

Economic Impact of Zoo and Aquarium Operations And Construction Spending

By

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Executive Summary

The objective of this research is to calculate the economic impacts of the annual spending of all Association of Zoos and Aquariums member organizations at the state and national level. The annual operating and capital outlays of zoos and aquariums generate important economic benefits within their respective local and state economies and, in aggregate, generate important economic benefits nationally. These economic impacts include: contributions to the local, state and national economies that enlarge their respective values of goods and services they produce (i.e., gross domestic product), new personal earnings (salaries and wages) that accrue to workers residing in the host jurisdictions, and jobs that are supported across the breadth of the local, state and national economies as the initial direct spending by the zoos and aquariums is re-spent and re-cycled in the form of indirect and induced business activities and payroll disbursements.

In 2007, AZA member zoos and aquariums spent \$2.98 billion. This spending was divided between operating outlays (these recur annually) and capital outlays (these vary annually according to construction scheduling). Excluded from this direct spending are the outlays of concessionaires that independently provide on-site retail and food services. Their operating outlays would add to the total economic impacts of their respective zoos and aquariums.

In 2007, AZA member organizations spent \$2.34 billion for operations and \$643 million for capital projects. AZA member zoos and aquariums in the U.S. spent a combined total of \$2.62 billion for operations and capital outlays while its international members spent \$363.3 million.

The economic impacts of this direct spending in 2007 are shown in the following table. The direct outlays by U.S. member zoos and aquariums of \$2.62 billion contributed a total of \$7.6 billion to U.S. GDP reflecting an aggregate output multiplier of 2.9, generated \$2.4 billion in new personal earnings to the benefit of workers residing in the U.S. and supported 74,332 jobs across all sectors of the U. S. economy.

AZA's eleven international member organizations reported direct annual operating and capital outlays totaling \$364 million. It is estimated that this spending added \$864.3 million in combined total benefit to these organization's host economies, generated \$260.6 million in new personal earnings to workers residing in their host jurisdictions (in addition to direct payroll outlays) and supported 8,000 jobs across the breadth of their respective economies.

Summary of Economic Impacts Generated By
AZA Member Zoos and Aquariums, 2007

Sources	Direct Outlays	Total Output(1)	Personal Earnings(2)	Jobs Supported(3)
Total US	\$2.620	\$7.607	\$2.397	74,332
International	\$0.364	\$0.846	\$0.261	8,000
Canadian	0.142	0.326	0.102	3,233
Mexican	0.012	0.028	0.009	276
Other	0.210	0.491	0.150	4,491
Total Impacts	\$2.984	\$8.453	\$2.658	82,332

Source: Association of Zoos and Aquariums; GMU Center for Regional Analysis. Notes: (1) the total value of goods and services generated directly and indirectly as a result of annual operating and capital outlays by zoos and aquariums in the US in 2007; (2) the additional earnings generated within the U.S. from outlays for zoos and aquariums in 2007 for operations and capital projects; (3) the additional new jobs supported nationwide by the spending and re-spending of outlays associated with the operation and capital outlays of zoos and aquariums in 2007.

In summary, these analyses have confirmed that the economic impacts of annual spending by AZA's member zoos and aquariums have benefits that far exceed their initial annual operating and capital outlays and constitute an important source of new income and jobs that extend broadly across the effected economies as this initial spending is recycled and re-spent by businesses and residents in the host jurisdictions.

Introduction

The objective of this research is to calculate the economic impacts of the annual spending of all Association of Zoos and Aquariums member organizations at the state and national level. The annual operating and capital outlays of zoos and aquariums generate important economic benefits within their respective local and state economies and, in aggregate, generate important economic benefits nationally. Excluded from this direct spending are the outlays of concessionaires that independently provide on-site retail and food services. Their operating outlays would add to the total economic impacts of their respective zoos and aquariums.

The total economic impact of the direct spending by AZA member organizations is the sum of these initial outlays plus their subsequent effects on their host economies as these dollars are re-spent multiple times for the purchases of goods and services provided locally. The aggregate value of this direct and indirect spending by U.S. zoos and aquariums can be calculated by applying appropriate economic multipliers calculated by the U.S. Bureau of Economic Analysis for each state and the nation as a whole. Additionally, the resultant generation of new personal earnings (that is, earnings accruing to workers residing within the jurisdiction of analysis) and the number of jobs supported elsewhere within the economy (not necessarily only local jobs) can be calculated by applying the respective state and national multipliers. For international member organizations representative multipliers have been constructed to estimate their economic impacts on their respective jurisdictions.

The result of these analyses will be the economic impacts that are generated by one year's spending by AZA's member organizations. This spending and its cumulative impacts will represent the economic impacts generated in 2007. As the operating outlays associated with the zoos and aquariums recur annually, these impacts will continue each year and will likely grow in response to increases in operation outlays as prices rise and services are expanded. The economic impacts resulting from capital outlays in 2007 will vary in subsequent years in response to changes in the value of capital programs. The results reported herein for the capital component of spending outlays by zoos and aquariums are illustrative of the magnitude and related significance of construction outlays. These capital outlays represent a different mix of economic activities than is associated with spending for operations.

This report is divided into three major sections in addition to the executive summary. The first section focuses on measuring the economic impacts that result from the direct spending by AZA member zoos and aquariums for their annual operations. The second section presents the economic impacts associated with 2007 capital spending by the AZA member zoos and aquariums. The third section—Appendices—presents the state-by-state lists of 2007 spending for operations and capital improvements and the associated multipliers used for calculating their economic impacts. Also included in the Appendices are a description of the methodology and definitions relevant to this Study. The expenditure data used in this economic impact analysis have been provided by the Association of Zoos and Aquariums from its 2007 annual member survey. The operating

and capital spending data were reported by each member organization and aggregated to the state level and nationally for use in this analysis.

Profile of Zoos and Aquariums

A survey conducted by the Association of Zoos and Aquariums (AZA) of its membership establishes the broad dimensions of their economic importance as a source of business activity. This survey found that the Association’s member organizations had 175.6 million visitors in 2007. These organizations reported operating outlays totaling \$2.34 billion, capital outlays of \$643.4 million and a total work force of 39,173. Further details of AZA’s economic profile are presented in the Table 1.

Table 1

Direct Economic Impacts of Member Organizations,
Association of Zoos and Aquariums, 2007
(dollars in billions)

AZA Members	Operations	Capital Outlays	Employees	Attendance
United States	\$2.136	\$0.484	35,639	162,956,261
Outside U.S.	0.204	0.159	3,534	12,681,350
Total	\$2.340	\$0.643	39,173	175,637,261

Source: Association of Zoos and Aquariums, 2008

Economic Impacts of Direct Spending By Zoos and Aquariums

Two primary categories of outlays are reflected in this analysis: annual operating outlays made by the member organizations during 2007 and capital outlays involving the construction of infrastructure and facilities contracted in 2007. The former recur annually and will increase annually to reflect changes in costs and the services provided while the later are one-time outlays and recur on an as needed basis. When combined for 2007, these total economic impacts establish the full magnitude of economic benefits that flow from zoos and aquariums (AZA member organizations) to the benefit of their respect state and national economies.

Economic Impacts of Spending By Zoos and Aquariums in the U.S.

For the AZA member organizations located in the United States, the findings of this economic impact analysis are presented in Table 2.

Total direct spending by AZA member organizations in the United States, for both operations and capital improvements in 2007, totaled \$2.62 billion. These direct outlays contributed a total of \$7.61 billion to the national economy (Gross Domestic Product) reflecting a combined multiplier (operating outlays and capital—construction—outlays) of 2.904. That is, for each dollar (\$1.00) of outlays by AZA’s U.S. member organizations in 2007, an additional \$1.90 was generated to the benefit of the U.S. economy for a total economic impact of \$2.90.

Table 2

Total Economic Impacts of Member U. S. Organizations
Association of Zoos and Aquariums, 2007
(dollars in billions)

Source*	Total Output(1)	Personal Earnings(2)	Jobs Supported(3)
Operating Outlays	\$6.067	\$1.933	60,725
Capital Outlays	1.540	.464	13,607
Total Outlays	\$7.607	\$2.397	74,332

Sources: Association of Zoos and Aquariums, GMU Center for Regional Analysis. *Direct outlays from Table 1. Notes: (1) the total value of goods and services generated directly and indirectly as a result of annual operating and capital outlays by zoos and aquariums in the US in 2007; (2) the additional earnings generated within the U.S. from outlays for zoos and aquariums in 2007 for operations and capital projects; (3) the additional new jobs supported nationwide by the spending and re-spending of outlays associated with the operation and capital outlays of zoos and aquariums in 2007.

This direct spending by AZA’s U.S. member organizations also generated new wages and salaries earned by workers across the breadth of the U.S. economy and supported jobs beyond those of the member organizations. In 2007, the direct and indirect spending impacts of the zoos and aquariums covered by the AZA survey generated new personal earnings of U.S. resident workers totaling \$2.4 billion and supported the full-time equivalent of 74,332 jobs nationwide across all sectors.

The distribution of these economic benefits across each the host states of AZA member zoos and aquariums reflect the scale of their local annual operating outlays and capital budget as well as the size and complexity of the respective state’s economy. When all of the individual state-level impacts are summed their combined impacts account for approximately 75 percent of the national economic benefit as shown in Table 3 below.

The economic benefits that cannot be assigned to any specific state—interstate spillovers—account for economic benefits that involve transportation effects, the instances of employees residing in a state different than in which they work (cross-state commuting), and interstate visitor travel patterns. While the economic impacts that accrue locally do reflect significant benefits beyond the direct outlays for the operation and capital improvement of local zoos and aquariums, these local outlays also have extra-state benefits that can be calculated at the national level that significantly enlarge the magnitudes of benefits flowing from these facilities.

Table 3

Total State, Interstate and National Economic Impacts of
U.S. Member Organizations, Association of Zoos and Aquariums, 2007
(dollars in billions)

Sources	Direct Outlays	Total Output	Personal Earnings	Jobs Supported
All States	\$2.620	\$5.542	\$1.725	58,745
Interstate		2.065	.672	15,587
Total US	\$2.620	\$7.607	\$2.397	74,332

Source: GMU Center for Regional Analysis.
For definition of headings, see Table 2.

The International Economic Impact of Spending By Zoos and Aquariums

The Association of Zoos and Aquariums has eleven international member organizations that responded to its survey on 2007 spending for operations and capital outlays. This annual spending impacts these organizations' attendant economies similarly to the impacts reported above for U.S. zoos and aquariums. As the relevant multipliers for these international locations are not available, estimates of the total economic impact, impact on personal earnings and impact on employment have been calculated by borrowing and combining U.S. state-level multipliers that closely mirror the size and complexity of the host economies of the respective international zoos and aquariums.

This approach will not result in as precise an analysis as would have been achieved if the local multipliers had been available for the international jurisdictions. However, in the absence of locally specific internationally multipliers, this substitute approach will establish an order-of-magnitude measure of related economic impacts that result annually from the direct operating outlays and capital spending in 2007 of zoos and aquariums located outside of the United States.

As reported in Table 1, the direct spending of AZA's international member zoos and aquariums totaled \$204 million for operations in 2007 and \$159 million for capital projects. These outlays are disaggregated to reflect the five Canadian members. Two Mexican members and four other members located elsewhere internationally (one in each of four countries) and the estimated economic impacts of these direct outlays are also reported in Table 4.

Table 4
Total Economic Impacts of International Member Organizations
Association of Zoos and Aquariums, 2007
(dollars in millions)

Source*	Direct Outlays	Total Output(1)	Personal Earnings(2)	Jobs Supported(3)
Canada	\$141.919	\$325.78	\$101.420	3,233
Operating Outlays	114.295	259.45	81.492	2,675
Capital Outlays	27.624	66.33	19.928	558
Mexico	\$12.347	\$28.54	\$8.836	276
Operating Outlays	8.426	19.13	6.008	197
Capital Outlays	3.921	9.41	2.828	79
Other International	\$209.382	\$492.02	\$150.362	4,491
Operating Outlays	81.711	185.48	58.260	1,912
Capital Outlays	127.671	306.54	92.102	2,579
All International	\$363.648	\$846.34	\$260.618	8,000

Sources: Association of Zoos and Aquariums, GMU Center for Regional Analysis.

*For definition of headings, see Table 2.

The total direct spending of AZA's international members for operations and capital projects in 2007 was \$363.6 million. It is estimated that this direct spending resulted in a total contribution to these organizations' respective economies of \$846.3 million, reflecting an estimated aggregate multiplier of 2.327. Additionally, this direct spending generated an estimated increase of \$260.6 million in new personal earnings for residents of these institutions' host jurisdictions beyond their direct payroll outlays. Furthermore, in addition to these organizations direct employment of 3,534 workers (see Table 1), their spending and the re-spending of these outlays within the local and national economies supported an estimated additional 8,000 jobs.

Summary of Economic Impacts

Annual spending by zoos and aquariums for operations and capital projects generate significant economic benefits for their host jurisdictions. These benefits build from the initial outlays, as they are re-spent across the breadth of the economy. These benefits accumulate and expand the economy's total output as measured by GDP and GSP. These benefits also generate new personal earnings to the benefit of workers residing in the host jurisdictions and support job growth locally, regionally and nationally.

The \$2.98 billion in total direct outlays by AZA's member zoos and aquariums in 2007 generated \$8.45 billion in total economic impact; that is, each \$1 of direct spending by zoos and aquariums generated \$2.84 of total benefit to the overall economies of host jurisdictions. This direct spending of \$2.98 billion also generated \$2.66 billion in new personal earnings as a result of the re-spending of payroll and business income by employees and vendors of the zoos and aquariums and the subsequent re-spending of these monies within the local economies. This economic activity—direct outlays, indirect impacts and induced effects—also supported 82,332 jobs throughout the local, state and national economies beyond the direct job base supported by the zoos and aquariums. These economic impacts are summarized in Table 5.

Table 5

Summary of Economic Impacts Generated By
AZA Member Zoos and Aquariums, 2007

Sources	Direct Outlays	Total Output	Personal Earnings	Jobs Supported
Total US	\$2.620	\$7.607	\$2.397	74,332
Others*	\$0.364	\$0.846	\$0.261	8,000
Total Impacts	\$2.984	\$8.453	\$2.658	82,332

Source: GMU Center for Regional Analysis.

*Five Canadian, two Mexican and four other international members

For definition of headings, see Table 2.

Appendix I

Economic Multipliers

The total impacts of the Association of Zoos and Aquarium members on their respective states and Countries reflect the combination of direct outlays (capital or operating) and their subsequent monetary effects as these funds are circulated through the economy; that is, the re-spending of these direct outlays will generate additional economic activity that otherwise would not have occurred. The total value of these combined direct and indirect values can be estimated by the application of appropriate multipliers that have been calculated for each state and for the US in aggregate by the Bureau of Economic Analysis of the U.S. Department of Commerce employing its Regional Input-Output Model (RIMS II). For foreign member zones and aquariums, composite multipliers have been constructed reflect similar size and complexities of economies in the US in order to estimate likely impacts on their respective economies.

The results of these calculations are estimates of (1) output value—total contribution to the local and regional economy, (2) personal earnings—new earnings realized by residents of the state or nation in which respective member spending occurs and (3) the jobs supported by these outlays—full-time year-round jobs throughout the state of nation.

The key variables governing the magnitude and significance of these economic impacts are their dollar value, the category of outlay (e.g., infrastructure and capital construction, and zoo and aquarium operations), the direct employment and payroll associated with the direct spending by member zoos and aquariums, and the geographic area of analysis and the complexity of the state economies. The size and complexity of the state and national economies determine the extent to which the local economies can provide the inputs (goods and services purchased by member zoos and aquariums and its employees as they spend their wages) and retain the outputs of these economic activities; i.e., how self-sufficient these economies are.

The state-by-state listings of operations and construction multipliers are included in Appendix I, Tables 3 and 4.

Appendix II

Definitions

- Direct Outlays**— all annual spending associated with the operations of AZA member zoos and aquariums.
- Economic Impact**—the generation of new spending (\$s) within a jurisdiction as a result operating or investing in capital projects of AZA members.
- Gross State Product (GRP) and Gross Domestic Product (GDP)** - the value of goods and services produced within the economy of the designated geographic area (state, nation).
- Indirect Benefit** – the additional economic benefits—measured in dollars or jobs—resulting from the accumulated additional value generated by the direct outlays or expenditures, as these dollars are re-spent within the economy. Indirect effects are calculated using multipliers and include sales and purchases by businesses supplying goods and services in support of the activities of AZA member zoos and aquariums as well as the re-spending of payroll by employees of these organizations and the workers of its vendors.
- Multiplier** – a numerical factor that captures the total value of a direct outlay of or benefits produced by the outlays made by AZA member zoos and aquariums on the economy as these funds are re-spent within that economy; an output multiplier measures the contribution (impact) of a direct outlay on the overall economy, an employment multiplier measures the total number of jobs that can be supported by a direct outlay; and a personal earnings multiplier measures the total personal earnings (wages and salaries) generated within the jurisdiction as a result of a zoo's or aquarium's direct outlay and the jobs its supports.
- Operating Costs** – Costs (expenditures) associated with the day-to-day operation of AZA member zoos and aquariums including management, utilities, normal maintenance and repair, custodial services, security, staffing, and purchases of supplies and equipment.
- Total Output** – the sum of the direct and indirect impacts (outlays) reflecting the combination of the initial expenditures and their subsequent accumulated value as it is cycled through the economy inclusive of benefits generated by the re-spending of personal earnings; contribution to GDP (gross domestic product) and GSP (gross state product) or GCP.
- Unit of Analysis** – the geographic unit of analysis, normally a political unit (state or nation) for which economic information is reported.

Appendix III

Spending for Operations and Capital Construction And Economic Impacts By State in the U.S. - 2007

And

Construction and Operations Multipliers by State

Table 1

Impacts of Zoo and Aquarium Construction on State Economies, 2007

State	Direct Spending (millions)	Total Output (millions)	Personal Income (millions)	Jobs
Alabama	\$0.610	\$1.429	\$0.424	15
Alaska	\$0.000	\$0.000	\$0.000	0
Arizona	\$18.127	\$39.798	\$12.526	404
Arkansas	\$0.675	\$1.411	\$0.406	15
California	\$32.219	\$74.542	\$23.385	602
Colorado	\$3.850	\$8.535	\$2.695	80
Connecticut	\$0.000	\$0.000	\$0.000	0
Delaware	\$0.000	\$0.000	\$0.000	0
District of Columbia	\$21.775	\$27.842	\$1.742	44
Florida	\$44.664	\$95.361	\$30.197	1,032
Georgia	\$1.900	\$4.578	\$1.376	43
Hawaii	\$8.246	\$15.572	\$4.951	139
Idaho	\$0.015	\$0.029	\$0.009	0
Illinois	\$21.214	\$51.928	\$15.527	405
Indiana	\$6.258	\$14.189	\$4.140	136
Iowa	\$0.995	\$2.083	\$0.613	22
Kansas	\$3.251	\$6.947	\$1.928	66
Kentucky	\$4.306	\$9.302	\$2.625	96
Louisiana	\$7.663	\$15.915	\$4.865	174
Maine	\$0.000	\$0.000	\$0.000	0
Maryland	\$3.230	\$6.933	\$2.012	58
Massachusetts	\$5.054	\$10.539	\$3.171	75
Michigan	\$8.376	\$18.381	\$5.721	162
Minnesota	\$16.767	\$37.172	\$11.361	325
Mississippi	\$0.750	\$1.604	\$0.471	18
Missouri	\$12.175	\$28.260	\$7.891	246
Montana	\$0.161	\$0.300	\$0.095	4
Nebraska	\$7.055	\$14.270	\$4.279	150
Nevada	\$0.435	\$0.825	\$0.252	7
New Hampshire	\$0.166	\$0.351	\$0.100	3
New Jersey	\$8.589	\$18.813	\$5.445	133
New Mexico	\$1.330	\$2.602	\$0.812	31
New York	\$59.782	\$112.390	\$32.408	825
North Carolina	\$7.231	\$16.648	\$4.974	168
North Dakota	\$0.035	\$0.065	\$0.019	1
Ohio	\$24.955	\$60.366	\$17.825	564
Oklahoma	\$5.411	\$12.257	\$3.728	141
Oregon	\$3.237	\$6.997	\$2.043	62
Pennsylvania	\$20.931	\$51.634	\$15.102	435
Rhode Island	\$0.000	\$0.000	\$0.000	0
South Carolina	\$1.911	\$4.244	\$1.228	43
South Dakota	\$0.153	\$0.294	\$0.089	3
Tennessee	\$7.690	\$18.462	\$5.370	171
Texas	\$33.886	\$85.873	\$26.404	803
Utah	\$0.927	\$2.106	\$0.652	23
Vermont	\$0.000	\$0.000	\$0.000	0
Virginia	\$24.749	\$54.772	\$15.542	493
Washington	\$47.564	\$101.858	\$31.559	894

West Virginia	\$0.000	\$0.000	\$0.000	0
Wisconsin	\$5.914	\$13.005	\$3.967	125
Wyoming	\$0.000	\$0.000	\$0.000	0
State totals	\$484.231	\$1,050.482	\$309.928	9,236
Interstate spillovers		\$489.614	\$154.208	4,371
USA total	\$484.231	\$1,540.096	\$464.135	13,607

Table 2

Impacts of Zoo and Aquarium Operations on State Economies, 2007

State	Direct Spending (millions)	Total Output (millions)	Personal Income (millions)	Jobs
Alabama	\$11.316	\$22.578	\$7.329	301
Alaska	\$0.000	\$0.000	\$0.000	0
Arizona	\$35.143	\$70.835	\$23.874	832
Arkansas	\$4.032	\$7.479	\$2.426	112
California	\$474.387	\$1,068.905	\$353.355	11,053
Colorado	\$59.403	\$128.793	\$42.705	1,455
Connecticut	\$30.154	\$57.651	\$18.231	548
Delaware	\$0.928	\$1.601	\$0.424	15
District of Columbia	\$20.800	\$26.959	\$2.594	104
Florida	\$210.311	\$433.374	\$146.145	5,111
Georgia	\$15.178	\$33.761	\$10.887	350
Hawaii	\$25.300	\$48.916	\$16.561	670
Idaho	\$2.386	\$4.419	\$1.462	68
Illinois	\$113.108	\$253.755	\$80.823	2,507
Indiana	\$28.641	\$56.891	\$18.027	689
Iowa	\$4.142	\$7.765	\$2.480	111
Kansas	\$13.109	\$25.327	\$7.583	314
Kentucky	\$21.953	\$42.678	\$13.028	518
Louisiana	\$27.621	\$53.059	\$17.459	761
Maine	\$0.000	\$0.000	\$0.000	0
Maryland	\$44.802	\$89.365	\$27.350	908
Massachusetts	\$50.912	\$102.218	\$32.638	988
Michigan	\$29.736	\$59.331	\$19.629	661
Minnesota	\$22.016	\$46.248	\$15.062	521
Mississippi	\$2.631	\$4.849	\$1.545	72
Missouri	\$59.977	\$121.553	\$35.748	1,335
Montana	\$1.860	\$3.417	\$1.152	55
Nebraska	\$19.121	\$35.957	\$11.595	505
Nevada	\$14.985	\$27.285	\$8.910	300
New Hampshire	\$1.200	\$2.303	\$0.711	24
New Jersey	\$30.158	\$63.537	\$19.323	578
New Mexico	\$12.712	\$23.546	\$7.908	339
New York	\$106.705	\$202.383	\$60.071	1,835
North Carolina	\$31.425	\$65.522	\$21.112	796
North Dakota	\$2.016	\$3.605	\$1.134	53
Ohio	\$105.012	\$223.476	\$71.030	2,583
Oklahoma	\$17.739	\$36.321	\$11.846	537
Oregon	\$35.608	\$71.226	\$22.552	916
Pennsylvania	\$55.019	\$118.059	\$36.811	1,194
Rhode Island	\$8.620	\$15.834	\$4.859	177
South Carolina	\$51.331	\$101.877	\$32.246	1,319
South Dakota	\$3.667	\$6.393	\$2.013	95
Tennessee	\$67.830	\$144.540	\$44.625	1,571
Texas	\$160.390	\$368.314	\$92.160	4,079
Utah	\$8.945	\$19.114	\$6.315	276
Vermont	\$0.000	\$0.000	\$0.000	0
Virginia	\$13.371	\$27.137	\$8.203	281
Washington	\$50.902	\$105.378	\$34.292	1,245

West Virginia	\$1.200	\$2.085	\$0.657	28
Wisconsin	\$27.882	\$55.514	\$18.116	714
Wyoming	\$0.000	\$0.000	\$0.000	0
State totals	\$2,135.682	\$4,491.130	\$1,415.009	49,508
Interstate spillovers		\$1,576.059	\$517.855	11,216
USA total	\$2,135.682	\$6,067.188	\$1,932.864	60,725

Table 3

Impacts of Zoo and Aquarium Operations and Construction on State Economies, 2007

State	Direct Spending (millions)	Total Output (millions)	Personal Income (millions)	Jobs
Alabama	\$11.926	\$24.007	\$7.753	\$316.374
Alaska	\$0.000	\$0.000	\$0.000	\$0.000
Arizona	\$53.270	\$110.633	\$36.399	\$1,235.946
Arkansas	\$4.707	\$8.890	\$2.832	\$127.544
California	\$506.607	\$1,143.448	\$376.740	\$11,655.724
Colorado	\$63.253	\$137.328	\$45.400	\$1,535.071
Connecticut	\$30.154	\$57.651	\$18.231	\$547.794
Delaware	\$0.928	\$1.601	\$0.424	\$14.762
District of Columbia	\$42.575	\$54.800	\$4.336	\$147.550
Florida	\$254.975	\$528.735	\$176.342	\$6,142.284
Georgia	\$17.078	\$38.339	\$12.263	\$392.542
Hawaii	\$33.546	\$64.488	\$21.512	\$809.807
Idaho	\$2.400	\$4.448	\$1.471	\$68.012
Illinois	\$134.322	\$305.682	\$96.350	\$2,912.423
Indiana	\$34.899	\$71.079	\$22.168	\$825.083
Iowa	\$5.137	\$9.847	\$3.093	\$132.974
Kansas	\$16.360	\$32.274	\$9.512	\$380.166
Kentucky	\$26.259	\$51.981	\$15.653	\$613.682
Louisiana	\$35.285	\$68.974	\$22.324	\$935.390
Maine	\$0.000	\$0.000	\$0.000	\$0.000
Maryland	\$48.031	\$96.298	\$29.362	\$965.792
Massachusetts	\$55.966	\$112.758	\$35.810	\$1,063.004
Michigan	\$38.112	\$77.712	\$25.350	\$822.788
Minnesota	\$38.783	\$83.420	\$26.423	\$846.326
Mississippi	\$3.381	\$6.453	\$2.016	\$89.726
Missouri	\$72.152	\$149.812	\$43.639	\$1,581.418
Montana	\$2.021	\$3.717	\$1.247	\$58.349
Nebraska	\$26.176	\$50.228	\$15.875	\$655.704
Nevada	\$15.420	\$28.110	\$9.162	\$307.334
New Hampshire	\$1.366	\$2.653	\$0.810	\$27.146
New Jersey	\$38.747	\$82.350	\$24.769	\$711.155
New Mexico	\$14.042	\$26.148	\$8.720	\$369.145
New York	\$166.486	\$314.773	\$92.479	\$2,660.308
North Carolina	\$38.656	\$82.169	\$26.087	\$964.586
North Dakota	\$2.051	\$3.670	\$1.153	\$53.463
Ohio	\$129.967	\$283.842	\$88.855	\$3,147.272
Oklahoma	\$23.150	\$48.578	\$15.574	\$678.712
Oregon	\$38.846	\$78.223	\$24.595	\$977.827
Pennsylvania	\$75.949	\$169.693	\$51.913	\$1,629.261
Rhode Island	\$8.620	\$15.834	\$4.859	\$177.288
South Carolina	\$53.242	\$106.121	\$33.474	\$1,362.402
South Dakota	\$3.820	\$6.687	\$2.102	\$98.496
Tennessee	\$75.519	\$163.002	\$49.995	\$1,742.863
Texas	\$194.275	\$454.187	\$118.564	\$4,882.336
Utah	\$9.873	\$21.220	\$6.967	\$298.625
Vermont	\$0.000	\$0.000	\$0.000	\$0.000
Virginia	\$38.120	\$81.909	\$23.745	\$773.740
Washington	\$98.466	\$207.237	\$65.851	\$2,139.598
West Virginia	\$1.200	\$2.085	\$0.657	\$28.040
Wisconsin	\$33.796	\$68.519	\$22.083	\$838.556
Wyoming	\$0.000	\$0.000	\$0.000	\$0.000

State totals	\$2,619.913	\$5,541.612	\$1,724.936	\$58,744.385
Interstate spillovers	\$0.000	\$2,065.673	\$672.062	\$15,587.063
USA total	\$2,619.913	\$7,607.284	\$2,396.999	\$74,331.448

Table 4

**Largest amounts of direct spending on
zoo and aquarium operations and
construction, 2007**

Spending Rank	State	Direct Spending (millions)
1	California	\$506.607
2	Florida	\$254.975
3	Texas	\$194.275
4	New York	\$166.486
5	Illinois	\$134.322
6	Ohio	\$129.967
7	Washington	\$98.466
8	Pennsylvania	\$75.949
9	Tennessee	\$75.519
10	Missouri	\$72.152
11	Colorado	\$63.253
12	Massachusetts	\$55.966
13	Arizona	\$53.270
14	South Carolina	\$53.242
15	Maryland	\$48.031
16	District of Columbia	\$42.575
17	Oregon	\$38.846
18	Minnesota	\$38.783
19	New Jersey	\$38.747
20	North Carolina	\$38.656
21	Virginia	\$38.120
22	Michigan	\$38.112
23	Louisiana	\$35.285
24	Indiana	\$34.899
25	Wisconsin	\$33.796
26	Hawaii	\$33.546
27	Connecticut	\$30.154
28	Kentucky	\$26.259
29	Nebraska	\$26.176
30	Oklahoma	\$23.150
31	Georgia	\$17.078
32	Kansas	\$16.360
33	Nevada	\$15.420
34	New Mexico	\$14.042
35	Alabama	\$11.926
36	Utah	\$9.873
37	Rhode Island	\$8.620
38	Iowa	\$5.137
39	Arkansas	\$4.707
40	South Dakota	\$3.820
41	Mississippi	\$3.381
42	Idaho	\$2.400
43	North Dakota	\$2.051
44	Montana	\$2.021
45	New Hampshire	\$1.366
46	West Virginia	\$1.200
47	Delaware	\$0.928
48	Alaska	\$0.000
49	Maine	\$0.000

50	Vermont	\$0.000
51	Wyoming	\$0.000
	State/USA totals	\$2,619.913

Table 5

Output, Earnings, and Employment Multipliers: Construction

State	Output	Earnings	Employment
Alabama	2.3431	0.6952	25.2
Alaska	1.7473	0.5388	14.9
Arizona	2.1955	0.6910	22.3
Arkansas	2.0902	0.6016	22.3
California	2.3136	0.7258	18.7
Colorado	2.2171	0.7000	20.7
Connecticut	2.0190	0.6070	14.4
Delaware	1.8081	0.4727	13.9
District of Columbia	1.2786	0.0800	2.0
Florida	2.1351	0.6761	23.1
Georgia	2.4096	0.7243	22.6
Hawaii	1.8884	0.6004	16.9
Idaho	1.9664	0.6028	22.9
Illinois	2.4478	0.7319	19.1
Indiana	2.2673	0.6616	21.7
Iowa	2.0930	0.6158	21.8
Kansas	2.1369	0.5931	20.3
Kentucky	2.1604	0.6096	22.2
Louisiana	2.0767	0.6348	22.7
Maine	2.0151	0.6257	23.2
Maryland	2.1469	0.6230	17.9
Massachusetts	2.0853	0.6275	14.9
Michigan	2.1946	0.6830	19.3
Minnesota	2.2170	0.6776	19.4
Mississippi	2.1384	0.6284	23.5
Missouri	2.3211	0.6481	20.2
Montana	1.8630	0.5888	22.8
Nebraska	2.0228	0.6066	21.3
Nevada	1.8972	0.5804	16.4
New Hampshire	2.1112	0.6013	17.5
New Jersey	2.1904	0.6340	15.5
New Mexico	1.9563	0.6102	23.0
New York	1.8800	0.5421	13.8
North Carolina	2.3023	0.6879	23.3
North Dakota	1.8420	0.5316	20.4
Ohio	2.4190	0.7143	22.6
Oklahoma	2.2652	0.6889	26.1
Oregon	2.1612	0.6310	19.0
Pennsylvania	2.4669	0.7215	20.8
Rhode Island	1.9022	0.5348	15.9
South Carolina	2.2207	0.6425	22.6
South Dakota	1.9204	0.5813	22.2
Tennessee	2.4009	0.6984	22.3
Texas	2.5342	0.7792	23.7
Utah	2.2710	0.7030	24.6
Vermont	1.9128	0.5752	20.9
Virginia	2.2131	0.6280	19.9
Washington	2.1415	0.6635	18.8
West Virginia	1.7944	0.4899	18.6

Wisconsin	2.1990	0.6708	21.1
Wyoming	1.6656	0.5001	19.2
United States	3.1805	0.9585	28.1
Source: BEA			

Table 6

Average operating costs multiplier for industry

State	Output	Earnings	Employment
Alabama	2.00	0.65	26.60
Alaska	1.77	0.59	23.83
Arizona	2.02	0.68	23.67
Arkansas	1.86	0.60	27.90
California	2.25	0.74	23.30
Colorado	2.17	0.72	24.50
Connecticut	1.91	0.60	18.17
Delaware	1.72	0.46	15.90
District of Columbia	1.30	0.12	5.00
Florida	2.06	0.69	24.30
Georgia	2.22	0.72	23.03
Hawaii	1.93	0.65	26.50
Idaho	1.85	0.61	28.37
Illinois	2.24	0.71	22.17
Indiana	1.99	0.63	24.07
Iowa	1.87	0.60	26.87
Kansas	1.93	0.58	23.97
Kentucky	1.94	0.59	23.60
Louisiana	1.92	0.63	27.57
Maine	1.87	0.62	26.20
Maryland	1.99	0.61	20.27
Massachusetts	2.01	0.64	19.40
Michigan	2.00	0.66	22.23
Minnesota	2.10	0.68	23.67
Mississippi	1.84	0.59	27.40
Missouri	2.03	0.60	22.27
Montana	1.84	0.62	29.40
Nebraska	1.88	0.61	26.43
Nevada	1.82	0.59	20.03
New Hampshire	1.92	0.59	20.20
New Jersey	2.11	0.64	19.17
New Mexico	1.85	0.62	26.63
New York	1.90	0.56	17.20
North Carolina	2.09	0.67	25.33
North Dakota	1.79	0.56	26.17
Ohio	2.13	0.68	24.60
Oklahoma	2.05	0.67	30.30
Oregon	2.00	0.63	25.73
Pennsylvania	2.15	0.67	21.70
Rhode Island	1.84	0.56	20.57
South Carolina	1.98	0.63	25.70
South Dakota	1.74	0.55	25.93
Tennessee	2.13	0.66	23.17
Texas	2.30	0.57	25.43
Utah	2.14	0.71	30.83
Vermont	1.80	0.57	24.30
Virginia	2.03	0.61	21.03
Washington	2.07	0.67	24.47
West Virginia	1.74	0.55	23.37

Wisconsin	1.99	0.65	25.60
Wyoming	1.66	0.56	26.50
United States	2.84	0.91	28.43