Spending and Economic Activity from Recreation at Oregon State Park Units—Coastal Region and Milo McIver State Park, an update

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November, 2012
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Cover photo: Heceta Head Lighthouse State Scenic Viewpoint. Photo by Anita Morzillo.
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Executive summary

The spending of visitors to Oregon State Parks units generates economic activity in the communities located around those units. We use a survey of visitors to Oregon State Parks units located in the Coastal Region and at Milo McIver State Park to estimate the average trip spending of visitors. We then combine those estimates of average spending with estimates of the number of recreation visits and an economic model to quantify the magnitude of local economic activity generated from Oregon State Parks visitor spending.

The average trip spending of visitors ranges from about $25 per party per trip for local residents on day trips to nearly $275 per party per trip for non-local residents on overnight trips away from home. On average, most local area expenses are for gasoline, groceries, and purchases in restaurants/bars. The reported 23 million visits to Oregon State Parks units in the Coastal Region yield about $503 million in visitor spending in local communities. Non-local residents account for about $449 million of that spending. The reported 410,000 visits to Milo McIver State Park result in total visitor spending in the local area of about $6.8 million.

The economies of local communities are bolstered by the total spending from visitors and from the “chain reaction” of economic activity that results when those businesses and their employees also spend money in the local community. That chain reaction is also referred to as the “multiplier effect.” For the Coastal Region, spending in the local areas around Oregon State Parks units generates about $411 million in total sales, about 6,585 full and part-time jobs, and generates total labor income of $128 million. Counting only the spending of non-local visitors, the economic impact of visitor spending within the Coastal Region amounts to total sales of $371 million, 5,942 full and part-time jobs, and $115 million in labor income. The spending of visitors to Milo McIver State Park generates about $6.7 million in total sales, 84 full and part-time jobs, and $2.3 million in labor income within the local region. Counting only the spending of non-local visitors, the economic impact of Milo McIver State Park recreation visitor spending amounts to nearly $2.6 million in total sales and 33 full and part-time jobs.
Introduction

The units of the Oregon State Parks system provide a valuable recreation resource for residents of and visitors to Oregon. Additionally, the towns and cities around Oregon State Parks units benefit economically from government spending for unit operations and from the spending of visitors recreating at Oregon State Parks facilities. In many cases, the economic activity generated from recreation visitors is an integral component of local economies. This report describes the spending, and associated economic activity, of recreation visitors to Oregon State Parks Units within the Coastal Region and at Milo McIver State Park in the Valley Region.

This report relies on survey data collected from visitors to a subset of units (Box 1) located in the Coastal Region and at Milo McIver State Park between July and August, 2011 (Bergerson 2012). More than 9,000 completed surveys were collected. A portion of those surveys are used in this analysis. Day use areas of units were sampled via on-site visitor surveys. Overnight use areas (i.e., campgrounds) were sampled through an online survey of visitors using the Oregon State Parks reservation system. The survey was designed to measure visit and visitor characteristics, visitor satisfaction, and visitor trip spending in the local area around the recreation unit. The questions used to elicit local recreation trip spending were consistent with those used in the USDA Forest Service recreation monitoring program (Zarnoch et al. 2011).

Measuring how the spending of recreation visitors affects the economies of local communities requires 1) an estimate of total recreation visitation within different trip types, 2) an estimate of the average spending of recreation visitors engaged in different trip types, and 3) a model of the local economy.

<table>
<thead>
<tr>
<th>Box 1—Oregon State Parks Units sampled in 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Coast</strong></td>
</tr>
<tr>
<td>Cape Lookout SP</td>
</tr>
<tr>
<td>Cape Meares SSV</td>
</tr>
<tr>
<td>Fort Stevens HA</td>
</tr>
<tr>
<td>Nehalem Bay SP</td>
</tr>
<tr>
<td><strong>Central Coast</strong></td>
</tr>
<tr>
<td>Beverly Beach SP</td>
</tr>
<tr>
<td>Devil's Lake SRA</td>
</tr>
<tr>
<td>Devil's Punch Bowl SNA</td>
</tr>
<tr>
<td>Jessie Honeyman SP</td>
</tr>
<tr>
<td>South Beach SP</td>
</tr>
<tr>
<td><strong>South Coast</strong></td>
</tr>
<tr>
<td>Bullards Beach SP</td>
</tr>
<tr>
<td>Harris Beach SRA</td>
</tr>
<tr>
<td>Samuel Boardman SSC</td>
</tr>
<tr>
<td>Sunset Bay SP</td>
</tr>
<tr>
<td>William M. Tugman SP</td>
</tr>
<tr>
<td><strong>Valley Region</strong></td>
</tr>
<tr>
<td>Milo McIver SP</td>
</tr>
</tbody>
</table>
Average trip spending

Spending averages were estimated using data collected from visitors to all of the units sampled in 2011. Survey respondents reported trip expenditures made by their entire travel party within 30 miles of the visited facility. Trip expenses were reported within 10 expenditure categories, such as spending for hotels/motels/B&Bs, campground fees, restaurants, and gas and oil. Because they were interviewed in the middle of the trip, respondents interviewed in day use areas were asked to report expenses already made as well as anticipated expenses. Expenses at home in preparation for the trip and expenditures traveling to, but beyond 30 miles of the unit, were not reported. The visitor spending reported here does not represent spending for equipment, gear, or other durable goods that might be used for recreation.

Our goal is to estimate spending averages for meaningful groups of visitors. In developing the approach to grouping visitors, we recognize that visitor spending is mostly influenced by the type of recreation trip taken (day or overnight) and whether the individual lives in the immediate area of the recreation destination (White and Stynes 2008). In general, the recreation activity of the trip has little influence over trip spending once the type of trip is taken into account. In our approach, we have grouped visitors into five distinct types of trips to Oregon State Parks:

- **Non-local day trips**: non-local residents on day trips to the area,
- **Non-local overnight**: non-local residents staying overnight at the unit or in the area,
- **Local day trips**: local residents on day trips to the area,
- **Local overnight**: local residents staying overnight at the unit or in the area,
- **Non-primary**: visits where recreating at the unit is not the primary reason for the trip away from home.

Local residents were identified as those who travelled 30 miles or less from home to reach the facility. Visitors were classified as overnight visitors if they reported a night spent away from home in the local area, reported local expenses on lodging or camping, or claimed to be participating in camping at the unit. Visitors not classified as overnight were classified as day visitors. In some cases, an individual may be on an overnight trip away from home but on only a day trip to the local area. Those individuals are classified as “day” visitors. Finally, visitors were classified as non-primary visitors if their stated reason for traveling away from home was something other than recreation or if the unit was not the main recreation destination. In some analyses, it is desirable to exclude the recreation trip spending of non-primary visitors. Note that for the Coastal Region, about 90% of non-primary visits are associated with non-locals.

The spending averages developed for year 2011 are based on a sample of 6,295 visitors; 5,752 in the Coastal Region and 543 in the Valley Region at Milo McIver State Park. Spending estimates were developed separately for the North Coast, Central Coast, South Coast and Milo McIver (Valley Region). We report separate spending averages for each zone for use in measuring the
affects to local economies. However, the spending averages estimated for each zone are not statistically unique from one another.

Average trip spending for parties recreating at Oregon State Parks North Coast units ranges from about $44 for those parties on local day trips to about $241 per trip for non-local parties on overnight trips to the area (Table 1). Most of the expenditures of parties on day trips are for food and gasoline. For non-local overnight visitors, camping fees, gasoline, and food account for nearly all of the locally-made recreation spending. Local overnight visitors spend most of their money on food, gasoline, and camping fees.

Table 1—Average spending of visitors to Oregon State Parks North Coast units, $ per party per trip

<table>
<thead>
<tr>
<th>Spending categories</th>
<th>Non-local primary</th>
<th>Non-local primary</th>
<th>Local primary</th>
<th>Non-local primary</th>
<th>Non-local primary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day</td>
<td>Overnight</td>
<td>Day</td>
<td>Overnight</td>
<td>Day</td>
</tr>
<tr>
<td>Lodging</td>
<td>0.00</td>
<td>12.62</td>
<td>0.00</td>
<td>13.42</td>
<td>58.94</td>
</tr>
<tr>
<td>Camping</td>
<td>0.00</td>
<td>50.79</td>
<td>0.00</td>
<td>19.92</td>
<td>25.04</td>
</tr>
<tr>
<td>Restaurant</td>
<td>23.15</td>
<td>38.99</td>
<td>11.18</td>
<td>19.76</td>
<td>42.07</td>
</tr>
<tr>
<td>Groceries</td>
<td>10.55</td>
<td>48.66</td>
<td>16.00</td>
<td>35.35</td>
<td>33.90</td>
</tr>
<tr>
<td>Gasoline</td>
<td>24.95</td>
<td>51.03</td>
<td>11.22</td>
<td>27.50</td>
<td>43.82</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>8.74</td>
<td>11.47</td>
<td>3.58</td>
<td>6.40</td>
<td>6.62</td>
</tr>
<tr>
<td>Recreation &amp;</td>
<td>1.96</td>
<td>4.71</td>
<td>1.82</td>
<td>4.50</td>
<td>3.43</td>
</tr>
<tr>
<td>entertainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Souvenirs and other expenses</td>
<td>6.55</td>
<td>22.82</td>
<td>0.45</td>
<td>5.33</td>
<td>18.77</td>
</tr>
<tr>
<td>Total</td>
<td><strong>75.90</strong></td>
<td><strong>241.09</strong></td>
<td><strong>44.25</strong></td>
<td><strong>132.18</strong></td>
<td><strong>232.59</strong></td>
</tr>
<tr>
<td>Sample size</td>
<td>84</td>
<td>813</td>
<td>55</td>
<td>105</td>
<td>605</td>
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<tr>
<td>Std. dev. of total</td>
<td>76</td>
<td>211</td>
<td>71</td>
<td>167</td>
<td>336</td>
</tr>
<tr>
<td>Percent error</td>
<td>22%</td>
<td>6%</td>
<td>44%</td>
<td>25%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*All figures expressed in 2011 dollars.

Average trip spending for parties recreating at Oregon State Parks Central Coast units ranges from about $25 for those parties on local day trips to about $275 per trip for non-local parties on overnight trips to the area (Table 2). Most of the expenditures of parties on day trips are for gasoline and food. For non-local overnight visitors, food, camping fees, and gasoline account for nearly all the recreation spending. Local overnight visitors spend most of their money on groceries and gasoline.
Table 2—Average spending of visitors to Oregon State Parks Central Coast units, $ per party per trip

<table>
<thead>
<tr>
<th>Spending categories</th>
<th>Non-local Day</th>
<th>Non-local Overnight</th>
<th>Local Day</th>
<th>Local Overnight*</th>
<th>Non-primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>0.00</td>
<td>14.07</td>
<td>0.00</td>
<td>13.42</td>
<td>29.13</td>
</tr>
<tr>
<td>Camping</td>
<td>0.00</td>
<td>50.63</td>
<td>0.00</td>
<td>19.92</td>
<td>26.33</td>
</tr>
<tr>
<td>Restaurant</td>
<td>24.01</td>
<td>50.00</td>
<td>6.04</td>
<td>19.76</td>
<td>40.21</td>
</tr>
<tr>
<td>Groceries</td>
<td>10.40</td>
<td>53.10</td>
<td>8.70</td>
<td>35.35</td>
<td>30.87</td>
</tr>
<tr>
<td>Gasoline</td>
<td>18.34</td>
<td>60.39</td>
<td>6.82</td>
<td>27.50</td>
<td>40.71</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>3.39</td>
<td>13.43</td>
<td>2.22</td>
<td>6.40</td>
<td>7.03</td>
</tr>
<tr>
<td>Recreation &amp; entertainment expenses</td>
<td>6.62</td>
<td>7.10</td>
<td>0.93</td>
<td>4.50</td>
<td>7.26</td>
</tr>
<tr>
<td>Total</td>
<td><strong>67.52</strong></td>
<td><strong>274.62</strong></td>
<td><strong>25.57</strong></td>
<td><strong>132.18</strong></td>
<td><strong>200.74</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Sample size</th>
<th>Std. dev. of total</th>
<th>Percent error (95% level)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>151</td>
<td>955</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>94</td>
<td>289</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>137</td>
<td>45</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>105</td>
<td>167</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>744</td>
<td>266</td>
<td>10%</td>
</tr>
</tbody>
</table>

All figures expressed in 2011 dollars.

* The sample size for local overnight visitors was insufficient and here we substitute the local overnight averages for all Coastal Region units combined.

Average trip spending for parties recreating at Oregon State Parks South Coast units ranges from about $26 for those parties on local day trips to about $254 per trip for non-local parties on overnight trips to the area (Table 3). Most of the expenditures of parties on day trips are for food and gasoline. For non-local overnight visitors, gasoline, camping fees, and food account for the majority of the recreation spending. Local overnight visitors spend most of their money on groceries and gasoline.
Average trip spending for parties recreating at Milo McIver State Park (Valley Region) ranges from about $38 for those parties on day trips to about $151 per trip for non-local parties on overnight trips to the area (Table 4). Most of the expenditures of parties on day trips are for groceries and gasoline. For non-local overnight visitors, camping fees, groceries, and gasoline account for nearly all the recreation spending. Local overnight visitors spend most of their money on groceries and camping fees.
Table 4—Average spending of visitors to Milo McIver State Park, $ per party per trip

<table>
<thead>
<tr>
<th>Spending categories</th>
<th>Non-local Day</th>
<th>Non-local Overnight</th>
<th>Local Day</th>
<th>Local Overnight</th>
<th>Non-primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>0.00</td>
<td>1.95</td>
<td>0.00</td>
<td>0.32</td>
<td>2.29</td>
</tr>
<tr>
<td>Camping</td>
<td>0.00</td>
<td>38.96</td>
<td>0.00</td>
<td>43.47</td>
<td>19.06</td>
</tr>
<tr>
<td>Restaurant</td>
<td>4.45</td>
<td>15.78</td>
<td>4.45</td>
<td>7.13</td>
<td>14.63</td>
</tr>
<tr>
<td>Groceries</td>
<td>13.71</td>
<td>36.76</td>
<td>13.71</td>
<td>50.85</td>
<td>23.66</td>
</tr>
<tr>
<td>Gasoline</td>
<td>11.55</td>
<td>33.74</td>
<td>11.55</td>
<td>25.62</td>
<td>37.07</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>5.91</td>
<td>6.14</td>
<td>5.91</td>
<td>11.65</td>
<td>6.50</td>
</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>2.62</td>
<td>9.20</td>
<td>2.62</td>
<td>4.73</td>
<td>1.46</td>
</tr>
<tr>
<td>Souvenirs and other expenses</td>
<td>0.13</td>
<td>8.29</td>
<td>0.13</td>
<td>0.70</td>
<td>5.74</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38.37</strong></td>
<td><strong>150.82</strong></td>
<td><strong>38.37</strong></td>
<td><strong>144.48</strong></td>
<td><strong>110.40</strong></td>
</tr>
</tbody>
</table>

Sample size 112 148 112 150 107
Std. dev. of total 52 171 52 104 158
Percent error (95% level) 25% 19% 25% 12% 28%

All figures expressed in 2011 dollars.

*The sample size for non-local day visitors was insufficient and here we substitute the local day averages.

Recreation visits

According to Oregon State Parks’ figures, units in the Coastal Region received nearly 23 million recreation visits in 2011. Along the coast, the Central Coast zone received the greatest number of visits (11.5 million)—approximately double the number of recreation visits of the North and South zones (about 5 million and 6 million visits, respectively). Milo McIver State Park received slightly more than 400,000 visits in 2011.

Information from visitor surveys was used to determine the types of recreation trips taken to Oregon State Parks units (Table 5). Along the Coast, the majority of visits are non-primary visits; non-local overnight visits are the second most common type of visit. The high rate of non-primary visits at Oregon State Parks Coastal Region units likely reflects the Oregon Coast as being a recreation destination facilitated by the presence of Oregon State Parks units rather than those units being the specific trip destination. The North Coast zone has the greatest number of non-primary visits. The Central Coast zone experiences the greatest number of visits by non-locals involving an overnight stay inside or outside the unit. The South Coast zone has the greatest share of visits from local users on day trips. Day trips by local residents are the most frequent type of visit at Milo McIver State Park. Non-primary trips, at nearly ¼ of visits, are the second most common type of visit there.
Because visitor spending is on a party basis, we first convert the reported number of visits to party visits based on average party sizes estimated from the visitor survey data. The nearly 23 million visits to Oregon State Parks units on the Oregon Coast generate about $503.1 million in visitor trip spending within the communities around the units (Table 6). Non-local overnight visitors have the greatest total spending ($295.8 million) of any visitor group. Spending for gasoline ($122.8 million) and groceries ($119.8 million) constitute the greatest total expenses for recreation groups (Figure 1). Including the 90% of non-primary visits from nonlocals, visitors from outside the area (non-locals) spent about $449 million in communities around Oregon State Parks units in the Coastal Region.

**Table 5—Trip-type distribution of visits to Oregon State Parks units**

<table>
<thead>
<tr>
<th>Location</th>
<th>Non-local Day</th>
<th>Non-local Overnight</th>
<th>Local Day</th>
<th>Local Overnight</th>
<th>Non-primary</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Coast</td>
<td>8%</td>
<td>19%</td>
<td>5%</td>
<td>2%</td>
<td>66%</td>
<td>100%</td>
</tr>
<tr>
<td>Central Coast</td>
<td>15%</td>
<td>22%</td>
<td>11%</td>
<td>2%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>South Coast</td>
<td>9%</td>
<td>16%</td>
<td>16%</td>
<td>4%</td>
<td>55%</td>
<td>100%</td>
</tr>
<tr>
<td>Coastal Average</td>
<td>12%</td>
<td>19%</td>
<td>11%</td>
<td>3%</td>
<td>55%</td>
<td>100%</td>
</tr>
<tr>
<td>Milo McIver State Park</td>
<td>13%</td>
<td>8%</td>
<td>45%</td>
<td>10%</td>
<td>24%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Total visitor spending**

Because visitor spending is on a party basis, we first convert the reported number of visits to party visits based on average party sizes estimated from the visitor survey data. The nearly 23 million visits to Oregon State Parks units on the Oregon Coast generate about $503.1 million in visitor trip spending within the communities around the units (Table 6). Non-local overnight visitors have the greatest total spending ($295.8 million) of any visitor group. Spending for gasoline ($122.8 million) and groceries ($119.8 million) constitute the greatest total expenses for recreation groups (Figure 1). Including the 90% of non-primary visits from non-locals, visitors from outside the area (non-locals) spent about $449 million in communities around Oregon State Parks units in the Coastal Region.

**Table 6—Total trip spending by visitors within 30 miles of Oregon State Parks units in the Coastal Region ($ millions)**

<table>
<thead>
<tr>
<th>Spending category</th>
<th>Non-local Day</th>
<th>Non-local Overnight</th>
<th>Local Day</th>
<th>Local Overnight</th>
<th>Non-primary (a)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>$0.00</td>
<td>$15.70</td>
<td>$0.00</td>
<td>$2.00</td>
<td>$0.00</td>
<td>$17.80</td>
</tr>
<tr>
<td>Camping</td>
<td>$0.00</td>
<td>$55.80</td>
<td>$0.00</td>
<td>$3.00</td>
<td>$0.00</td>
<td>$58.90</td>
</tr>
<tr>
<td>Restaurant</td>
<td>$17.10</td>
<td>$52.60</td>
<td>$4.90</td>
<td>$3.00</td>
<td>$26.10</td>
<td>$103.60</td>
</tr>
<tr>
<td>Groceries</td>
<td>$7.30</td>
<td>$57.90</td>
<td>$8.00</td>
<td>$5.40</td>
<td>$41.20</td>
<td>$119.80</td>
</tr>
<tr>
<td>Gasoline</td>
<td>$14.70</td>
<td>$64.80</td>
<td>$6.60</td>
<td>$4.20</td>
<td>$32.60</td>
<td>$122.80</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$3.10</td>
<td>$14.20</td>
<td>$1.50</td>
<td>$1.00</td>
<td>$8.00</td>
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</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>$3.90</td>
<td>$7.10</td>
<td>$0.80</td>
<td>$0.70</td>
<td>$4.30</td>
<td>$16.70</td>
</tr>
<tr>
<td>Souvenirs &amp; other expenses</td>
<td>$3.80</td>
<td>$27.70</td>
<td>$0.60</td>
<td>$0.80</td>
<td>$2.80</td>
<td>$35.70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$49.90</strong></td>
<td><strong>$295.80</strong></td>
<td><strong>$22.40</strong></td>
<td><strong>$20.10</strong></td>
<td><strong>$115.00</strong></td>
<td><strong>$503.10</strong></td>
</tr>
</tbody>
</table>

All figures expressed in 2011 dollars.

\(a\) We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.
Local day visits are the most common type of trip to Milo McIver State Park and those visits generate the greatest total visitor expenditures for that unit (Table 7). Local resident overnight visits generate the second greatest amount of total spending. Expenses for groceries and gasoline account for most of the visitor spending in the local area around Milo McIver State Park. Including the 50% of non-primary visits associated with non-locals, non-resident visitors to Milo McIver State Park spend about $2.6 million in the local area.
Table 7—Total trip spending by visitors within 30 miles of Milo McIver State Park ($000’s)

<table>
<thead>
<tr>
<th>Spending category</th>
<th>Non-local Day</th>
<th>Non-local Overnight</th>
<th>Local Day</th>
<th>Local Overnight</th>
<th>Non-primary&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>$0.0</td>
<td>$16.8</td>
<td>$0.0</td>
<td>$3.3</td>
<td>$0.0</td>
<td>$20.1</td>
</tr>
<tr>
<td>Camping</td>
<td>$0.0</td>
<td>$335.1</td>
<td>$0.0</td>
<td>$454.1</td>
<td>$0.0</td>
<td>$789.2</td>
</tr>
<tr>
<td>Restaurant</td>
<td>$77.8</td>
<td>$135.7</td>
<td>$237.9</td>
<td>$74.5</td>
<td>$142.3</td>
<td>$668.2</td>
</tr>
<tr>
<td>Groceries</td>
<td>$239.8</td>
<td>$316.2</td>
<td>$732.9</td>
<td>$531.2</td>
<td>$438.3</td>
<td>$2,258.4</td>
</tr>
<tr>
<td>Gasoline</td>
<td>$202.0</td>
<td>$290.2</td>
<td>$617.4</td>
<td>$267.7</td>
<td>$369.2</td>
<td>$1,746.5</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$103.4</td>
<td>$52.8</td>
<td>$315.9</td>
<td>$121.7</td>
<td>$188.9</td>
<td>$782.8</td>
</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>$45.8</td>
<td>$79.1</td>
<td>$140.1</td>
<td>$49.4</td>
<td>$83.8</td>
<td>$398.2</td>
</tr>
<tr>
<td>Souvenirs &amp; other expenses</td>
<td>$2.3</td>
<td>$71.3</td>
<td>$6.9</td>
<td>$7.3</td>
<td>$4.2</td>
<td>$92.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$671.2</strong></td>
<td><strong>$1,297.2</strong></td>
<td><strong>$2,051.1</strong></td>
<td><strong>$1,509.3</strong></td>
<td><strong>$1,226.6</strong></td>
<td><strong>$6,755.4</strong></td>
</tr>
</tbody>
</table>

All figures expressed in 2011 dollars.

<sup>a</sup> We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.

Economic contribution of Oregon State Parks visitors

Spending by recreation visitors for the purchase of goods (e.g., souvenirs) and services (e.g., restaurant meals or guided trips) creates economic activity in the communities around Oregon State Parks units. To provide a good or service to a visitor, a business typically must hire employees and buy goods and services (e.g., fuel) from other businesses in the local area. Additionally, the employees of businesses serving visitors use their income to make their own household purchases in town. This “chain reaction” of economic activity in local communities resulting from visitor spending is quantified by a metric referred to as an “economic multiplier.” The economic activity resulting from the initial spending by visitors is referred to as the “direct effect;” the activity associated with businesses and employees interacting because of visitor spending are “secondary effects.” The combination of direct and secondary effects is referred to as the “total effects.”

There are several important considerations for interpreting the estimates of the economic contribution of visits to Oregon State Parks. First, in traditional economic impact analysis, the spending of those who live within the impact area of the park (within 30 miles—local residents) would be excluded from the analysis because their spending does not represent “new” money to the region. Because we have included the spending of locals, we refer to this analysis as an economic contribution analysis. Second, we have included only a portion of the spending of those visits where the stated reason for the trip away from home was something other than visiting the Oregon State Parks unit (e.g., business, visiting friends and relatives, recreating elsewhere). Economic contribution or impact analyses attempt to estimate the economic activity associated strictly with the presence of the recreation site. Because the recreation facility did not
cause the trip away from home in those “non-primary” visits, much of the spending by those
individuals cannot be attributed strictly to the unit. We have applied the average spending of
local resident day visitors to those visits where the trip was caused by something other than
recreating at the unit. Local resident day visitor spending is considered a conservative estimate of
the additional cost of recreating at the unit for someone who is already in the local area. Third,
we have relied on the economic multipliers included in Money Generation Model-version 2
estimated for generic rural and small metro areas throughout the United States. Those economic
multipliers adequately characterize the economies of rural and small metro communities within
the U.S., but were not estimated using data only from Oregon communities.

We characterize the economic contribution of recreation visitor spending in terms of business
sales, full- and part-time jobs, labor income, and value added.

- **Sales** are the sales of firms within the region associated with visitor spending.
- **Jobs** are the number of jobs in the region supported by the visitor spending. Job
  estimates are not full time equivalents, but include part time and seasonal positions.
- **Personal income** includes wage and salary income, proprietor’s income and employee
  benefits.
- **Value added** is a commonly used measure of the contribution of an industry or region to
gross national or gross state product. Value added is personal income plus rents and
profits, plus indirect business taxes. As the name implies, it is the “value added” by the
region to the final good or service being produced. Value added can also be defined as
the final price of the good or service minus the costs of all of the non-labor inputs to
production.

Note that the values for direct effect sales are less than total visitor spending. This occurs
because for some types of purchases (e.g., gasoline, sporting goods, and souvenirs) only the
retail and wholesale margin portions of visitor expenditures will accrue to the local economy.
For those purchases, the expenditure associated with the cost of producing the product (e.g.,
refining gasoline) immediately “leaks” out of the region because that product (refined gasoline)
is not made within the region. The “capture rate” describes what portion of total spending results
in direct sales of products and services produced in the region. In this analysis, regional capture
rates are 64% to 69%.

The economic contribution of recreation visitor spending in the North, Central and South zones
is reported in tables 8 through 10. The magnitudes of economic contribution in the North and
South zones are similar—given similar levels of total spending. The economic contribution of
recreation at units in the Central zone is greater (Table 9). Economic contribution and impact for
individual Coastal Region units are reported in a subsequent table.
Table 8—Economic contribution to local communities from Oregon State Parks visitor spending, North Coast zone, 2011

<table>
<thead>
<tr>
<th>Sector/Spending category</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motel, hotel cabin or B&amp;B</td>
<td>3,426</td>
<td>45</td>
<td>873</td>
<td>1,819</td>
</tr>
<tr>
<td>Camping fees</td>
<td>12,882</td>
<td>185</td>
<td>3,399</td>
<td>5,373</td>
</tr>
<tr>
<td>Restaurants &amp; bars</td>
<td>24,491</td>
<td>490</td>
<td>8,190</td>
<td>12,743</td>
</tr>
<tr>
<td>Admissions &amp; fees</td>
<td>7,883</td>
<td>192</td>
<td>1,925</td>
<td>4,389</td>
</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>3,462</td>
<td>84</td>
<td>845</td>
<td>1,928</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>7,610</td>
<td>149</td>
<td>3,746</td>
<td>5,514</td>
</tr>
<tr>
<td>Gas stations</td>
<td>5,033</td>
<td>78</td>
<td>1,899</td>
<td>3,434</td>
</tr>
<tr>
<td>Other retail</td>
<td>3,449</td>
<td>73</td>
<td>1,497</td>
<td>2,550</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>2,936</td>
<td>22</td>
<td>1,020</td>
<td>2,180</td>
</tr>
<tr>
<td>Local production of goods</td>
<td>1,416</td>
<td>5</td>
<td>186</td>
<td>320</td>
</tr>
<tr>
<td><strong>Total Direct Effects</strong></td>
<td>$72,589</td>
<td>1,324</td>
<td>$23,580</td>
<td>$40,249</td>
</tr>
<tr>
<td>Secondary effects</td>
<td>24,971</td>
<td>248</td>
<td>6,879</td>
<td>14,564</td>
</tr>
<tr>
<td><strong>Total Effects</strong></td>
<td>$97,560</td>
<td>1,572</td>
<td>$30,459</td>
<td>$54,814</td>
</tr>
<tr>
<td>Multiplier</td>
<td>1.34</td>
<td>1.19</td>
<td>1.29</td>
<td>1.36</td>
</tr>
</tbody>
</table>

Table 9—Economic contribution to local communities from Oregon State Parks visitor spending, Central Coast zone, 2011

<table>
<thead>
<tr>
<th>Sector/Spending category</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motel, hotel cabin or B&amp;B</td>
<td>9,175</td>
<td>120</td>
<td>2,337</td>
<td>4,872</td>
</tr>
<tr>
<td>Camping fees</td>
<td>31,185</td>
<td>449</td>
<td>8,229</td>
<td>13,007</td>
</tr>
<tr>
<td>Restaurants &amp; bars</td>
<td>54,533</td>
<td>1,092</td>
<td>18,237</td>
<td>28,374</td>
</tr>
<tr>
<td>Admissions &amp; fees</td>
<td>14,758</td>
<td>359</td>
<td>3,604</td>
<td>8,216</td>
</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>9,661</td>
<td>235</td>
<td>2,359</td>
<td>5,378</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>13,956</td>
<td>273</td>
<td>6,870</td>
<td>10,112</td>
</tr>
<tr>
<td>Gas stations</td>
<td>10,853</td>
<td>168</td>
<td>4,094</td>
<td>7,406</td>
</tr>
<tr>
<td>Other retail</td>
<td>9,754</td>
<td>207</td>
<td>4,233</td>
<td>7,211</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>6,024</td>
<td>46</td>
<td>2,093</td>
<td>4,473</td>
</tr>
<tr>
<td>Local production of goods</td>
<td>2,635</td>
<td>9</td>
<td>347</td>
<td>597</td>
</tr>
<tr>
<td><strong>Total Direct Effects</strong></td>
<td>$162,534</td>
<td>2,957</td>
<td>$52,403</td>
<td>$89,646</td>
</tr>
<tr>
<td>Secondary Effects</td>
<td>56,159</td>
<td>559</td>
<td>15,494</td>
<td>32,746</td>
</tr>
<tr>
<td><strong>Total Effects</strong></td>
<td>$218,692</td>
<td>3,517</td>
<td>$67,897</td>
<td>$122,392</td>
</tr>
<tr>
<td>Multiplier</td>
<td>1.35</td>
<td>1.19</td>
<td>1.30</td>
<td>1.37</td>
</tr>
</tbody>
</table>
Table 10—Economic contribution to local communities from Oregon State Parks visitor spending, South Coast zone, 2011

<table>
<thead>
<tr>
<th>Sector/Spending category</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motel, hotel cabin or B&amp;B</td>
<td>4,752</td>
<td>62</td>
<td>1,211</td>
<td>2,524</td>
</tr>
<tr>
<td>Camping fees</td>
<td>13,368</td>
<td>192</td>
<td>3,528</td>
<td>5,576</td>
</tr>
<tr>
<td>Restaurants &amp; bars</td>
<td>22,235</td>
<td>445</td>
<td>7,436</td>
<td>11,569</td>
</tr>
<tr>
<td>Admissions &amp; fees</td>
<td>4,894</td>
<td>119</td>
<td>1,195</td>
<td>2,724</td>
</tr>
<tr>
<td>Recreation &amp; entertainment</td>
<td>3,512</td>
<td>85</td>
<td>857</td>
<td>1,955</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>7,360</td>
<td>144</td>
<td>3,623</td>
<td>5,333</td>
</tr>
<tr>
<td>Gas stations</td>
<td>5,775</td>
<td>89</td>
<td>2,179</td>
<td>3,941</td>
</tr>
<tr>
<td>Other retail</td>
<td>4,112</td>
<td>87</td>
<td>1,784</td>
<td>3,040</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>3,077</td>
<td>23</td>
<td>1,069</td>
<td>2,285</td>
</tr>
<tr>
<td>Local production of goods</td>
<td>1,379</td>
<td>5</td>
<td>181</td>
<td>312</td>
</tr>
<tr>
<td><strong>Total Direct Effects</strong></td>
<td><strong>$70,464</strong></td>
<td><strong>1,253</strong></td>
<td><strong>$23,063</strong></td>
<td><strong>$39,258</strong></td>
</tr>
<tr>
<td>Secondary Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Effects</strong></td>
<td><strong>$94,920</strong></td>
<td><strong>1,496</strong></td>
<td><strong>$29,810</strong></td>
<td><strong>$53,504</strong></td>
</tr>
</tbody>
</table>

Collectively, the direct spending of visitors to Oregon State Parks units in the Coastal Region supports about 5,534 full and part time jobs, $99 million in labor income, and $169 million in value added (Table 11). The secondary activity generated from visitor spending increases sales by about $105 million, supports an additional 1,051 full and part-time jobs, and $29 million in income.

Table 11—Economic contribution to local communities from Oregon State Parks visitor spending, Coastal Region total, 2011

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Effects</td>
<td>$305,586</td>
<td>5,534</td>
<td>$99,046</td>
<td>$169,154</td>
</tr>
<tr>
<td>Secondary Effects</td>
<td>105,586</td>
<td>1,051</td>
<td>29,121</td>
<td>61,557</td>
</tr>
<tr>
<td><strong>Total Effects</strong></td>
<td><strong>$411,172</strong></td>
<td><strong>6,585</strong></td>
<td><strong>$128,167</strong></td>
<td><strong>$230,711</strong></td>
</tr>
</tbody>
</table>
The more than 400,000 visits to Milo McIver State Park generate about $4.1 million in direct sales and support 61 full and part-time jobs in the communities around the Park (Table 12). The secondary economic activity from spending by visitors to the Park generates an additional $2.6 million in sales and supports an additional 23 full and part-time jobs.

Table 12—Economic contribution to local communities Oregon State Parks spending, Milo McIver State Park, 2011

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direct</td>
<td>$4,084</td>
<td>61</td>
<td>$1,477</td>
<td>$2,397</td>
</tr>
<tr>
<td>Secondary</td>
<td>2,590</td>
<td>23</td>
<td>873</td>
<td>1,631</td>
</tr>
<tr>
<td>Total Effects</td>
<td>$6,674</td>
<td>84</td>
<td>$2,350</td>
<td>$4,028</td>
</tr>
</tbody>
</table>

Economic impact of Oregon State Parks visitors

The primary difference between economic contribution and economic impact analyses is the inclusion of spending by local residents in the former analysis. Economic impact analysis attempts to quantify the economic activity generated from “new” money brought to the region. Economic impact analysis attempts to quantify the amount of economic activity that would be lost to the region were the attraction not present. In this analysis, we include the 90% of non-primary visits that are associated with non-locals. As in all other analyses, we apply the average spending of day visitors already in the area to non-primary visits. The economic impact of Coastal Region visitation results in about $276 million in direct sales, supports 4,990 full and part-time jobs, and generates about $89 million in labor income (Table 13). Secondary economic activity from non-local visitor spending generates an additional $95 million in sales and supports an additional 952 full and part-time jobs.

Table 13—Economic impact to local communities from Oregon State Parks visitor spending, Coastal Region total, 2011

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sales $000’s</th>
<th>Jobs</th>
<th>Labor Income $000’s</th>
<th>Value Added $000’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direct</td>
<td>$275,869</td>
<td>4,990</td>
<td>$89,217</td>
<td>$152,262</td>
</tr>
<tr>
<td>Secondary</td>
<td>95,561</td>
<td>952</td>
<td>26,374</td>
<td>55,714</td>
</tr>
<tr>
<td>Total Effects</td>
<td>$371,430</td>
<td>5,942</td>
<td>$115,591</td>
<td>$207,976</td>
</tr>
</tbody>
</table>
**Unit-level reporting**

Unit-level estimates of economic activity are desirable for a variety of local management purposes. In 2011, only a portion of the Oregon State Parks units within each of the Coastal Region zones underwent visitor sampling. Lacking survey data for each individual unit, we assume that the average spending of visitors and the distribution of trip types at unsampled units is similar to that observed at nearby sampled units. Average spending, within trip type, likely varies little across sites located within the same coastal zone. For example, the average spending of local day visitors at an unsampled unit is likely similar to the average spending of local day visitors at a nearby sampled unit. The distribution of trip types is more likely to differ meaningfully between sampled and unsampled units. In computing unit-level spending, we assume that the trip-type distribution at unsampled units is represented by the zonal average trip type distribution (e.g., the North Coast zone) estimated from nearby sampled units. The transferability of trip-type distribution may be limited for sites such as waysides and small facilities used primarily as intermediate stops on recreation trips. We control for differences across all units related to the presence of a campground within the unit.

Unit-level estimates represent the economic activity generated in the local communities around the individual units (Table 14). Results for individual units can be summed to represent the regional totals. Economic activity generated in communities around units is reported both in terms of economic contribution and economic impact. The economic impact results are computed based only on the spending of non-local visitors. The magnitude of economic activity generated around individual units traces mostly to the amount of recreation use at the unit and the presence of a campground.
Table 14—Unit-level economic activity generated from recreation visitor trip spending, 2011

<table>
<thead>
<tr>
<th>Unit</th>
<th>Day visits</th>
<th>Overnight visits</th>
<th>Total spending ($000's)</th>
<th>Total spending—non-locals ($000's)</th>
<th>Economic contribution</th>
<th>Economic impact (non-local visitors only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Coast zone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARCADIA BEACH SRS</td>
<td>287,292</td>
<td></td>
<td>5,599</td>
<td>5,171</td>
<td>72</td>
<td>1,386</td>
</tr>
<tr>
<td>BOB STRAUB SP</td>
<td>128,808</td>
<td></td>
<td>2,510</td>
<td>2,319</td>
<td>32</td>
<td>621</td>
</tr>
<tr>
<td>BRADLEY SSV</td>
<td>96,956</td>
<td></td>
<td>1,889</td>
<td>1,745</td>
<td>24</td>
<td>468</td>
</tr>
<tr>
<td>CAPE LOOKOUT SP</td>
<td>132,484</td>
<td>108,002</td>
<td>8,338</td>
<td>7,829</td>
<td>111</td>
<td>2,178</td>
</tr>
<tr>
<td>CAPE MEARES SSV</td>
<td>421,352</td>
<td></td>
<td>8,211</td>
<td>7,585</td>
<td>106</td>
<td>2,033</td>
</tr>
<tr>
<td>CLAY MYERS SNA AT WHALEN ISLAND</td>
<td>54,660</td>
<td></td>
<td>1,065</td>
<td>984</td>
<td>14</td>
<td>264</td>
</tr>
<tr>
<td>DEL REY BEACH SRS</td>
<td>89,468</td>
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<td>Economic impact (non-local visitors only)</td>
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Table 14 (cont.)—Unit-level economic activity generated from recreation visitor trip spending, 2011

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<th>Overnight visits</th>
<th>Total spending ($000’s)</th>
<th>Total spending—non-locals ($000’s)</th>
<th>Economic contribution</th>
<th>Economic impact (non-local visitors only)</th>
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Limitations

This analysis incorporates a large volume of data collected from a variety of Oregon State Parks units. The estimates of average visitor spending are computed from several thousand survey responses. To estimate average visitor spending and total spending attributable to Oregon State Parks units, we follow the framework adopted by the USDA Forest Service and the National Park Service. Many of the uncertainties and errors in recreation economic impact studies tend to inflate impact estimates (Stynes and White 2006). To counter that general pattern, we have adopted a conservative approach to estimating visitor spending and the attribution of visitor spending. The estimates of average spending found in this study are consistent with those reported for the USDA Forest Service and National Park Service (White and Stynes 2010, Stynes 2011). The numbers of recreation visits at each unit are Oregon State Parks estimates developed using established internal procedures.

In some cases, visitors may enter and exit units multiple times in a single day during a single visit or may complete visits to a single unit on consecutive days in conjunction with an overnight stay (e.g., at a hotel) in the local area. Multiple entries and exits on a given day during a single visit have the potential to inflate the estimate of the number of actual visits, and thereby the estimates of total spending, received at a unit. To the extent re-entry is not corrected for in the existing visit estimates, the estimates of total spending may be inflated. The spending averages for overnight visitors represent spending in the local area during the entire trip. To the extent that some visitors might stay overnight in hotels or motels (a single trip), but enter the same unit on multiple consecutive days (multiple visits), the estimate of total spending may be inflated. Re-entry to the same unit on consecutive days during the same trip likely presents little issue for the units considered here.

There are numerous Oregon State Parks units located along the Oregon Coast. Given the proximity of units to one another, it is possible for individuals to complete visits to multiple units during a trip to the coast. When multiple units are visited on a single trip, it makes it difficult to attribute visitor spending across the units. In addition, in some cases when the units are within 30 miles of each other, visits to multiple units on the same trip could lead to double-counting of trip expenditures, i.e., average visitor spending for the trip is applied to each unit’s visit. From the current survey data, we are unable to determine the extent of multi-unit visitation. There is the potential for some double counting of expenditures. However, our conservative treatment of non-primary visits (where multi-unit visits would likely be classified) dampens the potential magnitude of double counting.

A subset of units along the coast was sampled in 2011. To develop estimates for all units collectively and for units not sampled, we assume the distribution of trip types at units not sampled can be represented by the sampled units. The trip-type distributions for the North,
Central, and South coast zones are generally similar. Given that stability, we expect the trip-type distributions to be stable across most units along the coast. For some distinct types of units, such as waysides or historical sites, the trip-type distribution may not fully represent the types of trips those units receive. Likely, the standard trip-type distribution underestimates the share of non-primary trips to those locations.

To estimate the economic activity in rural communities associated with Oregon State Parks visitor spending, we must rely on models of the economies of those communities. In any application, the extent to which the model is an adequate representation of reality influences the accuracy of model results. In this study, we have relied on an established modeling system, the Money Generation Model-version 2. That modeling system has been used for a variety of applications at the federal, state, and local levels.

To estimate the average spending of recreation visitors, we rely on data collected from a sample of recreation visitors. The percent errors (or size of the 95% confidence intervals relative to the estimated means) of our estimated figures are in most cases 10% to 25% (tables 1 – 4). The interpretation of the percent error is that we are 95% confident that the true average spending is, in most cases, within 10% to 25% of our estimated mean. For a few spending averages, small sample sizes lead to percent errors of more than 30%. The percent errors found in this study are fairly typical of those found for outdoor recreation visitor spending.

It is not common practice to place confidence intervals on estimates of economic contribution or impact. Regardless, we are not able to do so in this case because variance estimates were not provided for Oregon State Parks visitation figures. Further, the variance patterns around the spending averages reported above do not trace though linearly to the contribution and impact estimates from the economic model. The reasonableness of the estimated economic effects is frequently judged based on the statistical confidence regarding the inputs (i.e., average visitor spending and recreation use estimates). In this analysis we have relied on response coefficients to estimate economic activity (see Appendix). Because we do that, one could estimate economic activity across a range of visitation figures. This allows a user to get some idea of how sensitive estimates of economic activity are to changes in input assumptions.

Expenditures by Oregon State Parks to operate and staff units also create economic activity in local communities. We have not estimated that economic activity here. However, we do model the economic activity generated from expenditures for campground fees. The fees we estimate here are collected by Oregon State Parks as well as private campgrounds and other public campgrounds. Campground fees collected by Oregon State Parks are largely spent in the local area by the same unit for campground operation. Because of how we have handled campground fees, those “operation” expenditures by Oregon State Parks are represented partially in this analysis. Because it would lead to some double counting, the economic activity results reported here should not be added directly to any estimates of economic activity developed for Oregon State Parks operations and staffing.
References


Appendix—Analytical methods

Data for estimating visitor spending

We adopted a variety of rules for data cleaning and exclusion in developing visitor spending averages. The rules we have adopted in this analysis are consistent with those used in estimating visitor spending for the USDA Forest Service and National Park Service. The data contained 2,769 observations where expenditures in all categories were blank. When presented with missings across all spending variables one must decide if those missings represent zero spending or a respondent who did not wish to report their spending. In these spending averages, we have filled all missing spending variable observations with zeros. All else being equal, that will reduce estimated average spending. However, we have also identified 1,130 observations where the spending responses were missing because the respondent appeared to stop taking the survey (based on their non-response to a series of questions). We have not included those 1,130 cases in these estimates.

In addition to handling missings, we also adopted rules to minimize the influence of contaminant and outlier observations. Contaminants are observations that do not belong to the population or are erroneous observations. An observation that includes spending that actually occurred outside the 30-mile radius around the recreation site or an observation that misplaces the decimal point when reporting an expense (i.e., 1,000.00 dollars versus 10.00) are both examples of contaminants. An outlier is an observation that does belong to the population under study but has undue influence on the estimation of the sample mean given the size of the sample. For example, some day visitors may spend $800 during an outdoor recreation trip, but such spending is uncommon and the vast majority of visitors spend substantially less or nothing at all (Stynes and White 2006). When sample sizes are small, outlier observations can significantly influence the estimate of the sample mean.

In these spending averages, we excluded observations under the following conditions:

- The number of nights spent away from home in the local area was greater than 30,
- The reported size of the group was greater than 10 individuals,
- Spending per day/night was greater or equal to $500 or spending on recreation and equipment rental was greater or equal to $500 in total,
- Cases we could not classify as local or non-local or if the respondent did not state if nights were spent in the local area.
Table 15—Cases excluded from analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>All surveyed cases</td>
<td>9,953</td>
</tr>
<tr>
<td>Respondents only partially completing survey</td>
<td>1,130</td>
</tr>
<tr>
<td>Outlier and contaminant cases</td>
<td>2,185</td>
</tr>
<tr>
<td>Nights spent locally &gt; 30</td>
<td>30</td>
</tr>
<tr>
<td>Group size &gt; 10</td>
<td>1,140</td>
</tr>
<tr>
<td>Spending per night &gt;= 500 or recreation equipment expenses &gt;= 500</td>
<td>1,015</td>
</tr>
<tr>
<td>Unable to classify into a visitor segment</td>
<td>343</td>
</tr>
<tr>
<td>Did not answer if any nights were spent locally</td>
<td>235</td>
</tr>
<tr>
<td>Could not classify as local or non-local</td>
<td>108</td>
</tr>
<tr>
<td><strong>Cases for economic analysis</strong></td>
<td>6,295</td>
</tr>
</tbody>
</table>

Determining trip-type distribution and average party size

Visit estimates for year 2011 were provided for individual units by Oregon State Parks. Visits were reported separately for day use areas and overnight facilities of individual units. In the sampling effort, visitors within day use areas were surveyed on-site via intercept sampling; visitors using overnight facilities were surveyed online using reservation records. From those separate samples of day use area and overnight visitors, we determined the shares of survey respondents completing day and overnight trips, the share of local and non-local visitors, and the share of non-primary visitors. For day-use-only units, we distributed visits into trip types using only responses from those individuals sampled at day use units. For units with both day- and overnight-use areas, we apportioned day visits across trip types using the day use area sample and overnight visits across trip type using the overnight use sample. In determining the trip-type distribution, we assumed that we have a representative sample of visits to Oregon State Parks units.

To estimate total spending, the estimates of recreation use and average visitor spending must be placed in the same units. For this study we have converted visits to party visits using estimates of average party size, within trip type. Average party size estimates were computed for Milo McIver State Park and each coastal zone using the collected survey data (Table 16).

Table 16—Average number of visitors per party, by trip type

<table>
<thead>
<tr>
<th>Area</th>
<th>Non-local Day</th>
<th>Local Day</th>
<th>Non-local Overnight</th>
<th>Local Overnight</th>
<th>Non-primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milo McIver SP</td>
<td>3.2</td>
<td>3.5</td>
<td>3.7</td>
<td>3.8</td>
<td>3.0</td>
</tr>
<tr>
<td>North Coast</td>
<td>3.9</td>
<td>3.7</td>
<td>4.0</td>
<td>4.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Central Coast</td>
<td>3.7</td>
<td>2.9</td>
<td>4.2</td>
<td>4.2</td>
<td>3.4</td>
</tr>
<tr>
<td>South Coast</td>
<td>4.0</td>
<td>3.3</td>
<td>3.8</td>
<td>3.8</td>
<td>3.1</td>
</tr>
</tbody>
</table>
Response coefficients for economic analysis

To accommodate a range of options for completing analyses for individual units or in aggregate and to facilitate excluding particular trip types (e.g., visits from local residents) we used response coefficients to estimate economic activity generated by visitor spending. Response coefficients relate a given number of visits (e.g., 10,000 party visits) or amount of spending (e.g., $1 million in spending) to the response in the local economy. Separate sets of response coefficients were estimated for each coastal zone and Milo McIver State Park within the Money Generation Model—version 2. Year 2010 multipliers representing generic rural economies were used for analyses of Coastal Region units. Year 2010 multipliers representing generic small metro areas were used for analyses of Milo McIver State Park. To match the multiplier year, average spending figures were deflated to 2010 dollars using Bureau of Labor Statistics price indices for the economic sectors related to visitor spending. The response coefficients (on a 10,000-party-visit basis) used for this analysis are reported in tables 17 through 20. The availability of the response coefficients allow for revision of the economic contribution or impact analysis given revised visitation estimates or with changes in the types of trips included (e.g., only overnight trips).

Table 17—Response coefficients by trip type for Milo McIver State Park, per 10,000 party visits in each trip type

<table>
<thead>
<tr>
<th></th>
<th>Non-local Day</th>
<th>Local Day</th>
<th>Non-local Overnight</th>
<th>Local Overnight</th>
<th>Non-primary*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Economic effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$218</td>
<td>$218</td>
<td>1,003</td>
<td>$938</td>
<td>$218</td>
</tr>
<tr>
<td>Jobs</td>
<td>3</td>
<td>3</td>
<td>14</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$77</td>
<td>$77</td>
<td>$370</td>
<td>$351</td>
<td>$77</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$131</td>
<td>$131</td>
<td>$569</td>
<td>$530</td>
<td>$131</td>
</tr>
<tr>
<td><strong>Total Economic Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$347</td>
<td>$347</td>
<td>$1,681</td>
<td>$1,588</td>
<td>$347</td>
</tr>
<tr>
<td>Jobs</td>
<td>5</td>
<td>5</td>
<td>20</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$120</td>
<td>$120</td>
<td>$601</td>
<td>$574</td>
<td>$120</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$213</td>
<td>$213</td>
<td>$996</td>
<td>$940</td>
<td>$213</td>
</tr>
</tbody>
</table>

* We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.
Table 18—Response coefficients by trip type for the North Coast zone, per 10,000 party visits in each trip type

<table>
<thead>
<tr>
<th>Direct Economic effects</th>
<th>Non-local Day</th>
<th>Local Day</th>
<th>Non-local Overnight</th>
<th>Local Overnight</th>
<th>Non-primary&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales ($000’s)</td>
<td>$455</td>
<td>$243</td>
<td>1,554</td>
<td>$832</td>
<td>$243</td>
</tr>
<tr>
<td>Jobs</td>
<td>9</td>
<td>5</td>
<td>27</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$151</td>
<td>$82</td>
<td>$490</td>
<td>$260</td>
<td>$82</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$262</td>
<td>$141</td>
<td>$833</td>
<td>$451</td>
<td>$141</td>
</tr>
<tr>
<td><strong>Total Economic Effects</strong></td>
<td><strong>Sales ($000’s)</strong></td>
<td>$601</td>
<td>$321</td>
<td>$2,115</td>
<td>$1,128</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>5</td>
<td>32</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>$190</td>
<td>$104</td>
<td>$646</td>
<td>$342</td>
<td>$104</td>
</tr>
<tr>
<td></td>
<td>$348</td>
<td>$186</td>
<td>$1,159</td>
<td>$623</td>
<td>$186</td>
</tr>
</tbody>
</table>

<sup>a</sup> We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.
Table 19—Response coefficients by trip type for the Central Coast zone, per 10,000 party visits in each trip type

<table>
<thead>
<tr>
<th></th>
<th>Non-local Day</th>
<th>Local Day</th>
<th>Non-local Overnight</th>
<th>Local Overnight</th>
<th>Non-primary&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Economic effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$433</td>
<td>$139</td>
<td>1,769</td>
<td>$832</td>
<td>$139</td>
</tr>
<tr>
<td>Jobs</td>
<td>9</td>
<td>3</td>
<td>31</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$143</td>
<td>$47</td>
<td>$560</td>
<td>$260</td>
<td>$47</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$246</td>
<td>$81</td>
<td>955</td>
<td>$451</td>
<td>$81</td>
</tr>
<tr>
<td><strong>Total Economic Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$572</td>
<td>$183</td>
<td>$2,399</td>
<td>$1,128</td>
<td>$183</td>
</tr>
<tr>
<td>Jobs</td>
<td>10</td>
<td>3</td>
<td>37</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$180</td>
<td>$59</td>
<td>$735</td>
<td>$342</td>
<td>$59</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$327</td>
<td>$107</td>
<td>$1,322</td>
<td>$623</td>
<td>$107</td>
</tr>
</tbody>
</table>

<sup>a</sup> We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.
Table 20—Response coefficients by trip type for the South Coast zone, per 10,000 party visits in each trip type

<table>
<thead>
<tr>
<th></th>
<th>Non-local Day</th>
<th>Local Day</th>
<th>Non-local Overnight</th>
<th>Local Overnight</th>
<th>Non-primary&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Economic effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$362</td>
<td>$117</td>
<td>1,628</td>
<td>$832</td>
<td>$117</td>
</tr>
<tr>
<td>Jobs</td>
<td>7</td>
<td>2</td>
<td>28</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$122</td>
<td>$42</td>
<td>$516</td>
<td>$260</td>
<td>$42</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$208</td>
<td>$70</td>
<td>$880</td>
<td>$451</td>
<td>$70</td>
</tr>
<tr>
<td><strong>Total Economic Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales ($000’s)</td>
<td>$478</td>
<td>$155</td>
<td>$2,207</td>
<td>$1,128</td>
<td>$155</td>
</tr>
<tr>
<td>Jobs</td>
<td>8</td>
<td>3</td>
<td>34</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Personal Income ($000’s)</td>
<td>$153</td>
<td>$52</td>
<td>$677</td>
<td>$342</td>
<td>$52</td>
</tr>
<tr>
<td>Value added ($000’s)</td>
<td>$276</td>
<td>$93</td>
<td>$1,217</td>
<td>$623</td>
<td>$93</td>
</tr>
</tbody>
</table>

<sup>a</sup>We apply the average spending for local day trips to non-primary visits. Local day trip spending is a conservative estimate of the additional marginal expenses associated with visiting an Oregon State Parks unit when already in the area for some other reason.