COLORADO STATE PARKS MARKETING ASSESSMENT

VISITOR SPENDING ANALYSIS, 2008-2009

REPORT

TABLE OF CONTENTS

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VISITOR SPENDING ANALYSIS

INTRODUCTION

Corona Research is pleased to present this report of direct spending impacts of Colorado State Parks to the State of Colorado Department of Natural Resources. The following report includes a description of the project background, methodology, and summary of findings.

BACKGROUND AND OBJECTIVES

Colorado State Parks retained Corona Research to undertake a complete study of marketing issues related to Colorado's state park system, as an assessment of the needs, preferences, and priorities of its constituents. Specifically, Corona Research was obtained to conduct a comprehensive and systematic research project that identifies Colorado State Parks' position in the outdoor recreation marketplace, and to provide information for the future direction of Colorado State Parks by identifying the facilities, services, and programs valued by citizens of Colorado and visitors to Colorado State Parks. This research, undertaken in the 2008/2009 time period, includes public surveys, surveys of park visitors, focus groups with visitors and non-visitors to state parks, and a direct spending analysis.

THIS REPORT

This report contains finding describing the economic impacts of state parks, based on direct spending. The goal of this phase of the research was to calculate the direct spending in local economies (within 50 miles) related to visits to each Colorado State Park.

Total visitor expenditures for each park were calculated by calculating per-vehicle visitor expenditures from raw data that was collected via a large Visitor Survey. These per-visitor figures were then multiplied by the total numbers of visitors visiting each park in one year, defined as the June 2008 to May 2009 time period.

The full results of the Visitor Survey are presented in a separate report, and that survey gathered data beyond the expenditure data used in this report.

The methodology of this study had three major components:

- the gathering of expenditure data at each park via a visitor survey

- examination and verification of data; and

- the calculation of total visitor expenditure of each Colorado State Park.

Each component will be discussed in turn.

VISITOR SURVEY METHODOLOGY

As a separate component of this study, the Visitor Survey was designed to serve a number of research purposes. The data gathered in the survey was used to develop demographic data about visitors, understand their reasons for visiting, gather satisfaction data, understand the important criteria in deciding to visit a state park, and to gather expenditure data for this spending analysis.

Survey Design. Colorado State Parks and Corona Research worked together to design a Visitor Survey instrument that addressed the above research goals. The survey was designed to be completed in approximately 5 to 7 minutes.

Survey Sampling. Prior to survey implementation, the Corona project team met with park rangers from each of the participating state parks to develop an optimal sampling plan for each state park. The sampling was designed to maximize the accuracy of the sample by proscribing data collection proportional to visitation counts by month, weekday/weekend, time of day, and even park entrance.

Every park received a custom plan that matched its own visitation patterns. The ultimate goal of this intricate survey sampling plan was to gather the most representative sample of visitors possible for each state park.

Survey Execution. Colorado State Park rangers and volunteers handed out all surveys to park visitors on an intercept basis, and were trained by Corona Research Staff on the proper methods to properly execute random Visitor Surveys for the project. Training DVD's were created for park staff and the Corona Research Project Team gave survey implementation trainings at State Parks Regional Staff meetings prior to survey execution. Execution of the survey took place from June, 2008 through May of 2009.

A goal was set to collect 200 Visitor Surveys at each of the 42 participating state parks over a year long sampling period. Overall, a total of 9,443 total Visitor Surveys were collected for the study, with an average of 225 surveys were collected for each park. While not all parks obtained the goal of 200 surveys, particularly some smaller satellite parks, all parks gathered enough surveys for meaningful analysis, and some significantly exceeded the target. A list of total surveys collected at each park is provided on the following page.

Survey weighting factors. Most surveys do not precisely reflect the entire population when merely summed and totaled. Statistical survey weightings must be developed to correct for these inaccuracies, in which populations that are underrepresented in the data receive more weighting in the analysis, and those that are overrepresented receive less weighting. The goal of the weighting

process is to develop figures that represent the target population and not merely the population that responded to the survey.

A large-scale, multiple site survey requires consideration of two types of weighting factors. First are weighting factors that correct for inaccuracies in data collection within a park. In other words, are some types of visitors more or less likely to complete a survey? Second are weighting factors across parks. In other words, did some parks gather surveys out of proportion to their systemwide share of visitors?

For internal weightings, no comprehensive census of visitors is available, so it is not possible to identify whether some types of visitors are overrepresented or underrepresented. (In fact, this survey represents the best available data on that topic.) Recognizing this fact was a key reason behind the complex and detailed sampling plans, which ensured that visitors were surveyed proportionally by season, weekday/weekend status, time of day, and entrance used. Within parks, no weightings were used.

External weightings were quite important. Since each park completed a roughly equal number of surveys that allowed for park-specific analysis, parks with lower visitation counts were overrepresented in the raw data, and parks with higher visitation counts were underrepresented. External weights were created for each park that adjusted their proportional representation to match their proportion of visitation.

For example, visitation to Lake Pueblo State Park made up almost 15 percent of all state park visitations during the survey execution period (2008 – 2009), but the proportion of surveys collected during the survey made up only 4.5 percent of the survey sample. Weighting factors were therefore created by Corona that statistically weighted up Lake Pueblo's statistical presence in the survey sample. Weighting factors for each park helped adjust all "Total" survey findings and ensure that the overall findings from the survey sample are statistically representative of the overall population.

For this reason, the survey findings represent a much more complex, but also more accurate, analysis than would a mere tabulation of the raw data. All survey findings presented in this report have been statistically weighted using the methods above.

Number of Surveys Collected Per Park

Park Name	Total Surveys Collected
Arkansas Headwaters	216
Barr Lake	210
Bonny Lake	182
Boyd Lake	210
Castlewood Canyon	264
Chatfield	194
Cherry Creek	208
Cheyenne Mountain	217
Crawford	198
Eldorado Canyon	233
Eleven Mile	234
Golden Gate	334
Harvey Gap	207
Highline Lake	229
Jackson Lake	228
James M Robb-Colorado River	233
John Martin	138
Lake Pueblo	429
Lathrop	237
Lone Mesa	105
Lory	246
Mancos	172
Mueller	269
Navajo	302
North Sterling	210
Paonia	112
Pearl Lake	171
Ridgway	268
Rifle Falls	288
Rifle Gap	281
Roxborough	328
San Luis	127
Spinney Mountain	222
St. Vrain	265
Stagecoach	216
State Forest	301
Steamboat Lake	205
Sweitzer Lake	74
Sylvan Lake	203
Trinidad lake	226
Vega	227
Yampa River	224
Total	**9443**

As mentioned earlier, data on visitor expenditures related to the state park visitation was gathered by using the Visitor Surveys. In Question Number 14 of the survey instrument (see Appendix A), respondents were asked to estimate how much money they and all of the people in their vehicle spent that was related to their trip to the park and within 50 miles of the park. Questions were asked specifically about lodging outside the park, gas and vehicle expenses outside the park, food and restaurants outside the park, supplies and groceries outside the park, all other types of expenditure outside the park, and all expenditures inside the park, (including camping, reservations, concessions, and all other expenses) but not including the entrance fee.

Expenditures Question on Visitor Survey

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For the people in your vehicle, how much money (in whole dollars) would you estimate that all of you spent that was related to this trip? *Count only money spent for this trip and only money that was spent within 50 miles of the park.*

$ _____ Lodging outside the park

$ _____ Gas and vehicle expenses outside the park

$ _____ Food at restaurants outside the park

$ _____ Supplies and groceries outside the park

$ _____ All other types of expenditures outside the park

$ _____ All expenditures inside the park, (including camping, reservations, concessions, and all other expenses) but not including the entrance fee.

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The data are based on visitor recollections and judgments, so reported figures are somewhat subjective. While this can lead to some level of error (either overreporting or underreporting), it was deemed that any individual variations would not produce a significant error since to some extent these subjective errors may cancel each other out.

However, one potentially significant source of error was identified in the data review. Based on inspection of individual data entries, it appears that some respondents did not understand the instruction to include spending only if it occurred within 50 miles of the park. This was apparent only on the subjective reasoning of the research team, where individual examples were identified of respondents who had driven long distances and who reported large lodging and fuel expenditures within 50 miles of the park, when those expenditures logically appear to have been figures for the entire trip. The impact of these large reported expenditures significantly increased the estimates of average spending per park, because they were generally outliers in the data, with very large reported dollar amounts.

To estimate expenditures more accurately, the research team examined every reported category-specific expenditure of $500 or more (e.g., $500+ on fuel, $500+ on lodging, etc.) on every individual survey response. Where the research team judged that the response may reflect expenditures outside the 50-mile radius, the entire data record for that response was excluded from the analysis, including spending in other categories that might be less than $500. While this was admittedly a subjective process, every exclusion led to a more conservative overall estimate of direct spending, so there is no

chance that this process increased direct spending estimates. The only possible direction of change was to decrease the estimates.

The table on the following page provides a list of number of surveys at each park after the data was adjusted in this manner. Note that the number of exclusions has no implications on the quality of the survey execution with any park, because some parks had more out-of-area visitors than others and therefore had a higher likelihood of data exclusions.

Number of Surveys of Each Park after Data Exclusions

Park Name	Number of Surveys after Data Cleaning-Up
Arkansas Headwaters	202
Barr Lake	195
Bonny Lake	166
Boyd Lake	198
Castlewood Canyon	259
Chatfield	188
Cherry Creek	172
Cheyenne Mountain	205
Crawford	180
Eldorado Canyon	225
Eleven Mile	215
Golden Gate	315
Harvey Gap	193
Highline Lake	221
Jackson Lake	216
James M Robb-Colorado River	222
John Martin	134
Lake Pueblo	408
Lathrop	213
Lone Mesa	84
Lory	244
Mancos	151
Mueller	257
Navajo	281
North Sterling	194
Paonia	106
Pearl Lake	160
Ridgway	245
Rifle Falls	266
Rifle Gap	254
Roxborough	327
San Luis	117
Spinney Mountain	212
St. Vrain	236
Stagecoach	199
State Forest	273
Steamboat Lake	189
Sweitzer Lake	72
Sylvan Lake	182
Trinidad lake	203
Vega	205
Yampa River	171
TOTAL	8,755

Based on the average per vehicle expenditure within 50 miles, the total visitor expenditures at each park were calculated by multiplying the total average per vehicle expenditure of each park by the total number of vehicles visiting each park. The number of vehicles was calculated by dividing the total number of visitors as reported in Colorado State Parks' official figures by the average number of persons per vehicle, as calculated during the Visitor Survey).

The general formula for calculating total visitor expenditure of each park is therefore:

$$TotalExp_{PARK} = \frac{TotalVisit_{PARK}}{AvgPersonperVeh_{PARK}} * \sum_{i=1}^{6} AvgperVehExp_{PARK,i}$$

Where

$TotalExp_{PARK}$: total visitor expenditure of a particular park;

$TotalVisit_{PARK}$: total number of visitors in one year of a particular park;

$AvgPersonperVeh_{PARK}$: average number of persons per vehicle visiting the park of a particular park;

$AvgperVehExp_{PARK,i}$: average per vehicle expenditure within 50 miles of the particular park for expenditure category i (lodging outside the park, gas and vehicle expenses outside the park, food and restaurants outside the park, supplies and groceries outside the park, all other types of expenditure outside the park, and all expenditures inside the park).

Two sets of calculations were prepared. First, direct spending was calculated for all visitors. While this is a good indicator of economic activity, it is sometimes criticized by those who contend that spending by local residents would have occurred in the local area anyway, and therefore that spending is merely a redirection of dollars. As a second calculation, in order to eliminate this potential criticism and more conservatively differentiate the economic impact generated by non-local visitors (those who live 50 miles away or more from the park), a second set of calculations was completed that included only the spending by visitors arriving from more than 50 miles away. Since that second analysis includes spending within 50 miles by people traveling from beyond 50 miles, it represents a highly defensible and conservative assumption that these dollars are being brought into the community as a result of the trip.

The second calculation likely represents a conservative estimate of direct spending, though it should be noted that trips could include other destinations besides state parks.

While the above formula is applied to calculate the total expenditure spent by all visitors, the formula for calculating the total expenditure generated by non-local visitors is:

$$TotalExp_{PARK,NON-LOCALS} = \frac{TotalVisit_{PARK,NON-LOCALS}}{AvgPersonperVeh_{PARK,NON-LOCALS}} * \sum_{i=1}^{6} AvgperVehExp_{PARK,NON-LOCALS,i}$$

Where

$TotalExp_{PARK,NON-LOCALS}$: total expenditure of non-local visitors of a particular park;

$TotalVisit_{PARK,NON-LOCALS}$: total number of non-local visitors in one year of a particular park =

$$TotalVisit_{PARK} * \left[\frac{Re\,sp_{PARK,NON-LOCALS}}{Re\,sp_{PARK}} * \frac{AvgPersonperVeh_{PARK,NON-LOCALS}}{AvgPersonperVeh_{PARK}} \right]$$

;

$AvgPersonperVeh_{PARK,NON-LOCALS}$: average number of persons per vehicle of non-local visitors of a particular park;

$Re\,sp_{PARK}$: total number of respondents of a particular park

$Re\,sp_{PARK,NON-LOCALS}$: total number of non-local respondents of a particular park

$AvgperVehExp_{PARK,NON-LOCALS,i}$: average per vehicle expenditure within 50 miles of the particular park of non-local visitors for expenditure category i (lodging outside the park, gas and vehicle expenses outside the park, food and restaurants outside the park, supplies and groceries outside the park, all other types of expenditure outside the park, and all expenditures inside the park).

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R E S E A R C H

As a review, direct spending was calculated for two distinct populations:

- All visitors – all visitors to each state park, regardless of their origins. This figure includes spending by non-local visitors (those coming to the park from an origin more than 50 miles away) and local visitors (those originating within 50 miles of the park).

- Non-local visitors – only those visitors coming to a state park from an origin more than 50 miles away. This is a subset of the first category and thus represents a more conservative estimate of spending, which assumes that local visitors would have spent the same amount of money elsewhere in the community if they did not come to the park.

Recall as well that, for both groups, spending is counted only if it occurs within 50 miles of the park.

During the period of June, 2008 through May of 2009, all visitors to Colorado State Parks spent approximately $571 million in local communities within 50 miles of the state parks. A comparison of non-local visitors and all visitors, as shown in Tables 1 and 2, indicates that non-local visitors generate about 70 percent ($396 million) of these total visitor expenditures related to their trip to the parks.

While non-local vehicles spent about $230 on average on Colorado State Parks, vehicles from all visitors (both local and non-local) spent less, nearly $125 dollars on average. (Of course, this is a bigger population, so the total spending is more since there are many more vehicles in the total population.) These figures equate to per-visitor spending of $48 per visitor overall, and $80 per non-local visitor.[1]

Both among non-local and all visitors, visitors to the Lake Pueblo generate the highest expenditures, with non-local visitors to this park spending about 67 million dollars within 50 mile radius from the park, and all visitors spending almost 98 million dollars on the local economies of the Lake Pueblo This represents roughly 20 percent of the statewide total.

Although visitors to the Lake Pueblo create the biggest spending impact on the surrounding communities near the park, vehicles visiting the Lone Mesa spent the highest average per vehicle expenditure within 50 miles of the park (about $704 per vehicle for non-local vehicles, and $433 for all vehicles). This translates to approximately $318 per non-local visitor and $198 per total visitor.

When parks were grouped into four regions, i.e. Denver Metro[2], High Plains, Rocky Mountain, and Southeast regions (see Table 3), Tables 4 and 5 show that non-local visitors to the state parks in the Rocky Mountain and Southeast regions spent significantly more money within a 50 mile radius from the parks than in the other two regions, while non-local visitors to the parks in Denver Metro

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[1] For comparison, a recent editorial in the Sacramento Bee stated that a California State University study showed that the average visitor to California State Parks spent $58 per day. http://www.sacbee.com/opinion/story/2154667.html A 2006-2007 statewide analysis of Arizona State Parks came to the conclusion that the average per-visitor spending was $70.84. http://azstateparks.com/publications/downloads/2009_ASP_Economic_Summary.pdf. While methodologies may vary, these numbers indicate that the figures developed in this study are within a reasonable range and may even be conservative due to the data verification processes described earlier in the report.

[2] The seven-county Denver Metropolitan Area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson) was split from the rest of the High Plains region for this analysis.

region generated a smaller impact. This difference is smaller when all visitors are considered, in which case the Denver Metro area and the High Plains region are roughly equal in impact.

Notes About The Above Figures

Figures represent direct spending only, and do not include indirect and induced impacts that further multiply direct spending into (a larger) economic impact. Therefore, these figures are very conservative and do not represent the full economic impact of the parks, only the direct impact.

Figures represent the sum of local area spending, as opposed to a net state spending. For example, if a person in Region A of Colorado visits a park in Region B (also in Colorado), and another person in Region B makes the opposite trip to visit a park in Region A, the spending of both people is included in the figures. (Given the fact that a large proportion of in-state state parks visits involve significant travel, it is not unreasonable to assume that they do indeed generate spending within the state to some degree.)

CORONA
R E S E A R C H

Table 1. Direct Spending (Within 50 Miles Radius of State Park) – Non-Local Visitors

Park Name	Average per Vehicle Expenditure within 50 Miles	Total Expenditure
Arkansas Headwaters	$231.72	$44,606,505
Barr Lake	$46.73	$117,139
Bonny Lake	$190.47	$1,722,374
Boyd Lake	$180.68	$3,584,711
Castlewood Canyon	$76.22	$397,861
Chatfield	$165.52	$9,510,147
Cherry Creek	$104.82	$4,390,309
Cheyenne Mountain	$113.83	$422,702
Crawford	$209.09	$6,089,341
Eldorado Canyon	$141.23	$2,056,203
Eleven Mile	$201.22	$15,736,956
Golden Gate	$223.17	$17,385,590
Harvey Gap	$163.68	$566,505
Highline Lake	$218.37	$1,575,185
Jackson Lake	$179.03	$7,087,248
James M Robb-Colorado River	$312.12	$22,726,296
John Martin	$234.06	$5,853,753
Lake Pueblo	$234.28	$67,057,171
Lathrop	$195.95	$7,038,359
Lone Mesa	$703.85	$1,153,999
Lory	$148.87	$874,619
Mancos	$205.55	$2,285,259
Mueller	$248.91	$8,531,564
Navajo	$329.64	$18,307,128
North Sterling	$174.24	$4,706,863
Paonia	$173.64	$1,286,109
Pearl Lake	$286.96	$2,025,407
Ridgway	$269.09	$20,013,583
Rifle Falls	$157.15	$3,034,303
Rifle Gap	$212.20	$10,812,518
Roxborough	$116.80	$425,378
San Luis	$215.13	$1,077,757
Spinney Mountain	$146.31	$2,059,314
St. Vrain	$311.11	$4,931,696
Stagecoach	$247.36	$9,015,879
State Forest	$190.84	$20,280,756
Steamboat Lake	$319.65	$38,031,876
Sweitzer Lake	$429.77	$1,444,078
Sylvan Lake	$278.13	$7,789,254
Trinidad lake	$199.05	$5,438,909
Vega	$176.16	$8,056,945
Yampa River	$270.07	$6,539,781
TOTAL	**$229.50**	**$396,047,332**

Table 2. Direct Spending (Within 50 Miles Radius of State Park) –All Visitors

Park Name	Average per Vehicle Expenditure within 50 Miles	Total Expenditure
Arkansas Headwaters	$220.16	$54,722,181
Barr Lake	$32.67	$1,452,026
Bonny Lake	$172.15	$2,050,935
Boyd Lake	$117.42	$9,225,155
Castlewood Canyon	$25.47	$1,275,070
Chatfield	$44.70	$40,241,153
Cherry Creek	$24.90	$16,304,687
Cheyenne Mountain	$41.61	$1,508,420
Crawford	$166.65	$8,164,584
Eldorado Canyon	$60.29	$5,642,886
Eleven Mile	$212.44	$20,767,659
Golden Gate	$127.33	$28,666,211
Harvey Gap	$73.41	$790,919
Highline Lake	$112.25	$5,964,951
Jackson Lake	$174.02	$8,266,752
James M Robb-Colorado River	$174.37	$29,984,991
John Martin	$203.40	$7,175,292
Lake Pueblo	$159.20	$97,848,408
Lathrop	$194.45	$7,590,157
Lone Mesa	$433.56	$1,756,194
Lory	$42.40	$1,350,575
Mancos	$173.07	$2,964,688
Mueller	$192.49	$11,693,739
Navajo	$259.56	$25,965,122
North Sterling	$131.49	$6,208,104
Paonia	$166.26	$1,535,715
Pearl Lake	$254.54	$2,228,331
Ridgway	$189.21	$22,534,786
Rifle Falls	$131.73	$3,268,405
Rifle Gap	$214.57	$16,051,893
Roxborough	$33.22	$1,130,513
San Luis	$227.30	$1,148,587
Spinney Mountain	$136.02	$2,359,803
St. Vrain	$169.73	$8,580,717
Stagecoach	$221.58	$10,859,098
State Forest	$198.89	$21,940,726
Steamboat Lake	$312.57	$45,347,323
Sweitzer Lake	$138.35	$2,574,749
Sylvan Lake	$277.01	$9,476,008
Trinidad lake	$145.03	$6,594,063
Vega	$159.22	$9,952,564
Yampa River	$257.13	$8,190,342
TOTAL	**$125.17**	**$571,354,481**

Table 3. State Parks by Region

Region	Park Name
Denver Metro	Barr Lake
	Castlewood Canyon
	Chatfield
	Cherry Creek
	Eldorado Canyon
	Roxborough
	St. Vrain
High Plains	Bonny Lake
	Boyd Lake
	Golden Gate
	Jackson Lake
	Lory
	North Sterling
	State Forest
Rocky Mountain	Crawford
	Harvey Gap
	Highline Lake
	James M Robb-Colorado River
	Lone Mesa
	Mancos
	Navajo
	Paonia
	Pearl Lake
	Ridgway
	Rifle Falls
	Rifle Gap
	Stagecoach
	Steamboat Lake
	Sweitzer Lake
	Sylvan Lake
	Vega
	Yampa River
Southeast	Arkansas Headwaters
	Cheyenne Mountain
	Eleven Mile
	John Martin
	Lake Pueblo
	Lathrop
	Mueller
	San Luis
	Spinney Mountain
	Trinidad lake

Table 4. Visitor Spending by Region (Within 50 Miles Radius of State Park) –
Non-Local Visitors

REGIONAL TOTALS	Total Expenditure
Denver Metro	$21,828,734
High Plains	$55,642,162
Rocky Mountain	$160,753,445
Southeast	$157,822,991

Table 5. Visitor Spending by Region (Within 50 Miles Radius of State Park) –
All Visitors

REGIONAL TOTALS	Total Expenditure
Denver Metro	$74,627,053
High Plains	$77,708,457
Rocky Mountain	$207,610,661
Southeast	$211,408,310