visitor survey called CUSTOMER were analyzed for the years 1991 to 1993 to identify signs of differences between recreation visitors to the Chugach National Forest and other selected National Forests outside Alaska. Although some significant differences do appear, a definitive conclusion may not be drawn from the existing CUSTOMER data.

Alaska is popularly regarded as different from other States of the union, a view that encompasses beliefs about its geography, natural resources, cultural heritage, population, and lifestyle. Many assert that such characteristics influence or create different use patterns and attitudes among its recreation visitors (State of Alaska 1993, International Tourism and Resort Advisors 1993). In lieu of comprehensive and substantive data to the contrary, this basic assertion may have influenced the management plans and the activities of State and Federal recreation managers in Alaska, including those of the Chugach National Forest (CNF). But is outdoor recreation in CNF really different, and more importantly for its recreation managers, are recreation visitors there really different from those of National Forests outside Alaska? Addressing the latter issue is important to better meet the needs and desires of recreation visitors to CNF.

Clearly, CNF is distinguishable from other forests in the National Forest. Two hundred miles across and the size of Massachusetts and Rhode Island combined, the 5.6 million-acre CNF is second in size only to Alaska's other National Forest, the Tongass. CNF is bounded to the north by the rock and ice of the Chugach Mountains and to the south by the 3,500 mile coastline of fjords and islands of the Prince William Sound. Despite its size, the vast majority of CNF is accessible only by small aircraft, boat, or foot.

The natural and cultural resources of CNF seem unmatched elsewhere. Only 500 miles below the Arctic Circle, the climate supports dozens of active glaciers. Probably more wolves, bears, and bald eagles can be found in CNF than in any National Forest outside Alaska. Prince William Sound is itself a haven for a rich and diverse marine life, including several species of whale, sea lions, otters, as well

as its renowned salmon and shellfish. The 700,000 acre Copper River Delta in the eastern half of CNF is the largest contiguous wetland ecosystem on the west coast of the Nation and the yearly destination for millions of migratory birds. CNF is also the aboriginal and contemporary home of populations of Eskimos and Indians, whose ancestors have inhabited the coastal areas for more than 10,000 years.

Recreation visitors to CNF can choose from a full spectrum of recreation opportunities. Developed facilities range from the modern Begich, Boggs Visitor Center (the most visited tourism site in Alaska) to developed overnight campgrounds equipped with flush toilets. Those seeking more primitive recreation experiences can choose from backpacking in de facto wilderness to cross-country skiing and sea kayaking. Still others may choose to see glaciers and wildlife from automobiles, aircraft, ships, or on foot.

Thus, CNF does indeed have many special and unique characteristics that may influence its recreational visitors. However, whether the physical and social settings of CNF are different from those of other National Forests outside Alaska is a moot point. The more relevant issue is whether the settings influence the attitudes and behavior of recreational visitors so that they are different from those of visitors to other National Forests outside Alaska. Unfortunately, research has not been done that definitively establishes a cause and effect relationship. Perhaps the best that can be done at this time is to sort through existing data for clues to the following question: do recreation visitors to CNF exhibit characteristics, preferences, reasons for participating, and levels of satisfaction significantly different from those of National Forest visitors elsewhere? This paper addresses these questions through an examination of one recent recreation visitor survey applied to CNF and other sites outside Alaska.

CUSTOMER Recreation Visitor Survey

To examine the question of "difference," both relevant and commensurate information about the recreation visitors to CNF and other sites outside Alaska is needed. Although location-specific visitor and tourism surveys have been administered for a number of years across the Nation, only one survey using a consistent questionnaire and sampling procedure—the Customer Use Survey Techniques for Operation, Management, Evaluation and Research (CUSTOMER) recreation visitor survey—has been applied to National Forests and other locations both within and outside Alaska.

Developed and implemented by the USDA Forest Service's Southeastern Forest Experiment Station, CUSTOMER was designed to provide a range of general

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and site-specific recreation visitor data useful in the management of individual National Forests as well as in the preparation of the Forest Service's national Renewable Forest and Rangeland Resources Planning Act (RPA) for the analysis of recreation and wilderness (English and others 1993; Cordell and others 1990). By compiling the results of individual National Forests and other locations, CUSTOMER may also be used to develop a basic national database on visitor demographics, trip profiles, reasons for choosing a site, activity participation, and visitor importance and satisfaction with general site attributes.

Between 1990 and 1993, CUSTOMER was implemented on a U.S. Office of Management and Budget-approved pilot test basis in over 35 "sites" (defined for purposes of this paper as a unique combination of an administrative unit and a recreation season) across the Nation. More than 19,850 recreation visitors nationwide were interviewed on-site and also asked to complete one or more additional mailback surveys. Three CNF sites were sampled in 1991 and 1992. With more than 2,800 recreation visitors interviewed during summer and winter seasons, CNF accounted for about 14 percent of the national total.

Because of its scope, consistency, and the number of interviews completed, CUSTOMER should be an ideal data source for comparing recreation visitors to Alaskan and sites outside Alaska, including sites administered by the Forest Service, USDI Bureau of Land Management, and USDI National Park Service. Nevertheless, several problems arise from the CUSTOMER sampling method, and thus efforts to make robust comparisons among individual sites are complicated.

First, the sample of national sites was actually self-selecting because participation in CUSTOMER was either administratively mandated or voluntary. As a consequence, the sites did not represent a true random sample of National Forest visitors nationwide. Second, each site was responsible for defining the activity groups of interest. Thus, a description of "developed camping" may actually differ considerably according to a remote or poorly funded site, in comparison to an urbanized and well-funded site's description of "developed camping."

Another problem was the weighting of the collected data. Most sites had a poor idea of the actual amount of annual visitor use, as well as the relative proportions of the various component activity groups. Therefore, the basis to properly weight data is low for developing summary means and frequencies for any single site and for all sites combined. Because of the relatively high cost of on-site survey sampling, small sample sizes--especially from mailback surveys--were inadequate for reliable statistical analysis for many of the activity groups.

Last, but certainly not least, compilations of CUSTOMER data are not readily accessible. An independent working database, limited to summary means and frequencies contained in individual CUSTOMER site reports, was therefore created for this paper. The summary nature of the database severely limits extensive data analysis.

Comparison Methodology

Despite these difficulties, CUSTOMER data are used as the basis for comparing CNF recreation visitors with those of other sites outside Alaska in the attempt to detect visitor differences. Specific activity groups, representing the visitors' stated primary recreation activity during a visit to a site, are chosen as the focus of comparison. Some preliminary manipulation of the data was necessary, however. The original self-reported activity groupings in the individual CUSTOMER survey reports are re-classified in the working database into groups that are assumed to be the most closely analogous in actuality. This reclassification results in a total of 27 possible activity groups. Of these, it is found that 19 cannot be used for comparison for one of the reasons: (1) a particular activity group has no representation in both CNF and non-Alaskan sites; (2) the total sample size for an activity group is determined to be too small for purposes of analysis; or (3) the activity group could only be classified as miscellaneous. This reduced the available overall sample sizes by 35 percent for CNF and by 47 percent for the non-Alaskan sites. The eight activity groups suitable for comparison are:

- Angling
- Developed overnight use
- Dispersed day use
- Motorized boating
- Nonmotorized boating
- Roaded sightseeing
- Trail use
- Visitor information service (VIS) activities

The working database of summary CUSTOMER data contains more than 200 separate variable means and frequencies which describe the use patterns and attitudes of recreation visitors. Attempting to compare CNF and non-Alaskan recreation visitors across all of these variables is beyond the scope of this paper. Thus, five of the most relevant subsets of the larger dataset are chosen as the basis of comparison. The five data subsets include:

- Selected demographic characteristics (age and income).
- Selected visitation characteristics (primary vs. secondary destination; repeat vs. first-time visitation; in-state vs. out-of-state residence).
- Reasons for choosing site (scenic beauty; good facilities; prior knowledge; convenient location; personal reasons; crowding at other areas; seeing new attractions; traveling with a group; trying a new site; and other).
- Importance of general site attributes (reasonable fees; location of site; barrier-free accessibility; quality of scenery; cleanliness of facilities; clear directional signs; good roads and parking; helpfulness of personnel; information on site history; nearby shopping and supplies; presence of agency personnel; safety and security; site maps and information; and trip planning information).
- Satisfaction with general site attributes (same as importance attributes).

Measurement of difference within the 5 data subsets for the 8 activity groups is dependent upon the nature of the data being compared. At least three measures of difference are possible given the data limitations:

- Range of data subset variable means and frequencies.
- Rank correlation of data subset variable means and frequencies.
- Overall mean of data subset variable means and frequencies.

The first and simplest measure of difference involves examining the data subset variables for CNF recreation visitors to find means and frequencies that are outside the range of means and frequencies in the other sites outside Alaska. Thus, if data subset variable means and frequencies for CNF recreation visitors are either higher or lower than the highest or lowest mean or frequency recorded among non-Alaskan sites, it is considered an indication of a possibly important difference between the Alaskan and non-Alaskan sites. This measure of difference is applied throughout the comparisons because it does not rely upon any statistical assumptions and can be used with the categorical data in the first two data subsets (demographic and visitation characteristics).

A second measure of difference involves the rank ordering of data subset variables rated by CNF recreation visitors to determine if the order differs from the order of visitors to non-Alaskan sites. This second measure of difference is usable on lists of items that can be rank-ordered, including the third, fourth and fifth data subsets (reasons for choosing site, site attribute importance, and satisfaction with site attributes). Within each data subset, variables are rank-ordered for both CNF and non-Alaskan sites and compared to see if there is a positive correlation in the rankings. Because the data under analysis were nonparametric in nature, the Friedman two-way analysis of variance is chosen to test whether the rank-orders agreed (Wilkinson 1990).

A third measure of difference considers whether CNF visitors rated general site attributes higher or lower than visitors to the non-Alaskan sites. This measure is applied to the fourth and fifth data subsets (importance of, and satisfaction with, general site attributes). A t-test is applied to the variable means of data subsets for CNF and non-Alaskan sites in order to determine if visitors rated the variables higher or lower.

Assumptions different than those used in the selection of the activity groups, data subsets, and measures of difference used in this analysis could produce different results and conclusions in the comparisons.

Results

Selected Demographic Characteristics

Age and income are two characteristics that are key variables in modeling recreation consumption (English and others 1993). We found main differences between

visitors to CNF, and their non-Alaskan site counterparts as a whole (*table 1*).

The most common age category among all eight activity groups in CNF is 25 to 44 years of age, followed generally by 45 to 64 years of age and 12 to 24 years of age. Seven of the eight activity groups in the non-Alaskan sites also show that the 25 to 44 years of age category is the most common. Differences between visitors in CNF and sites outside Alaska, as reflected in the range of frequencies measured (*table 1*), are evident in four of the eight activity groups (developed overnight, dispersed day use, and nonmotorized boating activity groups show no differences).

The most common annual household income category for five of the eight activity groups in CNF is \$25,000 to \$49,999, followed by \$50,000 to \$74,999 in the remaining three activity groups. This is the same in the non-Alaskan sites except that the identity of the specific activity groups are different.

Regardless of whether they are recreating in CNF or non-Alaskan sites, motorized boaters and nonmotorized boaters display larger proportions of higher income categories. Differences between visitors in CNF and sites outside Alaska, as indicated by the range of frequencies measure, are evident in six of the eight activity groups (angling and developed overnight activity groups show no differences).

Selected Visitation Characteristics

Few consistent differences are indicated among visitors to CNF and non-Alaskan sites in terms of visitor residence and prior visitation. In CNF, in-state visitors are more common in seven of the eight previously listed activity groups (the exception is dispersed day use groups). Among non-Alaskan sites, in-state visitors are also more common in seven of the eight activity groups (VIS activity group is the exception). Both of the activity groups in exception exhibit higher percentages of in-state visitors than observed in non-Alaskan sites. Visitor differences are indicated in only two of the eight activity groups (dispersed day use and VIS activities) by using the range of frequencies measure (*table 1*).

CNF is the primary destination for the majority of recreation visitors in half of the eight activity groups. In contrast, non-Alaskan sites are the primary destination of the majority of visitors in all eight activity groups. By using the range of frequencies measure, differences between visitors in CNF and sites outside Alaska are indicated in six of the eight activity groups (developed overnight and VIS activities groups show no difference).

Repeat visitation is more common than first-time visitation for six of the eight activity groups in CNF, the exceptions being the dispersed day use and trail activity groups. Repeat visitation is also more common in seven of eight activity groups in the non-Alaskan sites. The range of frequencies measure shows differences in only two of the eight activity groups, dispersed day use and motorized boating.

Table 1—A Summary of indications of differences between Chugach National Forest and sites outside Alaska.

Data subset Measures of difference	Activity groups							
	Angling	Developed overnight	Dispersed day	Motorized boating	Nonmotorized boating	Roaded sightseeing	Trail	VIS ⁴ activities
1. Demographic characteristics:								
A. Age								
Range of frequencies measure ¹	—	—	—	Yes	—	Yes	Yes	Yes
B. Income								
Range of frequencies measure	—	—	Yes	Yes	Yes	Yes	Yes	Yes
2. Visitation characteristics:								
A. Residence								
Range of frequencies measure		—	Yes	—	—	—	—	Yes
B. Destination								
Range of frequencies measure	Yes	—	Yes	Yes	Yes	Yes	Yes	—
C. Visitation								
Range of frequencies measure	—	—	Yes	Yes	—	—	—	—
3. Reasons for choosing site:								
Range of frequencies measure	Yes	—	Yes	Yes	Yes	—	—	—
Rank correlation of frequencies measure ²		—	—	—	Yes(p=.05)	—	—	—
Mean of frequencies measure ³	—	—	—	—	—	—	—	—
4. Importance of site attributes:								
Range of means measure	—	Yes	—	Yes	Yes	—	—	Yes
Rank correlation of means measure	Yes(p<.05)	Yes(p<.05)	Yes(p<.05)	Yes(p<.05)	—	Yes(p<.05)	Yes(p<.05)	Yes(p<.05)
Mean of means measure	Yes(p<.01)	—	—	Yes(p>.05)	Yes(p<.01)	Yes(p>.01)	—	—
5. Satisfaction with site attributes:								
Range of means measure	—	Yes	Yes	Yes	Yes	—	—	Yes
Rank correlation of means measure	—	Yes(p<.05)	—	Yes(p=.05)	—	—	Yes(p<.05)	Yes
Mean of means measure	—	Yes(p<.01)	—	Yes(p<.01)	Yes(p<.01)	Yes(p<.01)	—	Yes(p<.01)

¹Chugach NF mean higher or lower than observed range in non-Alaskan sites.

²Rank correlation of means and frequencies using Friedman's two-way analysis of variance (Kendall's coefficient of concordance).

³Overall mean of means and frequencies using two sample-paired T-test.

⁴Visitor information service activities.

Reasons For Choosing Site

Scenic beauty is the most often stated reason for choosing CNF as a site in four of the eight activity groups, followed by convenient location and previous experience. This is generally consistent with the rank ordering of reasons in most activity groups in non-Alaskan sites. Among activity groups, motorized boaters in CNF on average choose 6 of the 10 reasons more often (*table 1*).

Nonmotorized boaters choose three of the reasons more often than visitors to the non-Alaskan sites. In both cases, try new area, other areas too crowded, and/or scenic beauty are reasons mentioned more often by CNF recreation visitors

than non-Alaskan site visitors. VIS activity group visitors choose two of the reasons (try new area and other areas too crowded) less often.

Indications of differences between CNF and non-Alaskan sites are seen in four of the eight activity groups (angling, dispersed day use, motorized boating, and nonmotorized boating) using the range of frequencies measure. Using the rank correlation measure, only the nonmotorized boating group shows a statistically significant difference ($p \leq .05$) between rank orders of reasons by visitors in CNF and non-Alaskan sites. In none of the eight activity groups do the

overall mean frequencies for all 10 reasons show a statistically significant difference ($p \leq .05$).

Importance of General Site Attributes

Quality of scenery is ranked as the most important attribute among visitors in all eight of the activity groups in CNF except developed overnight users, who rank cleanliness of facilities highest. Other attributes that are also consistently ranked as important by CNF visitors are cleanliness of facilities, reasonableness of fees, safety and security, and trip planning information. Cleanliness of facilities is ranked most important by visitors in seven of the eight non-Alaskan site activity groups.

Motorized boaters in CNF rate 3 of the 14 general site attributes higher than their counterparts in non-Alaskan sites, but also rate five attributes lower. Nonmotorized boaters in CNF rate 9 of the 14 attributes lower than did the visitors in non-Alaskan sites.

Indications of differences between CNF and non-Alaskan sites are seen in four of the eight activity groups (developed overnight, motorized boating, nonmotorized boating, and VIS activities) by using the range of means measure (*table 1*). By using the rank correlation measure, all but the nonmotorized boating group shows a statistically significant difference ($p \leq .05$) between rank orders of attribute importance by visitors in CNF and non-Alaskan sites. Four of the eight activity groups (angling, motorized boating, nonmotorized boating, and roaded sightseeing) show indications of statistically significant difference ($p \leq .05$) considering the overall mean of the 14 individual attribute means.

Satisfaction with General Site Attributes

In all activity groups except trail use (which rates it a close second), CNF visitors are most satisfied with the quality of scenery attribute. Likewise, quality of scenery is rated as the most satisfactory attribute by visitors in all eight activity groups in non-Alaskan sites. Another attribute that consistently rates high among both CNF and non-Alaskan activity groups is reasonable fees.

Indications of differences between CNF and non-Alaskan sites are seen in five of the eight activity groups (angling, roaded sightseeing, and trail use activity groups show no difference) considering the range of means measure (*table 1*). Three of the eight activity groups (developed overnight, motorized boating, and trail use) indicate a statistically significant difference ($p \leq .05$). Five of the eight activity groups indicate a statistically significant difference ($p \leq .05$) considering the overall mean of the 14 individual attribute means (angling, dispersed day use, and trail uses show no differences).

Discussion and Conclusions

This examination of existing summary CUSTOMER data to determine indications of differences between recreation visitors in CNF and sites outside Alaska is only exploratory

at best. It does not represent the level of comparative analysis that is possible given access to the full CUSTOMER data set. It does represent, however, the nature of problems any CUSTOMER site will have in attempting to establish a larger frame of reference by which to view the responses of its visitors.

The results of this effort to find indications of summary differences between CNF and non-Alaskan site recreation visitors are less than conclusive. The three measures of difference often simply result in inconsistent conclusions. If the three measures of difference for the eight activity groups are directly compared, consistent agreement occurs less than half of the time. The rank correlations and range of means/frequencies measures yield evidence of a difference an equal number of times, and both indicate differences more often than measuring magnitude of means. Clearly, any questions regarding difference should be properly framed, and a method should be chosen that is most appropriate to the type of data and issue.

CNF recreation visitors as a whole appear to be most different from their non-Alaskan counterparts in terms of the lower importance they attach to general site attributes. Conversely, as a group they are the least different overall from non-Alaskan site visitors in terms of the reasons why they choose a site: both highly value scenery.

Summarizing the results of the measures of difference by activity group, the activity group in CNF that appears to be the most different from sites outside Alaska is motorized boating and the activity group with the least differences is developed overnight. However, in neither group is there complete agreement among the five data subsets.

In terms of selected demographic and visitation characteristics, the dispersed day use and motorized boating activity groups show the most differences between CNF and non-Alaskan sites. When considering reasons for choosing a site, the nonmotorized boating activity group shows the most difference. The motorized boating activity group consistently indicates a difference in importance of site attributes; while both the motorized boating and developed overnight activity groups consistently show a difference in satisfaction with site attributes, with only the angling activity group consistently indicating no difference.

Perhaps equally useful information can be derived from noting important similarities between CNF and non-Alaskan visitors: the near universal importance and appreciation of scenery; the dominance of 25 to 44 year visitors; the high probability of repeat visitation; and greater importance shown for barrier-free accessibility compared to presence of personnel in the field.

CUSTOMER data—not unlike that of other comparable recreation visitor surveys—has genuine limitations for any robust comparisons among different activity groups and sites because of its statistically compromised sampling procedures. As a result, CNF, as well as sites outside of Alaska, must be content with low levels of reliability if available summary CUSTOMER data is to be used to compare the characteristics

and attitudes of their recreation visitors. Unfortunately, given the current era of smaller resource management budgets, there should be little expectation that another national survey, one which will use improved methodology and a geographic base, will be forthcoming anytime in the near future.

The existence of even perfect data nationwide will not ensure that participating sites such as CNF will be able to take advantage of the information. Such data first must be made accessible to individual sites. And secondly, the sites must have either trained staff or adequate funding to contract for investigation of the data. Both issues are roadblocks to any current effort to make even a summary level of comparison.

Is the creation of a national recreation visitor database and the making of detailed comparisons among sites of real value? Might such comparisons simply have more theoretical than practical benefit? Might it not be sufficient to simply know the recreation visitors at a site and manage accordingly, irrespective of whether the visitors are different from those at another site? Yes, and no. Many management issues are unique and are more properly examined and solved within their immediate context, making data comparisons with other sites a superfluous activity. Other issues may be more universal in nature and solution. A national database can help improve a manager's ability to identify and react to the true cause of a problem. In most instances, unless it is patently incorrect or misleading, some data is probably better than no data when

it comes to helping to understand recreation visitors. Surely relying solely upon the assumptions and preconceptions of some recreation managers can be as perilous as facing an issue without an information base.

Given the status of past and future research efforts it is debatable whether CNF managers can know for certain whether their recreation visitors are indeed different from non-Alaskan counterparts, and whether those differences or similarities are a significant piece of the management puzzle. Like other National Forests outside of Alaska today, CNF can only hold its breath and hope it is not.

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