

The Potential Loss in Gross National Product and Gross State Product from a Failure to Maintain California's Beaches^{*}

A Report prepared for the California Department of Boating and Waterways

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Table of Contents

1. Executive Summary	3
2. Introduction – Purpose of Study	5
3. How many people go to California’s Beaches?.....	7
4. Study Design.....	9
5. Error Checking and Data Constraints	10
6. Summary Statistics in Brief.....	10
7. Breakdown of Beach Use and Spending by Visitor Type	13
8. The Importance of Beaches in Tourists’ Decisions to Visit Southern California	16
9. The Economic Impact of Nine Southern California Beaches.....	18
10. The Economic Impact of All California Beaches	21
11. Total Economic Impact of the Loss of California’s Beaches	22
12. Tax Revenue Impact from Direct, Indirect and Induced Spending	25
13. Results from our Survey at Non-Beach Locations	27
14. Conclusion	30
References.....	31
Appendix 1: Auxiliary Tables from Survey	32
Appendix 2: Survey Protocol.....	42
Appendix 3: Survey Instrument.....	43

1. Executive Summary

- While previous studies have documented the significant economic impact created by California's beaches, the U.S. Office of Management and Budget's (OMB's) current policy limits the Federal interest in California's beaches since they believe visitors who decide not to attend California's beaches will spend their dollars elsewhere in the US, creating no net economic or tax impact for the Federal government.
- This study carefully examines the OMB's assumption and **quantifies the net loss to the State of California and to the US from a failure to maintain California's beaches.** We analyze the economic loss to California's Gross State Product (GSP) and US Gross National Product (GNP) should California's beaches cease to exist.
- During July, August and September of 2002, we randomly surveyed 2,370 household groups at nine Southern California beach locations in San Diego, Orange, Los Angeles and Santa Barbara counties. An additional 349 household groups were surveyed at non-beach tourists' locations in San Diego and Hollywood.
- More than two-thirds of overnight visitors surveyed at beaches said that they would either not come to the area or would come less often if there were no beaches.
- Visitors to Southern California beaches expressed a strong preference for out-of-state and foreign travel as a substitute for beach recreation if California's beaches were unavailable. **At all beaches surveyed, three quarters of respondents said that they would travel outside California more than they do now if California beaches were unavailable.**
- **Our analysis indicates that, with no beaches, California would lose \$5.5 billion in Gross State Product (GSP) annually, while the US economy would lose \$2.4 billion in Gross National Product (GNP) annually.** Please note that these are not economic impact estimates, but instead reflect the decisions of beachgoers to spend their money in other states and countries. **Unlike economic impact estimates, where substitution is possible, these estimates represent a net loss to the US and State economy.**
- **We estimate the total annual economic loss, including direct, indirect and induced effects to the California economy at \$8.3 billion, and \$6 billion to the US economy.**
- The State of California would lose \$509 million in direct tax losses annually. If we include indirect and induced effects, the loss increases to \$761 million.
- **The Federal Government would lose \$299 million in direct tax losses.** If we include indirect and induced effects, the loss increases to \$738 million. **The California Department of Boating and Waterways estimates the annual Federal cost of shore protection for California beaches will be between \$12 and 18 million per year, approximately 4-6% of the direct Federal tax loss.**
- Foreign and out-of-state visitors comprise a significant percentage of attendance at key beaches in California. For example, we found 26% of visitors to Venice Beach were foreign and 29% were from out of state. At Mission beach in San Diego, 41% were from out of state and 9% were foreign.

- Our analysis does not include the impact of foreign investment in California real estate on the shore and near beaches. We expect that a significant loss to the US economy would also occur if this investment declined but we have not attempted to quantify it in this study. To the extent that foreign investment is significant, our estimates understate the loss to the US economy.

2. Introduction – Purpose of Study

Previous studies prepared for the State of California as well as studies prepared for various Federal Agencies have documented the significant economic impact created by California's beaches.¹ However, the U.S. Office of Management and Budget's (OMB's) current policy limits Federal interest in California's beaches since OMB believes: (1) that much of the recreational impact of beaches is due to local tourism and, (2) that these local tourists would simply substitute other forms of recreation for beach recreation if beaches in California eroded to the point where beach tourism was significantly affected. Similarly, OMB argues that US tourists from out of state would find other venues (beaches in other states, lake, pools, or non water-based recreation) should California's beaches decline. In short, the OMB believes that visitors who decide not to attend California's beaches will spend their dollars elsewhere in the United States, creating no net economic or tax loss for the federal government.

We are not aware of any empirical evidence supporting these assumptions. Indeed, before undertaking this effort we had a great deal of survey evidence as well as anecdotal evidence from numerous studies of California's beaches that appeared to contradict the OMB's assertion. We were also aware that foreign tourism plays a significant role at many of California's beaches, especially nationally known beaches like Venice beach (in LA) and Mission beach (in San Diego). In this case it seemed quite likely that foreign visitors would decrease their total demand for trips to the US if California's beaches degraded or ceased to exist. At the outset of this project we also wanted to examine the hypothesis that Californians and other US visitors to California's beaches would be more inclined to travel abroad if beach recreation in California ceased to be an option.

This study examines the response of local, out-of-state, and foreign beachgoers if California beaches were to become unavailable. The goals of the study are:

- To quantify the attendance of local, out-of-state and foreign tourists at designated beaches in Santa Barbara, Los Angeles, San Diego and Orange counties that are believed to have national significance;
- To quantify the number of tourists at California's beaches who would vacation in Mexico or other countries if beach recreation opportunities were insufficient at California's beaches;
- To quantify the attendance of foreign visitors at these beaches—how important the beach was in their decision to visit, and whether they would still visit if California's beaches were eroded or otherwise unavailable;
- To estimate the tax revenues loss of tax revenue to the State and Federal governments resulting from the elimination of California's beaches;

¹ For example see King and Potepan (1997) and King (1999).

- To identify and quantify the amount of tourist dollars that would represent a net loss in Gross National Product (GNP) to the United States (and thus could be considered a benefit in the USACE's NED calculation) if these beaches eroded;
- To identify and quantify the amount of tourist dollars that would represent a net loss to the State of California and thus would be a loss in Gross State Product (GSP);
- To identify the demographic distribution of visitors at these beaches;
- To determine the sufficiency of other outdoor recreational activities as a substitute for beach recreation for in-state visitors; this will help the State determine the importance of beach restoration in its overall spending for outdoor recreational activities;
- To determine the importance of California's beaches to the decision making of foreign tourists at certain non-beach locations in Los Angeles and San Diego Counties, and whether they would still visit if California's beaches were eroded or otherwise unavailable.

3. How many people go to California’s Beaches ?

A recent conference sponsored by the California State Water Resource Control Board brought all of the economists and many public policymakers concerned with the economic value of California’s beaches together. At the conclusion of the conference all participants indicated that better attendance data is needed. While many local beach authorities and State Parks keep attendance records, the methodology varies significantly and may not be adjusted for changes over time.² Other local authorities keep no records and must rely on an historical average.³ Lifeguard counts are the most common method of taking attendance, but little training is given to lifeguards. However, Hannemann concluded that at Huntington beach the official records were reasonably accurate (within 10%).⁴

The most comprehensive count of beach attendance was conducted in 1995 for the Department of Boating and Waterways. A random telephone sample of California residents was taken. The survey concluded that California’s beaches experience 567 million visitor days per year (referred to as “PRI report below”).⁵ Please note, however that this number includes attendance on piers and boardwalks as well. Since the purpose of this study is to examine people who would likely go elsewhere if California’s beaches ceased to exist, we decided to limit our sample to people actually on the beach. We estimate that this number is about half of the 567 million total—we think the number may be closer to 60%, but we would prefer to err on the conservative side. Another study conducted at the University of Southern California (USC), uses a methodology generated by the EPA and estimates the total attendance at California’s beaches to be 194 million per year⁶ **For this study we have decided to use an average of these two numbers, 238 million as the most reasonable estimate for beach attendance in the State.**

We also decided to exclude beaches in northern California which are not suitable for swimming and thus do not attract the type of vacationers and day-trippers that beaches to the south do. We believe visitors to San Francisco’s beaches and beaches in Marin County and farther north are much less likely to go abroad if beaches ceased to exist.⁷ According to the previously cited USC study, 97% of beach visitors in California attend beaches south of San Francisco. Table 1 below summarizes our calculations.

Table 1: How many people go to the Beach in Southern and Central California?

Item	USC Group	PRI Report	Midpoint
Yearly CA beach attendance	194,367,557	283,380,000	238,873,779
Southern/Central CA %	97.3%		232,456,120

² For example, one common method, used by many State Parks is a car count, which assumes an average number of people per car. With the popularity of minivans and SUVs it is quite possible that the average has changed over time, yet many parks still use the same average they have used for years.

³ For example, Carpinteria and most beaches in north San Diego County.

⁴ See “The American Trader Case,” Unpublished Manuscript, 1998.

⁵ See King and Potepan, 1997.

⁶ The study is still in progress; for more information contact Judith Kildow at jkildow@usc.edu.

⁷ On the other hand, Santa Cruz’s beaches just to the south of San Francisco has significantly warmer water and draws a more traditional beach crowd.

In addition to our overall estimate of the loss to California, we decided to focus on specific beaches that we knew attracted large numbers of out-of State and Foreign visitors. We selected nine beaches in Southern California to collect enough data to make meaningful inferences about their own contribution to State Gross State Product (GSP) and US Gross National Product (GNP):

1. Mission Beach (San Diego),
2. Encinitas’s main beaches (north San Diego County),
3. Solana Beach (north San Diego County),,
4. Del Mar’s main beach (north San Diego County),
5. San Clemente (Orange County),
6. Huntington Beach (Orange County),
7. Venice Beach (Los Angeles),
8. Santa Barbara City beach (Santa Barbara),
9. Carpinteria State and City beach (Santa Barbara County).

Please note that these beaches were not chosen to be representative of all of California’s beaches, but rather were selected because of their attendance, national significance, and high rate of out-of-state and foreign attendance. Later in the study we will create a composite based on other data we have collected in past studies as well as this study. Table 1a lists the beaches surveyed with annual attendance figures.

Table 1a: Study Beaches Annual Attendance⁸.

Beach	Annual Attendance
Carpinteria	1,900,000
Del Mar/Encinitas/Solana Beach ⁹	5,053,000
Huntington Beach ¹⁰	10,101,775
Mission Beach	3,277,716
San Clemente ¹¹	1,973,314
Santa Barbara ¹²	388,333
Venice Beach	8,147,725
Total	30,841,864

In addition to the nine beaches listed above, we also surveyed tourists at Old Town San Diego Historical Park in San Diego and in Hollywood (Los Angeles). The results from this study will be discussed later in this report.

⁸ All estimates are official statistics except for Carpinteria and Del Mar/Encinitas/Solana beach where we used the best estimates by local officials. We also used our own judgment and believe all of these estimates are reasonable.

⁹ Combined attendance of Beacons, Stone Steps and Moonlight Beaches in Encinitas, San Elijo and Cardiff Beaches in Solana Beach, and Del Mar Beach.

¹⁰ City and State Beach.

¹¹ City Beach.

¹² Main Beach (i.e., East Beach)

4. Study Design

The instrument used for this analysis was a written, mostly closed-end survey that is included in the appendix. Respondents were given a choice between filling out the survey themselves (which most did) or having the surveyor read the survey to the respondent while the surveyor filled it out. We have found that this type of survey yields an extremely high rate of response (80-90%) as compared to surveys where respondents are asked to mail back their responses. Mail-back surveys from beaches typically yield only 33-50% response rates even after the respondent agrees to participate. Our sampling strategy minimizes the possibilities for any selection bias since we capture a very high response from all of the respondents initially contacted.

Surveys were given by research assistants trained to sample randomly. Days were chosen to reflect typical beach attendance patterns (i.e., weekend days were sampled more often). Surveyors zig-zagged across the beach covering the entire beach area in one day. They were instructed to survey every *n*th group, where *n* depended on the number of surveys they expected to collect that day and the density of the crowd. Surveyors were trained how to help respondents if they asked without biasing the responses. Most respondents found the survey straightforward and there were few glitches.¹³

A total of 2,370 household groups were surveyed at the nine subject beaches. We combined data from the three North San Diego county beaches, Del Mar, Encinitas and Solana Beach, order to achieve a satisfactory sample (360 observations), given time and weather constraints. The greatest number of surveys (407) was taken at Carpinteria, and the fewest number was obtained at San Clemente (250). On average, we surveyed 339 respondents per beach.

At the two non-beach locations, the surveyors used the same survey instrument and essentially the same methodology as when surveying on the beaches. Tourists were approached while walking or while sitting on benches at rest/refreshment areas of the respective locations. Respondents who agreed to be surveyed were given the choice of filling out the survey themselves or receiving help from the surveyor, the same as at the beaches. We collected a total of 349 surveys at the two non-beach locations.

All surveys were conducted during July, August and September of 2002, the “high” season when most vacation visiting takes place. For our estimates of low season visitation, we assumed, conservatively, that all visitors would be day-trippers. High and low season attendance was estimated using best available information from local law enforcement, the relevant government agency, the responsible lifeguard service, or previous academic studies.

¹³ Some respondents (10%) did not fill the entire survey as is expected in a large survey. The most typical item left blank was the most sensitive question: income.

5. Error Checking and Data Constraints

After we received the surveys and data files, we checked and double checked each survey to catch mistakes and unreasonable values. We discarded a small number of unreasonable responses to questions about daily spending at the beach (for instance, spending for beer, wine and liquor in excess of \$100 per day per person).

The survey contained two hypothetical questions about the amount of additional travel the respondent would undertake, both out-of-state and abroad, if California's beaches were unavailable. While we are confident that the vast majority of respondents answered these questions in a thoughtful manner, a small number of answers were clearly unreasonable (e.g., a day tripper who goes to a beach near home one day out of three who says that he or she will travel abroad the same number of days). We adopted two constraints so that answers like this would not unduly bias the means: we discarded the top 5% of responses as outliers, and we constrained the combined value of additional days spent out-of-state and abroad not to exceed the number of days spent at California beaches. We believe these constraints add credibility to our results.

6. Summary Statistics in Brief

The following are highlights from the summary statistics. Unless otherwise noted, the figures in this section represent the high season only.

- The proportion of respondents who were California residents ranged from a high of 85% (Carpinteria) to a low of 45% (Venice Beach). Mission Beach in San Diego had the highest proportion of out-of-state US visitors (41%) while Venice Beach had the greatest proportion of foreign visitors (27%). (See Table 3)
- **Between 73% (Huntington Beach) and 83% (Del Mar/Encinitas/Solana Beach) of respondents said they would travel out of state or abroad more often if there were no beaches in California.** (See Table 13)
- Most overnight visitors described the purpose of their trip as primarily pleasure. Carpinteria had the highest proportion at 97%, closely followed by San Clemente at 95%. Beaches with the smallest proportion were Huntington Beach (81%) and Del Mar/Encinitas/Solana Beach (85%). (See Table 4)
- Huntington Beach and Venice Beach were the most ethnically diverse of the beaches surveyed. 14% of beachgoers at Huntington Beach described themselves as Hispanic, 7% as Asian, 2% as African American and 71% as Caucasian. At Venice Beach, the proportions were 12% Hispanic, 4% Asian, 5% African American and 74% Caucasian. The least ethnically diverse was San Clemente, which was 92% Caucasian. (See Table 5)

- Median annual household income ranged from \$62,500 at Venice Beach to \$125,000 at Del Mar/Encinitas/Solana Beach. Mission Beach and Venice Beach had the smallest household sizes (3.25 and 3.29 persons) while San Clemente and Carpinteria had the largest (4.20 and 4.05). (See Table 2)

Table 2 presents the mean number of persons present in the respondent's household group who are at the beach, the mean number of household members under 18 years of age, the mean household size, and the median income of the household. The typical beach group contains 3-4 people from the same household (though more than one household may travel together) with an average of about one person under 18.

Table 2: Household Demographics.

For All Visitors	Number in household group today	Under 18 in household group today	Number in household	Median household income
Carpinteria	4.20	1.99	4.05	\$87,500
Del Mar/Encinitas/SB*	2.88	1.11	3.38	\$125,000
Huntington Beach	2.74	0.97	3.79	\$87,500
Mission Beach	3.06	0.94	3.25	\$62,500
San Clemente	3.43	1.66	4.20	\$125,000
Santa Barbara	2.78	0.78	3.36	\$87,500
Venice Beach	2.36	0.66	3.29	\$62,500

The second survey question asked whether the primary residence of the respondent was in California, outside California but in the United States, or outside the United States. The distribution of answers is cross-tabulated by beach in Table 3. Attendance by foreign and out of state visitors varies significantly across these beaches, with Venice beach having the greatest number of foreign visitors (26%) and Mission Beach having the greatest number of US visitors from out of State (41%).

Table 3: Primary Residence of Household.

	California	USA, not CA	Foreign
Carpinteria	85.26%	13.02%	1.72%
Del Mar/Encinitas/SB*	78.86%	17.14%	4.00%
Huntington Beach	79.25%	16.98%	3.77%
Mission Beach	50.29%	40.94%	8.77%
San Clemente	74.70%	21.69%	3.61%
Santa Barbara	64.75%	21.46%	13.79%
Venice Beach	44.69%	29.14%	26.17%

Table 4 describes the percentage of trips at each beach that were primarily business, primarily leisure, or a combination of the two. The vast majority of trips were primarily for leisure, ranging from 85-95%.

Table 4: Purpose of Trip (Business/Pleasure – Overnight Visitors Only).

	Primarily Business	Primarily Leisure	Both Business and Leisure
Carpinteria	0.81%	97.15%	2.03%
Del Mar/Encinitas/SB*	2.26%	84.96%	12.78%
Huntington Beach	4.35%	81.16%	14.49%
Mission Beach	1.30%	90.91%	7.79%
San Clemente	0.93%	95.33%	3.74%
Santa Barbara	0.00%	91.43%	8.57%
Venice Beach	2.58%	86.08%	11.34%

We also asked each respondent his or her ethnicity. Although respondents were presented with five choices—White (Caucasian), Hispanic, Asian, Black (African American), or Other—they were instructed that they could check more than one box if appropriate. Respondents who checked multiple boxes are listed as “Multi-ethnic.” Table 5 presents the distribution of responses at each beach location. The vast majority of beach visitors (generally between 80-90%) describe themselves as Caucasian, with a significant number of Hispanic visitors at some beaches, notably Huntington beach and Venice beach. Few African Americans attend the beach, though, again, Venice beach is somewhat of an exception. The ethnic composition of beach attendees is consistent with other surveys conducted.¹⁴

Table 5: Ethnicity.

	White (Caucasian)	Hispanic	Asian	Black (African American)	Other	Multi-ethnic
Carpinteria	83.55%	8.48%	1.03%	1.03%	2.31%	3.60%
Del Mar/Encinitas/SB*	87.98%	4.40%	1.47%	0.29%	5.57%	0.29%
Huntington Beach	71.10%	13.96%	6.82%	2.27%	3.57%	2.27%
Mission Beach	78.93%	8.01%	2.08%	0.00%	4.75%	6.23%
San Clemente	92.34%	2.42%	1.61%	0.00%	2.02%	1.61%
Santa Barbara	80.00%	9.39%	4.08%	0.82%	1.63%	4.08%
Venice Beach	73.59%	11.54%	4.10%	5.38%	3.33%	2.05%

¹⁴ See, for example, King 1998.

7. Breakdown of Beach Use and Spending by Visitor Type

Respondents were asked how many days per year they spend at California’s beaches. As one would expect, local day-trippers spend the most days per year at California beaches, followed by vacationers who are also California residents. Table 6 gives the average number of days at the beach per year for different visitor types for each beach. The average attendance per person varies from 22 days (Carpinteria) to 39 days (Del Mar). As one would expect, foreign vacationers spend less time at the beach—between one and one and a half weeks.

Table 6: Average Number of Days at CA Beaches per year.

	ALL	CA Day Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers
Carpinteria	21.99	31.92	17.86	10.74	8.07
Del Mar/Encinitas/SB*	38.59	49.06	20.51	12.13	6.00
Huntington Beach	25.88	29.84	21.50	10.14	5.89
Mission Beach	28.84	52.95	18.04	10.21	12.54
San Clemente	31.66	44.33	16.45	11.11	7.29
Santa Barbara	34.01	54.27	19.06	5.01	9.97
Venice Beach	27.04	43.50	24.19	9.55	11.91

On an average day, most of the people at the beaches we surveyed were day-tripping California residents. Day-trippers outnumbered the second largest visitor category (US vacationers) by almost four to one. However, over the course of a year, more individual US vacationers visit these beaches than individual day-trippers. While these two statements seem contradictory, they are easily explained by the fact that day-trippers visit the beach much more often than US vacationers. The key distinction to keep in mind here is between visitors (the number of individuals who visit the beach in a given year) and visitor-days (the total number of all day-visits by everyone). Since all attendance is kept in visitor-days we used visitor-days as the unit of analysis. Table 7 illustrates the difference between annual attendance and the number of individuals visiting the surveyed beaches over the course of a year.

Table 7: Attendance and the Number of Individuals Visiting Surveyed Beaches.

	Annual Attendance	% of Total Attendance	Average days/year at Surveyed Beaches	Individuals Attending Surveyed Beaches	% of Total Individuals Visiting Surveyed Beaches
CA Day Trippers	19,698,436	63.87%	40.42	487,385	34.50%
Ca Vacationers	3,858,882	12.51%	21.10	182,858	12.94%
US (not CA) Vacationers	5,464,625	17.72%	10.35	527,936	37.37%
Foreign Vacationers	1,819,921	5.90%	8.48	214,640	15.19%
Total	30,841,864	100.00%		1,412,820	100.00%

Table 8: Days away from Home and at the Beach on this Trip.

	CA Vacationers		US (not CA) Vacationers		Foreign Vacationers	
	Days away from home this trip	Days at the beach this trip	Days away from home this trip	Days at the beach this trip	Days away from home this trip	Days at the beach this trip
Carpinteria	5.99	5.27	11.41	6.16	14.25	5.86
Del Mar/Encinitas/SB*	9.12	7.36	9.65	6.51	15.36	6.43
Huntington Beach	6.83	2.88	9.34	5.07	18.75	5.44
Mission Beach	6.04	5.14	7.04	5.15	17.75	8.21
San Clemente	6.67	5.41	8.88	6.21	15.17	6.83
Santa Barbara	3.62	2.58	6.67	3.64	18.86	8.93
Venice Beach	6.10	3.71	9.93	5.17	17.99	7.33

As one would expect, vacationers who come from out-of-state tend to take longer vacations than California residents, but spend a smaller proportion of those vacations at the beach. Foreign visitors take even longer vacations and spend an even smaller proportion at the beach. Table 8 above cross-tabulates the length of the current trip, and how many days out of the current trip will be spent at the beach for each beach and visitor type. Table 9 lists the average days per year at different beaches for each visitor group, and also summarizes the information in Table 8. Visitors on overnight trips to the beach from California spend about two-thirds of their vacation days at the beach, while visitors from the US outside of California spend slightly less time at the beach (58% of their vacation days). Foreign visitors surveyed spent 38% of their days at the beach. While 38% may seem low in comparison to other visitors, it should be remembered that visitors traveling to California from foreign countries have a number of alternative sites to see: Disneyland and other amusement parks, inland recreational areas such as State and National parks, museums, shopping areas, etc. The fact that they choose to spend roughly two out of every five days at the beach indicates that beaches represent a significant attraction for these tourists.

Table 9: Days at the Beach and on Vacation (Beachgoers).

	Days per Year at CA beaches	Days away from home this trip *	Days at the beach this trip *	Percent of trip at the beach*
CA Day Trippers	40.42			
CA Vacationers	21.10	6.82	4.38	64.22%
US (not CA) Vacationers	10.35	9.36	5.46	58.33%
Foreign Vacationers	8.48	17.38	6.55	37.69%

* Vacationers only.

All respondents were asked to report their current daily spending on their trip, broken down by type of spending (e.g., gas and auto, groceries, restaurants, lodging, etc.). Tables A2a through A2e in the appendix give detailed breakdowns of average individual spending (i.e., household spending divided by the size of the household group) at each beach by each type of visitor. Table 10 provides average individual spending per day for each type of visitor. Total

spending varies from just over \$20 for day-trippers to between \$50 and \$60 for overnight visitors. The difference is not surprising given that overnight visitors have much higher expenses for lodging, food and auto (due to the fact that many out of state and foreign visitors rent cars).

Table 10: Average Daily Spending (per Individual) at CA Beaches.

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
CA Day-Trippers	\$3.91	\$5.81	\$2.59	\$5.34	\$1.14	\$1.94	\$0.00	\$20.73
CA Vacationers	\$5.22	\$8.77	\$3.58	\$11.33	\$1.31	\$1.78	\$19.31	\$51.30
US (not CA) Vacationers	\$7.27	\$10.06	\$3.62	\$14.34	\$1.61	\$2.11	\$20.83	\$59.83
Foreign Vacationers	\$8.01	\$8.23	\$3.93	\$11.83	\$1.20	\$2.59	\$17.24	\$53.03

Table 11 summarizes total spending per year by each visitor type at each beach. Spending by each visitor type at each beach was calculated separately, based on survey and attendance data for that particular beach (see Tables A3a through A3d in the appendix).

Table 11: Beach Attendance and Annual Spending (Attendance times Daily Spending).

	Annual Attendance	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Carpinteria	1,900,000	\$13,764,236	\$26,889,911	\$8,078,324	\$1,913,482	\$50,645,953
Del Mar/Encinitas/SB*	5,053,000	\$55,902,177	\$26,489,426	\$37,013,230	\$6,071,871	\$125,476,704
Huntington Beach	10,101,775	\$178,519,428	\$18,478,800	\$66,075,735	\$10,613,879	\$273,687,842
Mission Beach	3,277,716	\$44,250,560	\$22,934,862	\$54,394,223	\$11,699,829	\$133,279,475
San Clemente	1,973,314	\$23,431,365	\$12,473,529	\$12,481,107	\$1,581,781	\$49,967,782
Santa Barbara	388,333	\$4,558,115	\$3,211,493	\$3,936,693	\$2,071,198	\$13,777,498
Venice Beach	8,147,725	\$117,632,397	\$20,370,798	\$107,573,900	\$97,128,577	\$342,705,672
All Surveyed Beaches	30,841,864	\$438,058,279	\$130,848,818	\$289,553,212	\$131,080,617	\$989,540,926

At the nine Southern California beaches in our survey, we estimate direct spending of \$990 million as a result of beach recreation. In Table 12, we extend our analysis of spending to all California beaches. We estimate that an annual attendance of 232,456,120¹⁵ at all California beaches represents \$6.7 billion in direct spending by beachgoers.

¹⁵ See section 3 for details on how this figure was estimated.

Table 12: Beach Attendance and Annual Spending for all California Beaches.

	Annual Attendance	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
All Surveyed Beaches	30,841,864	\$438,058,279	\$130,848,818	\$289,553,212	\$131,080,617	\$989,540,926
Other CA Beaches ¹⁶	201,614,256	\$3,239,031,861	\$1,137,644,087	\$1,206,202,356	\$160,370,800	\$5,743,249,103
All California Beaches	232,456,120	\$3,677,090,140	\$1,268,492,905	\$1,495,755,568	\$291,451,417	\$6,732,790,029

8. The Importance of Beaches in Tourists’ Decisions to Visit Southern California

At all beaches surveyed, **approximately three quarters of respondents said that they would travel outside California more than they do now if California beaches were unavailable.** Carpinteria beachgoers reported the lowest preference for traveling out of state or abroad at 71%, while Del Mar/Encinitas/Solana Beach reported the highest at 83%.

Table 13: If there were No Beaches in California, would you travel outside California more often?

	Yes (travel outside CA more often)	No (skip going to beaches)
Carpinteria	70.97%	29.03%
Del Mar/Encinitas/SB*	82.81%	17.19%
Huntington Beach	73.25%	26.75%
Mission Beach	75.52%	24.48%
San Clemente	74.19%	25.81%
Santa Barbara	79.62%	20.38%
Venice Beach	74.11%	25.89%

Question 5c of the survey asked overnight visitors (but not day-trippers) how important the beach was to their trip. Table 14 presents the responses of visitors from the different beaches. The beach was most important to visitors at San Clemente beach, where 79% either would not or might not come if the beach was not there. Visitors at Venice beach were least sensitive to the absence of the beach – only 49% would not come or would come less often. At other locations, the percentage ranged between 62% and 74%. **Very few people said the beach was unimportant or would not affect their trip decision.**

¹⁶ We assume that the remaining 201,614,256 annual attendance from non-surveyed beaches is distributed among the four visitor types in these proportions: 77.5% day trippers; 11% CA vacationers; 10% US (not CA) vacationers; 1.5% foreign vacationers. Spending is assumed to be the same as the weighted average of the surveyed beaches for each visitor type.

Table 14: How Important is the Beach to your Trip? (All Vacationers)

	Beach important – No beach no trip	Might not come, or would stay less often.	Would still come, but like the beach.	Can take beach or leave it – would not affect decision.
Carpinteria	54.00%	20.00%	24.00%	2.00%
Del Mar/Encinitas/SB*	45.97%	23.39%	25.00%	5.65%
Huntington Beach	31.51%	32.88%	28.77%	6.85%
Mission Beach	47.69%	21.76%	25.46%	5.09%
San Clemente	56.07%	23.36%	19.63%	0.93%
Santa Barbara	39.45%	22.94%	33.03%	4.59%
Venice Beach	22.22%	26.77%	45.96%	5.05%

Table 15 presents same information as Table 14 by visitor type instead of by beach. Beaches were most important to California vacationers, less so to US visitors, and still less to those from other countries.

Table 15: How Important is the Beach to your Trip? (Vacationers, beach locations).

	Beach important – No beach no trip	Might not come, or would stay less often.	Would still come, but like the beach.	Can take beach or leave it – would not affect decision.
CA Vacationers	41.77%	31.40%	22.76%	4.07%
US (not CA) Vacationers	38.19%	26.03%	31.56%	4.23%
Foreign Vacationers	22.34%	21.71%	44.40%	11.56%

In addition to asking respondents about their specific spending patterns, we also asked several qualitative questions asking them to give an opinion of California’s beach. One question stated: “If No Beaches existed in California, there would still be adequate outdoor recreation for my household?” The results from this question are presented in Table 16 below. Over 40% of respondents disagreed with the statement—implying that many visitors thought there would be inadequate recreational opportunities in California without beaches.

Table 16: If No Beaches existed in California there would still be adequate outdoor recreation for my household?

Day-trippers at Beach Locations	
Agree Strongly	14.44%
-----	17.18%
Neutral	26.01%
-----	20.27%
Disagree Strongly	22.11%

9. The Potential Loss to GNP and GSP from Nine Southern California Beaches

In general, beachgoers budget a certain amount of money for recreation each year that is allocated to different activities. If California's beaches were unavailable to current beachgoers, they would have three choices of how to spend the money they would normally spend enjoying California's sun, sea and sand: (1) spend the money on recreation elsewhere in California; (2) spend the money on recreation in other states; or (3) spend the money on recreation outside the United States.

As part of the survey, we asked beachgoers **how many additional days they would spend traveling out-of-state or abroad if California beaches were unavailable**, how much their household group would spend each day while out-of-state or abroad, and how many persons from their household would travel out-of-state or abroad. From the answers to these questions, **we calculated the average annual individual spending out-of-state and abroad that would result from the loss of California's beaches**. Table 17 summarizes estimated annual spending outside California by day-trippers, CA vacationers, US vacationers and foreign vacationers resulting from the loss of California beaches.¹⁷ As one can see, the loss in spending to both the State and the US economy is substantial, amounting to several hundred dollars per visitor. Relative to other visitor types, the average California day-tripper spends more time and money each year at California beaches, and would spend more than other visitors outside California (\$844 per visitor outside of CA and \$369 per visitor outside of the US) if these beaches were unavailable. At first this result was surprising, since we expected the greatest loss would come from foreign visitors who decided not to come to California or the US, but given the large amount of money that Californians currently spend on beach recreation, our result makes a great deal of sense. While foreign visitors indicated their spending in the US and in California would decrease by a lower amount, the loss of \$321 per visitor is still substantial.

Table 17: How much would Beach visitors spend outside of CA and the US if CA had no beaches?

	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
CA Day-Trippers	\$475.37	\$368.76	\$844.13
CA Vacationers	\$324.66	\$218.15	\$542.81
US (not CA) Vacationers	\$252.57	\$210.53	\$462.78
Foreign Vacationers	\$145.06	\$176.21	\$321.27

¹⁷ Tables 16a through 16d in the appendix list the average annual out-of-state and foreign spending, by beach, for the four types of beachgoer: California day-trippers, California vacationers, US (not CA) vacationers, and foreign vacationers

Annual individual spending was aggregated using annual attendance figures for each beach.¹⁸ Table 18 below summarizes spending by beach, while Table 19 summarizes spending by visitor type. Table 19 lists the aggregate spending of the four visitor types for all beaches in the survey. **Our analysis indicates that the California economy would lose \$775,711,746 in direct spending by beachgoers at these nine Southern California beaches alone. \$346,010,301 (45%) would also be lost to the United States economy.** Spending for each separate visitor group, broken down by beach, is listed in Tables A4a through A4d in the appendix. Not surprisingly, day-trippers from San Diego area beaches show a greater relative preference for spending abroad than day-trippers from beaches farther north (Table A4a). We attribute this to the close proximity of Mexico and Baja California beaches for these individuals.

¹⁸ We calculated the average annual spending out-of-state and abroad for individuals—presented in Table 17—directly from our survey data. However, in order to calculate total spending (out-of-state or abroad) resulting from the loss of California’s beaches, we first need to know how much spending elsewhere would result from each day of beach attendance that does not take place.

To convert annual spending per individual to spending per beach-day, we used the following methodology:

1. We calculated the average amount per year that individuals say they would spend abroad or out of state (per day spending times the number of days out of state or abroad) for individual CA day-trippers, CA vacationers, out-of-state vacationers and foreign vacationers. Suppose that at a particular beach, the average CA vacationer says he currently go to the beach twenty days per year, and if CA beaches were unavailable, he would spend a total of ten days abroad at a cost of \$100 per day. Increased spending abroad would therefore be \$1000 per year per individual for that group if California beaches were unavailable.
2. We converted the annual increase in spending abroad per individual for the total loss of CA beaches to the increase in foreign spending for each day of individual attendance lost at CA beaches by dividing average annual spending abroad by the average annual attendance at CA beaches. Using the figures above, the loss of twenty days of attendance at CA beaches would result in a \$1000 increase in spending abroad, or an increase of \$50 in spending abroad for each day of attendance lost at CA beaches. This is essentially weighting annual spending by the probability of being surveyed.
3. Since we now have a per day value, we can calculate total increased spending abroad by multiplying \$50 (in this example) times the annual attendance of CA vacationers at this particular beach. If the annual attendance by CA vacationers at this beach is 1000 beach-days, then the loss of California’s beaches will result in a \$50,000 increase in spending abroad by individuals who would otherwise have visited this beach.

Spending abroad and out-of-state was aggregated separately for each of the four groups (CA day-trippers, CA vacationers, out-of-state vacationers and foreign vacationers) for each beach in the survey.

Table 18. Spending outside California as a result of the loss of California Beaches.

	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
Carpinteria	\$25,925,984	\$16,444,892	\$42,370,876
Del Mar/Encinitas/SB*	\$86,961,469	\$74,015,578	\$160,977,047
Huntington Beach	\$120,630,867	\$87,050,289	\$207,681,157
Mission Beach	\$47,694,982	\$42,637,608	\$90,332,589
San Clemente	\$28,866,851	\$14,841,000	\$43,707,852
Santa Barbara	\$7,489,556	\$5,129,701	\$12,619,257
Venice Beach	\$112,131,735	\$105,891,233	\$218,022,968
Surveyed Beaches	\$429,701,445	\$346,010,301	\$775,711,746

Table 19: Spending outside California by Visitor Type (surveyed beaches).

	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
CA Day Trippers	\$240,289,560	\$182,426,414	\$422,715,974
CA Vacationers	\$47,766,027	\$28,376,362	\$76,142,389
US (not CA) Vacationers	\$112,695,053	\$98,261,283	\$210,956,336
Foreign Vacationers	\$28,950,805	\$36,946,242	\$65,897,047
Total (Surveyed Beaches)	\$429,701,445	\$346,010,301	\$775,711,746

A number of factors explain the high proportion of beach spending by day-trippers that would be transferred out-of-state and abroad:

1. Day-trippers who choose to travel out of state or abroad if California beaches are unavailable are substituting high cost recreation (vacations away from home) for very low cost recreation (visits to the local beach). If beaches are a preferred form of recreation – a reasonable assumption, given that people are willing to pay higher housing prices to live near the beach in California – day-trippers are likely to travel to beaches elsewhere, even if they will have fewer days at the beach due to the greater expense of vacations compared to day trips.
2. If California beaches were unavailable, day-trippers would presumably be less willing to pay to live near the coast, and might substitute travel for some (or all) of their current housing premium.
3. Day-trippers indicate that they would allocate 57% of their spending outside California to out-of-state travel and 43% to travel abroad. This relatively large foreign component may be partly explained by the close proximity of Mexico and Baja California beaches, particularly for day-trippers at San Diego area beaches.

Table 20: Allocation of Spending Out-of-State and Abroad.

	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
CA Day Trippers	57%	43%	100%
CA Vacationers	63%	37%	100%
US (not CA) Vacationers	53%	47%	100%
Foreign Vacationers	44%	56%	100%

Table 20 describes how each of the four visitor types would split his or her spending between foreign and out-of-state travel as substitutes for CA beaches. California vacationers would spend somewhat more in the US than day-trippers (63%) and abroad somewhat less (37%), perhaps reflecting the fact that many of them reside farther from Mexican beaches than do day-trippers. US vacationers would spend somewhat more abroad (47%) and, not surprisingly, foreign visitors would spend and travel abroad more than in the US (56%) if California beaches were unavailable. **What is particularly striking is the strong preference of visitors to Southern California beaches for foreign travel as a substitute form of recreation.**

10. The Potential Economic Loss to GNP and GSP from Southern and Central California Beaches

California's coastline stretches 1100 miles, from Pelican State Beach on the Oregon state line to the Mexican border in San Diego County, however, beaches on the north coast, in particular those in or north of San Francisco are qualitatively different from beaches on the Central and Southern California Coast.¹⁹ In particular the water is generally too cold to swim, and many Northern California beaches are subject to dangerous currents that make swimming impossible. While tourism still plays a significant role at many of these beaches, and surfing is especially popular at a number of Northern California beaches, we decided to exclude these beaches from our estimates since we cannot conclude with confidence that visitor behavior at these beaches will be similar to Southern and Central California beaches.

To estimate the total economic loss from beach tourism at all Southern and Central California beaches, we applied our estimates by beach visitor type to the entire estimated attendance at these beaches. Recall that in section 3 we concluded that the total attendance per year at all Central and Southern California beaches is 232,456,120. To estimate the loss in GNP and GSP, we could not assume that the characteristics of all beach visitors were the same as in our sample(s). In particular, foreign and out-of-state visitors are a much smaller proportion of total visitation at these beaches (1.5% and 11% respectively), while day-trippers make up an even larger share of visitors.²⁰

¹⁹ There are, of course, exceptions, notably Stinson beach in Marin County.

²⁰ We obtained these proportions by examining numerous other surveys conducted on beaches across the State and compiling an average profile.

Table 21 applies the average response of different visitor types from our survey to the beaches not covered in our survey. Table 22 combines spending for surveyed and non-surveyed beaches. **In response to the loss of California’s beaches, California’s economy would lose \$5.5 billion in direct spending by beachgoers, while the loss to the US economy would be \$2.4 billion. Please note that these numbers represent an actual loss to Gross State Product (GSP) and Gross National Product (GNP) respectively.** Unlike economic impact numbers (which we have estimated to be much higher) where it is possible that substitution may occur, in this case our respondents indicated that they would spend this money outside of California or outside of the US, resulting in a loss to their respective economies.

Table 21: Spending Outside California at non-surveyed Beaches.

Visitor Type	Visitor Type (percent)	Attendance	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
CA Day Trippers	77.5%	156,251,049	\$1,783,865,066	\$1,354,301,154	\$3,138,166,220
CA Vacationers	11.0%	22,177,568	\$354,855,230	\$229,329,817	\$584,185,047
US (not CA) Vacationers	10.0%	20,161,426	\$494,911,106	\$417,086,269	\$911,997,374
Foreign Vacationers	1.5%	3,024,214	\$59,288,604	\$68,532,713	\$127,821,318
Total	100.0%	201,614,256	\$2,692,920,007	\$2,069,249,953	\$4,762,169,960

Table 22: Spending outside California – All California Beaches.

Visitor Type	Attendance	Spending Outside CA, in USA	Spending Outside USA	Total Spending Outside CA
All Surveyed Beaches	30,841,864	\$429,701,445	\$346,010,301	\$775,711,746
Other CA Beaches ²¹	201,614,256	\$2,692,920,007	\$2,069,249,953	\$4,762,169,960
All California Beaches	232,456,120	\$3,122,621,452	\$2,415,260,254	\$5,537,881,706

11. Total Economic Loss due to California’s Beaches

In addition to the direct spending from beach recreation, one can estimate other types of economic impact from beach spending. These estimates were calculated using standard techniques developed by the US government’s *Bureau of Economic Analysis*. The input-output matrices were updated by *IMPLAN*, which provides software for creating these estimates.

Table 23 presents the direct, indirect and induced impacts of lost beach recreation in California (i.e., visitors who indicated in our survey that they would go elsewhere for beach recreation should California beaches cease to exist). The direct effect represents how much

²¹ We assume that the remaining 201,614,256 annual attendance from non-surveyed beaches is distributed among the four visitor types in these proportions: 77.5% day trippers; 11% CA vacationers; 10% US (not CA) vacationers; 1.5% foreign vacationers. Spending is assumed to be the same as the weighted average of the surveyed beaches for each visitor type.

people spend on their trips, and is exactly the same (\$5.5 billion) as reported in the previous section. The induced and indirect effects, often referred to as multiplier effects, represent the fact that spending at the beach, or anywhere else, creates additional spending in the economy. For example, a worker at a beach restaurant will work longer hours and thus have more money to spend as a result of beach spending. The indirect and induced effects estimate this additional spending. **Adding the direct, induced, and indirect effects, we estimate the total loss to California’s economy is \$8.2 billion.**

Table 23: CA Output Impact by Visitor Type (Total Spending Outside CA).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$3,560,882,194	\$660,327,436	\$1,122,953,710	\$193,718,365	\$5,537,881,705
Indirect	\$772,835,827	\$143,314,120	\$243,720,200	\$42,043,654	\$1,201,913,801
Induced	\$983,934,540	\$182,460,110	\$310,291,914	\$53,527,801	\$1,530,214,365
Total	\$5,317,652,561	\$986,101,666	\$1,676,965,824	\$289,289,820	\$8,270,009,871

Spending at the beach also creates employment at the beach and at other facilities used by beach visitors. In addition, one can also calculate indirect and induced effects for employment. Overall we estimate that direct spending creates 44,000 jobs in California. Including the indirect and induced effects, we estimate job creation at just over 72,000 jobs (Table 24). Table 25 presents the labor component of this income, \$2.5 billion, while Table 26 estimates indirect business taxes of \$423 million.

Table 24: CA Employment Impact by Visitor Type (Total Spending Outside CA).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	28,348.8	5,257.0	8,940.0	1,542.2	44,088.0
Indirect	7,093.8	1,315.5	2,237.1	385.9	11,032.3
Induced	11,023.7	2,044.2	3,476.4	599.7	17,144.0
Total	46,466.3	8,616.7	14,653.5	2,527.8	72,264.3

Table 25: CA Labor Income Impact by Visitor Type (Total Spending Outside CA).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$898,176,183	\$166,557,140	\$283,247,302	\$48,862,392	\$1,396,843,017
Indirect	\$312,586,641	\$57,965,841	\$98,576,794	\$17,005,274	\$486,134,550
Induced	\$374,677,516	\$69,479,928	\$118,157,662	\$20,383,128	\$582,698,234
Total	\$1,585,440,340	\$294,002,909	\$499,981,758	\$86,250,794	\$2,465,675,801

Table 26: CA Indirect Bus Taxes Impact by Visitor Type (Total Spending Outside CA).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$176,981,153	\$32,819,256	\$55,812,472	\$9,628,091	\$275,240,972
Indirect	\$31,967,972	\$5,928,118	\$10,081,366	\$1,739,115	\$49,716,571
Induced	\$62,845,122	\$11,653,954	\$19,818,730	\$3,418,887	\$97,736,693
Total	\$271,794,247	\$50,401,328	\$85,712,568	\$14,786,093	\$422,694,236

Table 27 presents the loss to US GNP including the direct, indirect, and induced effects of lost beach recreation. These estimates are lower than those for California because, as explained above, some beach visitors would travel elsewhere in the US if no beaches existed in California. Adding the direct, induced, and indirect effects, **we estimate the total loss to US GNP is just under \$6 billion. If we examine only direct spending, the loss is \$2.4 billion.**

Table 27: US Output Impact by Visitor Type (Total Spending Outside US).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$1,536,727,568	\$257,706,179	\$515,347,552	\$105,478,955	\$2,415,260,254
Indirect	\$852,013,707	\$142,881,017	\$285,726,107	\$58,481,097	\$1,339,101,928
Induced	\$1,400,480,448	\$234,857,809	\$469,656,562	\$96,127,132	\$2,201,121,951
Total	\$3,789,221,723	\$635,445,005	\$1,270,730,221	\$260,087,184	\$5,955,484,133

Spending at the beach also creates employment at the beach and at other facilities used by beach visitors. In addition, one can also calculate indirect and induced effects for employment. Overall we estimate that direct spending creates 15,000 jobs in the US. Including the indirect and induced effects, we estimate job creation at 38,000 jobs (Table 28). Table 29 presents the labor component of this income, \$1.3 billion, while Table 30 estimates indirect business taxes of \$218 million.

Table 28: US Employment Impact By Visitor Type (Total Spending Outside US).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	9,709.7	1,619.8	3,397.0	759.6	15,486.1
Indirect	4,806.0	801.8	1,681.0	376.0	7,664.8
Induced	9,402.8	1,568.6	3,290.0	735.6	14,997.0
Total	23,918.5	3,990.2	8,368.0	1,871.2	38,147.9

Table 29: US Labor Income Impact By Visitor Type (Total Spending Outside US).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$301,527,081	\$50,302,928	\$105,511,850	\$23,590,179	\$480,932,038
Indirect	\$205,013,628	\$34,201,856	\$71,739,385	\$16,039,383	\$326,994,252
Induced	\$321,915,143	\$53,704,212	\$112,646,140	\$25,185,253	\$513,450,748
Total	\$828,455,852	\$138,208,996	\$289,897,375	\$64,814,815	\$1,321,377,038

Table 30: US Indirect Business Tax Impact By Visitor Type (Total Spending Outside US).

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Direct	\$63,304,059	\$10,560,841	\$22,151,669	\$4,952,637	\$100,969,206
Indirect	\$21,575,453	\$3,599,373	\$7,549,790	\$1,687,971	\$34,412,587
Induced	\$51,872,420	\$8,653,732	\$18,151,454	\$4,058,275	\$82,735,881
Total	\$136,751,932	\$22,813,946	\$47,852,913	\$10,698,883	\$218,117,674

12. Tax Losses from Direct, Indirect and Induced Spending

Table 31 presents the Tax Revenue Loss for the State of California from lost income and sales tax revenues as well as estimated losses in tax revenues to cities and counties (local taxes). **We estimate that the State would lose \$509 million in direct revenues from the loss in spending in-state when visitors travel outside the state.** Of this, \$328 million represents California day-trippers, \$61 million from California vacationers, \$103 million from US visitors residing outside of California, and \$18 million from foreign visitors.

Table 31: Losses on California Tax Receipts from Direct Spending.

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Est. Lost CA State Income Tax ¹	\$111,424,629	\$20,662,503	\$35,138,680	\$6,061,699	\$173,287,511
Est. Lost CA Sales Tax ²	\$112,877,692	\$20,931,958	\$35,596,916	\$6,140,748	\$175,547,314
Est. Lost CA Local Tax ³	\$103,265,584	\$19,149,496	\$32,565,658	\$5,617,833	\$160,598,569
Total	\$327,567,904	\$60,743,957	\$103,301,253	\$17,820,280	\$509,433,395

1. Lost income tax revenue calculated using income tax to GSP ratio of .031.
2. Lost sales tax revenue calculated using sales tax to GSP ratio of 0.032
3. Lost local tax revenue calculated using sales tax to GSP ratio of 0.029

If we include all effects (indirect and induced), the loss to the State is significantly larger, increasing to \$761 million in total losses: \$489 million from California day-trippers, \$91 million from California vacationers, \$154 million from US visitors residing outside of California, and \$27 million from foreign visitors (Table 32).

Table 32: Impact of Direct, Indirect and Induced Beach Expenditure Losses on California Tax Receipts.

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Est. Lost CA State Income Tax ¹	\$166,396,255	\$30,856,402	\$52,474,439	\$9,052,254	\$258,779,350
Est. Lost CA Sales Tax ²	\$168,566,191	\$31,258,793	\$53,158,746	\$9,170,303	\$262,154,033
Est. Lost CA Local Tax ³	\$154,211,924	\$28,596,948	\$48,632,009	\$8,389,405	\$239,830,286
Est. Lost CA State and Local Tax	\$489,174,370	\$90,712,143	\$154,265,193	\$26,611,962	\$760,763,668

1. Lost income tax revenue calculated using income tax to GSP ratio of .031.
2. Lost sales tax revenue calculated using sales tax to GSP ratio of 0.032
3. Lost local tax revenue calculated using sales tax to GSP ratio of 0.029

Table 33 presents the loss in Tax Revenue for the Federal government from direct lost income and sales tax revenue. **We estimate that the US would lose \$299 million in revenues from the loss in spending when visitors travel outside the US.** Of this, \$190 million represents California day-trippers, \$32 million from California vacationers, \$64 million from US visitors residing outside of California, and \$13 million from foreign visitors.

Table 33: Impact of Direct Beach Expenditure Losses on US Federal Tax Receipts.

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Est. Lost Federal Income Tax ¹	\$148,845,159	\$24,961,039	\$49,915,802	\$10,216,536	\$233,938,535
Est. Lost Other Federal Tax ²	\$41,491,644	\$6,958,067	\$13,914,384	\$2,847,932	\$65,212,027
Total Est. Lost Federal Tax	\$190,336,803	\$31,919,106	\$63,830,185	\$13,064,467	\$299,150,562

1. Lost income tax revenue calculated using income tax to GDP ratio of 0.097.

2. All other Federal taxes includes corporate income tax and excise taxes, but does not include social security taxes. Losses calculated using ratio of all other federal taxes to GDP of 0.027.

If we include all effects (indirect and induced), the loss to the U.S. is significantly larger, increasing to \$738 million in total losses: \$469 million from California day trippers, \$79 million from California vacationers, \$157 million from US visitors residing outside of California, and \$32 million from foreign visitors (Table 34).

Table 34: Impact of Direct, Indirect and Induced Beach Expenditure Losses on Federal Tax Receipts.

	CA Day-Trippers	CA Vacationers	US (not CA) Vacationers	Foreign Vacationers	Total
Est. Lost Federal Income Tax ¹	\$367,018,411	\$61,548,263	\$123,081,049	\$25,191,660	\$576,839,383
Est. Lost Other Federal Tax ²	\$102,308,987	\$17,157,015	\$34,309,716	\$7,022,354	\$160,798,072
Total Est. Lost Federal Tax	\$469,327,397	\$78,705,278	\$157,390,765	\$32,214,014	\$737,637,455

1. Lost income tax revenue calculated using income tax to GDP ratio of 0.097.

2. All other Federal taxes includes corporate income tax and excise taxes, but does not include social security taxes. Losses calculated using ratio of all other federal taxes to GDP of 0.027.

The California Department of Boating and Waterways estimates that the total cost of shore protection programs designed to preserve beaches will be \$12-18 million per year over the next ten years. This represents 4-6% of the direct Federal tax loss and about 2% of the total loss to the Federal government.

13. Results from our Survey at Non-Beach Locations

One obvious limitation of surveying people at the beach is that the sample one obtains tends to include those who go to the beach over those who do not. Since we have aggregated the sample statistics over the population of visitor days at the beach in the State, this potential (selectivity) bias is not an issue. However, we also wanted to have an idea of the importance of beaches to tourists in general. To get an estimate, we surveyed tourists at two non-beach

locations, Old Town San Diego State Historic Park in San Diego, and at the LA Theater in Los Angeles. Respondents filled out the same questionnaire as beach visitors.

Table 35 presents the average number of days per year tourists at these locations visited California beaches, the length of the current trip, and the proportion of the current trip spent at the beach. Non-beach respondents spent a smaller percentage of their vacation at the beach than did beach vacationers (see Table 9), nevertheless beaches were still a significant component of these visitors vacation time. **Perhaps most significant, foreign visitors indicated that they would spend just under 30% of their vacation days at the beach—indicating that the beach is a significant destination for foreign visitors.**²²

Table 35: Days at the Beach and on Vacation (Non-Beach Locations).

	Days per year at CA beaches	Days away from home this trip *	Days at the beach this trip *	Percent of trip at the beach
CA Day Trippers	17.28			
CA Vacationers	12.00	5.34	2.15	40.26%
US (not CA) Vacationers	3.95	9.75	2.58	26.46%
Foreign Vacationers	5.99	11.10	3.27	29.46%

* Vacationers only.

Table 36 presents results from a more qualitative question, “How important is the beach to your trip?” A significant number of respondents surveyed away from the beach, generally 30-40%, indicated that the beach was an important factor in their trip and that they would go less often if no beaches existed. Further, roughly 10% of respondents indicated that without beaches in California, they would scrap their current vacation plans. **Over one-third of foreign visitors indicated that the beach was important.**

Table 36: How important is the beach to your trip? (Non-Beach Locations).

	Beach important – No beach no trip	Might not come, or would stay less often.	Would still come, but like the beach.	Can take beach or leave it – would not affect decision.
CA Vacationers	13.43%	28.36%	37.31%	20.90%
US (not CA) Vacationers	9.64%	15.66%	39.76%	34.94%
Foreign Vacationers	11.63%	23.26%	46.51%	18.60%

Table 37 compares the responses of those surveyed at the beach to those surveyed away from the beach when asked: “If no beaches existed in California there would still be adequate outdoor recreation for my household?” 25% of those surveyed away from the beach indicated that without beaches, there would not be adequate recreational opportunity in the State.

²² As one would expect, this number is somewhat lower than the percentage of days that foreign visitors at the beach indicated that they would spend at the beach (37%), however it is not that much less.

Table 37: If no beaches existed in California there would still be adequate outdoor recreation for my household.

	Day-trippers at Beach Locations	Day-trippers at Non-Beach Locations
Agree Strongly	14.44%	18.98%
-----	17.18%	29.20%
Neutral	26.01%	26.28%
-----	20.27%	15.33%
Disagree Strongly	22.11%	10.22%

To place both beach recreation and non-beach tourism in perspective, we present data on the overall volume of tourism in California, and in Southern California coastal counties.²³ The California Division of Tourism estimates that tourists made 223 million person-trips for leisure travel in California in 2001, staying an average of 1.4 nights per trip. Table 26 presents data on the volume of tourism for the five coastal counties from Santa Barbara to San Diego (excluding business travelers).

Table 39: Tourism in Southern California Counties (millions of person-trips).

	CA Residents	Out-of-State	Foreign²⁴	Total
Santa Barbara	5.976	1.224	*	7.2
Ventura	2.356	0.744	*	3.1
Los Angeles	16.995	13.905	3.4	34.3
Orange	12.66	8.44	*	21.1
San Diego	15.989	11.111	0.8	27.9
Total	53.976	35.424	*	93.6

* not reported.

The Division of Tourism's figures are not directly comparable to attendance figures since they are based on person-trips of multiple days' duration. The criteria these figures are based on is substantially different from that used in our survey of beach recreation. For instance, the Los Angeles Convention and Visitors Bureau does not count local day-trippers who live within fifty miles of Los Angeles in its visitor counts, while we found that a large part of beach attendance is made up of locals who visit the beach many times over the course of a year. We present the

²³ California Division of Tourism website:

http://www.visitcalifornia.com/state/tourism/tour_htmldisplay.jsp?iOID=23566&sFilePath=/tourism/detail/T_D_BC_RS_Visitor_Stats.html&sTableName=TOURISM_NAV&BV_SessionID=@@@@0181788613.1049135562@@@&BV_EngineID=eadcglfileebemgcfkmchcog.0&PrimaryCat=Travel+Industry&SecondCat=Research+%26+Statistics&sTOURHash

²⁴ Foreign travelers figures taken from Los Angeles Convention and Visitors Bureau web site, http://www.lacvb.com/poe02/poe02fst_vs.html, and from San Diego Convention and Visitors Bureau web site, <http://www.sandiego.org/resrev.asp>.

figures in Table 39 only to give a very general picture of tourism in the respective counties, with an emphasis on overnight visitors.

What these figures do indicate is that tourism is important to California. Given the importance that tourists in our sample attach to the beach, it is clear that tens of millions of visits per year depend upon the existence of beaches.

14. Conclusion

In previous studies we have examined the economic impact of beach tourism in the State of California. This study has a more narrow focus—to identify the economic loss to the State of California and to the US economy should California’s beaches cease to exist. We found that a significant number of beach visitors would, in fact, travel outside of California and outside of the US if there were no beaches in California. Most significantly, many day trippers to California beaches indicated that they would spend their recreation money outside of the State or even outside of the US if California had no beaches.

Our analysis does not include the impact of foreign investment in California real estate on the shore and near beaches. We expect that a significant loss to the US economy would also occur if this investment declined but we have not attempted to quantify it in this study. To the extent that foreign investment is significant, our estimates understate the loss to the US economy.

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Appendix 1: Auxiliary Tables from Survey

Table A1. Summary statistics for all visitors at selected beaches

	CARPINTERIA			DEL MAR/ENCINITAS/SB*		
	Mean	Median	StdDev	Mean	Median	StdDev
Number in household group	4.20	4	2.9874	2.88	2	1.9816
Under 18	1.99	2	2.2060	1.11	0	1.5027
Days per year at California beaches	21.99	12.5	28.9447	38.59	25	36.8147
Additional days/year in other states	5.08	4.5	5.720	8.42	5.5	8.321
Additional days/year abroad	2.77	0	3.995	5.96	3	8.110
# traveling in other states or abroad	3.74	4	2.1301	2.95	2	1.6104
HH Spending per day in other states	\$212.59	\$138.00	159.58	\$223.60	\$213.00	178.50
HH Spending per day abroad	\$237.87	\$213.00	189.37	\$255.10	\$213.00	240.99
Days away from home this trip *	7.29	6	4.940	9.79	6	7.251
Days at the beach this trip*	5.46	6	3.442	6.97	6	6.026
Gas & Auto	\$15.65	\$10.00	20.503	\$10.58	\$5.00	17.824
Food from Stores and Take Out	\$32.67	\$20.00	40.295	\$17.96	\$10.00	23.663
Beer, Wine, and Liquor	\$8.89	\$0.00	17.539	\$6.73	\$0.00	12.202
Sit-Down Restaurants	\$23.25	\$10.00	35.126	\$24.45	\$5.00	35.536
Parking	\$1.89	\$0.00	5.568	\$1.86	\$0.00	4.400
Sundries	\$7.91	\$5.00	12.170	\$4.78	\$1.75	7.930
Lodging	\$50.11	\$12.00	82.555	\$36.03	\$0.00	72.968
Age of survey respondent	39.53	40.00	12.814	39.46	40.00	13.368
Number in household	4.05	4	1.806	3.38	3	1.713
Household Income	\$106,122	\$87,500	56852	\$114,874	\$125,000	61156
Agree adequate recreation w/o beaches	3.36	3	1.326	3.35	4	1.368

Table A1 (cont.)

	HUNTINGTOH BEACH			MISSION BEACH		
	Mean	Median	StdDev	Mean	Median	StdDev
Number in household group	2.74	2	2.067	3.06	2	2.508
Under 18	0.97	0	1.383	0.94	0	1.562
Days per year at California beaches	25.88	12.5	31.113	28.84	9	38.468
Additional days/year in other states	4.74	2	6.164	5.72	4.033	7.211
Additional days/year abroad	2.79	2	4.141	4.12	2	6.668
# traveling in other states or abroad	2.95	3	1.538	2.71	2	1.576
HH Spending per day in other states	\$176.09	\$138.00	164.027	\$183.44	\$138.00	158.435
HH Spending per day abroad	\$199.52	\$138.00	190.776	\$197.97	\$138.00	179.788
Days away from home this trip *	9.69	6	7.542	8.09	6	6.139
Days at the beach this trip*	4.49	3.5	5.016	5.53	3.5	4.606
Gas & Auto	\$13.15	\$10.00	18.056	\$17.30	\$7.00	29.343
Food from Stores and Take Out	\$18.57	\$10.00	26.255	\$27.31	\$20.00	31.866
Beer, Wine, and Liquor	\$6.62	\$0.00	17.402	\$15.41	\$10.00	20.878
Sit-Down Restaurants	\$20.50	\$0.00	42.270	\$34.67	\$20.00	42.539
Parking	\$4.09	\$3.00	4.692	\$1.57	\$0.00	3.618
Sundries	\$5.58	\$3.00	8.225	\$6.88	\$3.00	11.155
Lodging	\$19.06	\$0.00	57.649	\$62.34	\$0.00	95.735
Age of survey respondent	31.75	30	11.505	33.85	30	12.036
Number in household	3.79	4	1.691	3.25	3	1.685
Household Income	\$86,129	\$87,500	53,318	\$83,438	\$62,500	56,801
Agree adequate recreation w/o beaches	3.09	3	1.231	3.22	3	1.279

Table A1 (cont.)

	SAN CLEMENTE			SANTA BARBARA		
	Mean	Median	StdDev	Mean	Median	StdDev
Number in household group	3.43	3	2.309	2.78	2	2.323
Under 18	1.66	2	1.656	0.78	0	1.523
Days per year at California beaches	31.66	18	36.158	34.01	18	39.578
Additional days/year in other states	6.77	5.5	8.239	7.49	5.5	9.798
Additional days/year abroad	3.20	2	4.245	4.72	2	6.699
# traveling in other states or abroad	3.49	4	1.699	2.93	2	1.873
HH Spending per day in other states	\$224.48	\$213.00	166.134	\$196.61	\$138.00	171.211
HH Spending per day abroad	\$238.19	\$213.00	189.604	\$215.34	\$138.00	182.373
Days away from home this trip *	8.13	6	4.958	8.54	6	7.672
Days at the beach this trip*	5.85	4.75	4.454	4.56	3.5	4.691
Gas & Auto	\$14.24	\$6.75	18.878	\$15.35	\$10.00	21.171
Food from Stores and Take Out	\$23.12	\$15.00	27.186	\$17.17	\$10.00	18.949
Beer, Wine, and Liquor	\$6.32	\$0.00	12.977	\$8.71	\$0.00	15.517
Sit-Down Restaurants	\$26.59	\$10.00	34.919	\$30.37	\$15.00	39.405
Parking	\$3.47	\$3.00	4.125	\$2.82	\$2.00	4.140
Sundries	\$5.30	\$3.00	6.589	\$5.79	\$2.00	8.799
Lodging	\$46.01	\$0.00	90.184	\$39.74	\$0.00	73.730
Age of survey respondent	39.36	40	11.795	31.82	30	12.038
Number in household	4.20	4	1.908	3.36	3	1.638
Household Income	\$110,872	\$125,000	55,699	\$87,447	\$87,500	64,783
Agree adequate recreation w/o beaches	3.37	3	1.184	3.51	4	1.295

Table A1 (cont.)

	VENICE BEACH			NON-BEACH LOCATIONS		
	Mean	Median	StdDev	Mean	Median	StdDev
Number in household group	2.36	2	1.813	2.60	2	1.990
Under 18	0.66	0	1.294	0.72	0	1.481
Days per year at California beaches	27.77	9	37.900	11.66	5.5	18.808
Additional days/year in other states	5.34	2	7.691	2.94	0	5.452
Additional days/year abroad	3.97	2	5.514	2.36	0	8.260
# traveling in other states or abroad	2.54	2	1.625	2.76	2	1.576
HH Spending per day in other states	\$157.63	\$138.00	157.554	\$177.08	\$138.00	175.261
HH Spending per day abroad	\$201.08	\$138.00	200.451	\$202.24	\$138.00	198.405
Days away from home this trip *	13.19	12.5	8.394	8.45	6	6.424
Days at the beach this trip*	5.98	3.5	6.006	2.63	2	2.564
Gas & Auto	\$17.91	\$10.00	29.130	\$23.52	\$15.00	30.514
Food from Stores and Take Out	\$21.60	\$15.00	25.760	\$21.29	\$15.00	23.444
Beer, Wine, and Liquor	\$10.02	\$1.00	19.190	\$7.53	\$0.00	13.594
Sit-Down Restaurants	\$26.38	\$20.00	38.310	\$37.34	\$30.00	42.909
Parking	\$4.48	\$3.00	5.637	\$2.57	\$0.00	4.769
Sundries	\$5.23	\$2.00	8.207	\$3.83	\$0.00	7.331
Lodging	\$49.62	\$25.00	68.574	\$61.38	\$0.00	82.158
Age of survey respondent	30.49	30	10.846	42.82	40	15.435
Number in household	3.29	3	1.934	3.33	3	1.876
Household Income	\$76,284	\$62,500	58,559	\$79,293	\$62,500	51,842
Agree adequate recreation w/o beaches	3.12	3	1.273	2.81	3	1.211

Table A2a. Daily Spending (per individual) at CA beaches by CA Day Trippers.

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
Carpinteria	\$3.05	\$4.58	\$1.17	\$2.86	\$0.29	\$1.78	\$0.00	\$13.73
Del Mar/Encinitas/SB*	\$2.49	\$4.12	\$1.91	\$4.03	\$0.60	\$1.61	\$0.00	\$14.75
Huntington Beach	\$4.13	\$6.19	\$2.42	\$5.60	\$1.38	\$2.19	\$0.00	\$21.92
Mission Beach	\$2.93	\$6.18	\$4.73	\$5.73	\$0.41	\$1.82	\$0.00	\$21.80
San Clemente	\$3.64	\$4.89	\$1.00	\$4.54	\$1.09	\$1.22	\$0.00	\$16.38
Santa Barbara	\$3.43	\$4.42	\$1.44	\$5.37	\$0.80	\$1.89	\$0.00	\$17.34
Venice Beach	\$5.22	\$6.82	\$3.13	\$6.44	\$1.68	\$2.09	\$0.00	\$25.38

*Average for overnight visitors only

Table A2b. Daily spending (per individual) at CA beaches by CA vacationers.

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
Carpinteria	\$3.69	\$8.68	\$2.30	\$6.32	\$0.52	\$1.71	\$15.91	\$39.13
Del Mar/Encinitas/SB*	\$4.36	\$9.35	\$3.03	\$12.04	\$0.34	\$1.49	\$18.78	\$49.39
Huntington Beach	\$4.35	\$6.36	\$2.78	\$9.52	\$1.79	\$1.56	\$9.84	\$36.20
Mission Beach	\$3.80	\$11.29	\$4.63	\$14.51	\$0.61	\$2.21	\$34.89	\$71.94
San Clemente	\$3.79	\$7.26	\$2.14	\$8.89	\$0.87	\$1.75	\$25.51	\$50.20
Santa Barbara	\$5.95	\$9.45	\$4.05	\$17.33	\$1.24	\$1.90	\$34.14	\$74.07
Venice Beach	\$8.08	\$10.75	\$5.09	\$13.33	\$1.89	\$2.07	\$23.70	\$64.91

*Average for overnight visitors only

Table A2c. Daily spending (per individual) at CA beaches by US vacationers (not CA).

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
Carpinteria	\$3.90	\$10.42	\$3.38	\$6.94	\$0.42	\$2.81	\$15.67	\$43.54
Del Mar/Encinitas/SB*	\$6.06	\$7.74	\$2.47	\$14.23	\$1.01	\$1.93	\$29.35	\$62.80
Huntington Beach	\$8.47	\$9.76	\$2.61	\$14.63	\$1.88	\$1.72	\$16.78	\$55.83
Mission Beach	\$8.03	\$10.33	\$5.01	\$14.28	\$0.49	\$2.53	\$30.45	\$71.11
San Clemente	\$5.27	\$9.45	\$2.62	\$11.00	\$0.95	\$1.71	\$18.43	\$49.42
Santa Barbara	\$8.31	\$8.64	\$5.58	\$20.53	\$1.45	\$2.64	\$31.58	\$78.73
Venice Beach	\$7.45	\$11.90	\$5.22	\$16.32	\$2.55	\$2.42	\$17.96	\$63.81

*Average for overnight visitors only

Table A2d. Daily spending (per individual) at CA beaches by foreign vacationers.

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
Carpinteria	\$20.77	\$11.99	\$2.75	\$17.01	\$1.04	\$3.18	\$21.32	\$78.07
Del Mar/Encinitas/SB*	\$3.41	\$6.34	\$2.93	\$15.37	\$0.49	\$0.98	\$14.63	\$44.15
Huntington Beach	\$3.70	\$8.20	\$2.87	\$7.84	\$1.27	\$3.52	\$12.99	\$40.39
Mission Beach	\$10.04	\$9.59	\$6.74	\$15.70	\$0.71	\$3.34	\$25.28	\$71.41
San Clemente	\$5.71	\$4.76	\$3.17	\$10.79	\$1.44	\$1.59	\$10.16	\$37.63
Santa Barbara	\$12.37	\$6.81	\$5.00	\$12.37	\$1.20	\$2.52	\$24.19	\$64.46
Venice Beach	\$12.76	\$8.92	\$5.13	\$12.03	\$1.74	\$2.26	\$21.32	\$64.16

*Average for overnight visitors only

Table A2e. Daily spending (per individual) at CA beaches for all visitors.

	Gas & Auto	Food from Stores and Take Out	Beer, Wine, and Liquor	Sit-Down Restaurants	Parking	Sundries	Lodging	Total Daily Spending
Carpinteria	\$3.73	\$7.78	\$2.12	\$5.53	\$0.45	\$1.88	\$11.93	\$33.41
Del Mar/Encinitas/SB*	\$3.68	\$6.24	\$2.34	\$8.50	\$0.65	\$1.66	\$12.53	\$35.60
Huntington Beach	\$4.80	\$6.78	\$2.42	\$7.49	\$1.49	\$2.04	\$6.96	\$31.99
Mission Beach	\$5.65	\$8.92	\$5.03	\$11.33	\$0.51	\$2.25	\$20.36	\$54.05
San Clemente	\$4.15	\$6.75	\$1.84	\$7.76	\$1.01	\$1.54	\$13.42	\$36.48
Santa Barbara	\$5.53	\$6.19	\$3.14	\$10.94	\$1.02	\$2.09	\$14.32	\$43.22
Venice Beach	\$7.60	\$9.16	\$4.25	\$11.19	\$1.90	\$2.22	\$21.06	\$57.38

*Average for overnight visitors only

Table A3a. Suppose there were no beaches in California (CA Day Trippers).

CA (Day Trippers)	Additional days/year in other states	*Spending per day in other states	Annual average spending in other states	Additional days/year abroad	*Spending per day abroad	Annual average spending abroad
Carpinteria	5.43	\$62.14	\$337.48	2.27	\$75.18	\$170.79
Del Mar/Encinitas/SB*	10.00	\$75.17	\$751.72	7.39	\$91.92	\$679.31
Huntington Beach	4.48	\$58.23	\$260.58	2.52	\$72.58	\$183.07
Mission Beach	7.97	\$59.49	\$474.22	6.26	\$75.62	\$473.31
San Clemente	8.15	\$67.69	\$551.81	3.01	\$74.70	\$225.21
Santa Barbara	10.08	\$69.05	\$695.76	6.08	\$74.36	\$452.17
Venice Beach	7.97	\$72.05	\$573.88	4.99	\$88.46	\$441.29
Surveyed Beaches (wtd. avg.)			\$475.37			\$368.76

*Average household spending per day divided by average number of individuals traveling out of state or abroad.

Table A3b. Suppose there were no beaches in California (CA Vacationers).

CA (Vacationers)	Additional days/year in other states	*Spending per day in other states	Annual average spending in other states	Additional days/year abroad	*Spending per day abroad	Annual average spending abroad
Carpinteria	5.24	\$52.43	\$274.69	3.12	\$54.09	\$168.57
Del Mar/Encinitas/SB*	6.09	\$81.53	\$496.48	3.66	\$78.97	\$288.92
Huntington Beach	6.46	\$47.62	\$307.77	3.04	\$43.13	\$131.00
Mission Beach	6.55	\$76.87	\$503.27	2.59	\$73.44	\$190.14
San Clemente	5.38	\$60.24	\$324.00	3.84	\$58.16	\$223.05
Santa Barbara	5.72	\$63.12	\$361.11	3.37	\$74.91	\$252.17
Venice Beach	4.12	\$43.01	\$177.26	5.12	\$59.02	\$302.32
Surveyed Beaches (wtd. avg.)			\$324.66			\$218.15

*Average household spending per day divided by average number of individuals traveling out of state or abroad.

Table A3c. Suppose there were no beaches in California (US Vacationers – not CA).

US Vacationers - not CA	Additional days/year in other states	*Spending per day in other states	Annual average spending in other states	Additional days/year abroad	*Spending per day abroad	Annual average spending abroad
Carpinteria	3.95	\$62.65	\$247.26	2.90	\$76.20	\$221.19
Del Mar/Encinitas/SB*	4.10	\$68.64	\$281.64	2.49	\$70.34	\$175.01
Huntington Beach	4.45	\$64.24	\$286.15	3.45	\$68.82	\$237.58
Mission Beach	3.24	\$75.44	\$244.48	3.11	\$75.32	\$234.46
San Clemente	4.27	\$59.91	\$256.00	2.86	\$60.10	\$171.90
Santa Barbara	2.93	\$83.09	\$243.06	2.31	\$87.59	\$202.39
Venice Beach	3.10	\$63.62	\$197.01	2.32	\$84.71	\$196.66
Surveyed Beaches (wtd. avg.)			\$252.57			\$210.53

*Average household spending per day divided by average number of individuals traveling out of state or abroad.

Table A3d. Suppose there were no beaches in California (Foreign Vacationers).

Foreign Vacationers	Additional days/year in other states	*Spending per day in other states	Annual average spending in other states	Additional days/year abroad	*Spending per day abroad	Annual average spending abroad
Carpinteria	2.42	\$65.33	\$157.89	3.33	\$76.00	\$253.33
Del Mar/Encinitas/SB*	1.67	\$57.86	\$96.76	3.59	\$66.48	\$238.89
Huntington Beach	2.38	\$82.75	\$197.09	3.19	\$43.81	\$139.73
Mission Beach	2.87	\$61.16	\$175.78	4.55	\$59.79	\$272.28
San Clemente	1.56	\$38.85	\$60.45	1.19	\$43.20	\$51.58
Santa Barbara	4.62	\$58.65	\$271.07	1.78	\$60.41	\$107.72
Venice Beach	2.41	\$45.51	\$109.64	2.61	\$61.01	\$159.37
Surveyed Beaches (wtd. avg.)			\$145.06			\$176.21

*Average household spending per day divided by average number of individuals traveling out of state or abroad.

Table A4a. Spending outside California as a result of the loss of California Beaches (CA Day Trippers).

	Spending outside CA in USA	Spending outside USA	Total Spending outside CA
Carpinteria	\$10,603,384	\$5,366,161	\$15,969,545
Del			
Mar/Encinitas/SB*	\$58,070,161	\$52,476,726	\$110,546,887
Huntington Beach	\$71,124,746	\$49,969,572	\$121,094,318
Mission Beach	\$18,183,924	\$18,148,763	\$36,332,687
San Clemente	\$17,803,936	\$7,266,304	\$25,070,240
Santa Barbara	\$3,369,779	\$2,189,984	\$5,559,763
Venice Beach	\$61,133,630	\$47,008,905	\$108,142,534
Surveyed Beaches	\$240,289,560	\$182,426,414	\$422,715,974

Table A4b. Spending outside California as a result of the loss of California Beaches (CA Overnight Visitors).

	Spending outside CA in USA	Spending outside USA	Total Spending outside CA
Carpinteria	\$10,569,880	\$6,486,701	\$17,056,581
Del			
Mar/Encinitas/SB*	\$12,983,649	\$7,555,770	\$20,539,419
Huntington Beach	\$7,306,383	\$3,109,930	\$10,416,313
Mission Beach	\$8,891,610	\$3,359,341	\$12,250,951
San Clemente	\$4,893,402	\$3,368,724	\$8,262,126
Santa Barbara	\$821,368	\$573,576	\$1,394,943
Venice Beach	\$2,299,736	\$3,922,321	\$6,222,057
Surveyed Beaches	\$47,766,027	\$28,376,362	\$76,142,389

Table A4c. Spending outside California as a result of the loss of California Beaches (US Overnight Visitors).

	Spending outside CA, in USA	Spending outside USA	Total Spending outside CA
Carpinteria	\$4,273,269	\$3,822,749	\$8,096,018
Del			
Mar/Encinitas/SB*	\$13,689,644	\$8,506,834	\$22,196,479
Huntington Beach	\$33,405,182	\$27,735,510	\$61,140,692
Mission Beach	\$18,322,332	\$17,571,454	\$35,893,786
San Clemente	\$5,820,781	\$3,908,423	\$9,729,204
Santa Barbara	\$2,424,443	\$2,018,837	\$4,443,280
Venice Beach	\$34,759,402	\$34,697,475	\$69,456,878
Surveyed Beaches	\$112,695,053	\$98,261,283	\$210,956,336

Table A4d. Spending outside California as a result of the loss of California Beaches (Foreign Visitors).

	Spending outside CA, in USA	Spending outside USA	Total Spending outside CA
Carpinteria	\$479,451	\$769,281	\$1,248,733
Del Mar/Encinitas/SB*	\$2,218,015	\$5,476,248	\$7,694,263
Huntington Beach	\$8,794,556	\$6,235,278	\$15,029,834
Mission Beach	\$2,297,116	\$3,558,049	\$5,855,165
San Clemente	\$348,733	\$297,549	\$646,283
Santa Barbara	\$873,966	\$347,304	\$1,221,271
Venice Beach	\$13,938,967	\$20,262,532	\$34,201,499
Surveyed Beaches	\$28,950,805	\$36,946,242	\$65,897,047

Appendix 2: Survey Protocol

Surveyors introduced themselves by stating that they were conducting a survey for the State of California and their response would be appreciated.

All surveyors were trained on-site and supervised. The following protocol was given to all surveyors:

- 1) Since you are on the beach dress accordingly, but try to look neat, friendly and professional nevertheless. If someone asks “do I get anything for the survey” you can offer them a mechanical pencil and smile.
- 2) Wear SUNSCREEN and bring plenty of water.
- 3) The survey should be RANDOM and should be a representative sample. To ensure this, you should try to cover the entire beach in a day and zigzag up and down the beach, choosing every nth party.
 - a) Your sample should also reflect attendance patterns—i.e., the number of people in the sample surveyed on weekends should be in line with attendance on weekends. As a rule of thumb about 40% of beach attendance occurs on Saturday and Sunday with heavy attendance on Friday as well, but this varies by beach.
 - b) Make sure you cover all parts of the beach in accordance to attendance.
 - c) Keep in mind the sample group is a **household**. Often one group will contain several households.
- 4) Before or right after surveying make sure you fill out the top part of the survey (where it says “to be completed by surveyor”) with the time and date as well as who you are (nickname or initials are fine) and use a consistent number system so we can refer to each survey if we need to. The best way is to number the surveys consecutively for each beach (e.g., for Santa Barbara, 1, 2, ...255...). That way we will have a good count of how many are in the sample.
 - a) It is possible to have several people filling out surveys at the same time; just make sure you are available for questions.
 - b) Never cajole respondents—they are doing us a huge favor, but politely reminding them is fine.
 - c) Typically the last part (income, etc.) is the most sensitive. If the respondent seems reticent, don’t look over his or her shoulder.
 - d) Some people like to converse, some will fill it out quickly—every respondent has a different style.

Often people will want to know more about the survey. You should always mention the university and the government, but don’t say things like “this will help the beach” since that could bias responses. You can say this will help the state government. Make intelligent decisions.

Appendix 3: Survey Instrument