

2016 UPDATED

## RECREATION USE VALUES DATABASE – SUMMARY

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Welcome to the Recreation Use Values Database (RUVD) for North America. What you will find here are links to the database, bibliography, and background information. If you have questions, comments and/or suggestions about the RUVD, would like assistance in using it for benefit transfer, or would like to submit documentation on North American studies not in it, please contact Dr. Randall Rosenberger ([R.Rosenberger@oregonstate.edu](mailto:R.Rosenberger@oregonstate.edu)).

We also are interested in how you apply benefit transfer for recreation valuation, so please submit documentation about your applications.

The RUVD (2016 update) currently contains 421 documents of economic valuation studies that estimated the use value of recreation activities in the U.S. and Canada from 1958 to 2015, totaling 3,192 estimates in per person per activity day units, adjusted to 2016 USD. Twenty-one primary activity types are provided, with several more available if segregated by activity mode, resource type, primary species sought, or little studied activities (i.e., ‘other recreation’ has an additional 22 activities identified).

These recreation use value estimates are measures of net willingness-to-pay or consumer surplus for recreational access to specific sites, or for certain activities at broader geographic scales (e.g., state or province, national) in per person per activity day units—the RUVD does not contain information on marginal values for changes in site quality or condition.

The RUVD is currently offered as an Excel workbook containing the database and coding protocols. It is currently sorted by primary activity by region—of course, you may download and sort it however you wish. The bibliography cross-references entries in the RUVD via the document code.

An overview of the RUVD is provided below, including distributions of estimates and studies, and mean values by activity type by region.

Figures 1 and 2 display the distribution of the number of studies and number of estimates per year, respectively. The spikes in the number of estimates correspond with the estimates provided from U.S. Fish and Wildlife's National Surveys on fishing, hunting and wildlife viewing.

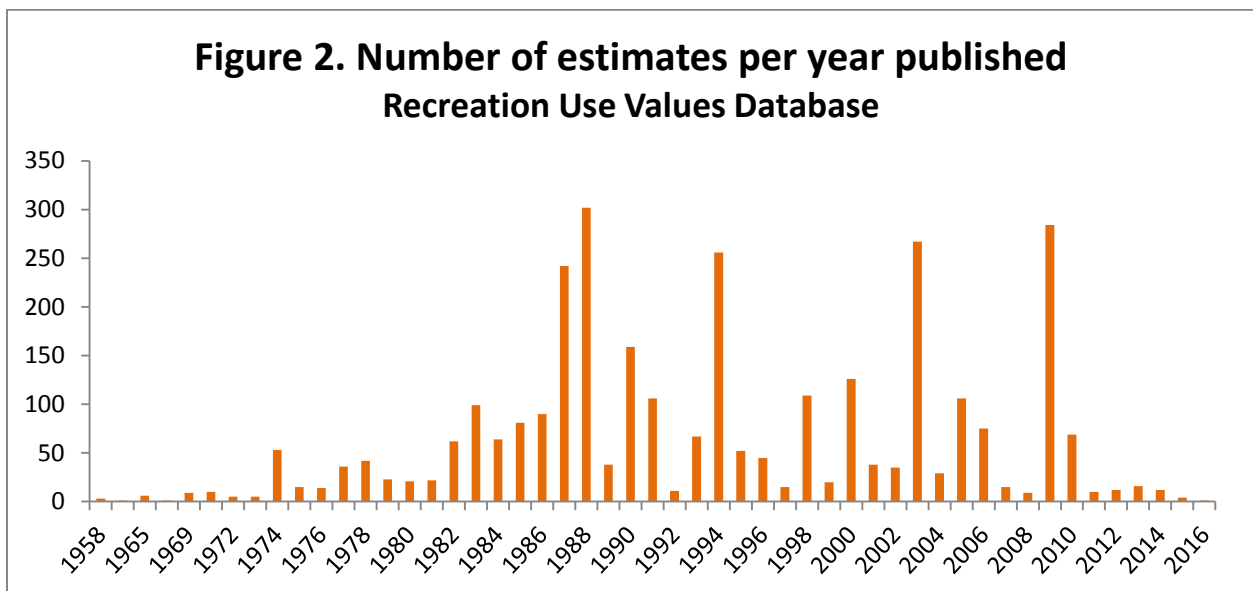
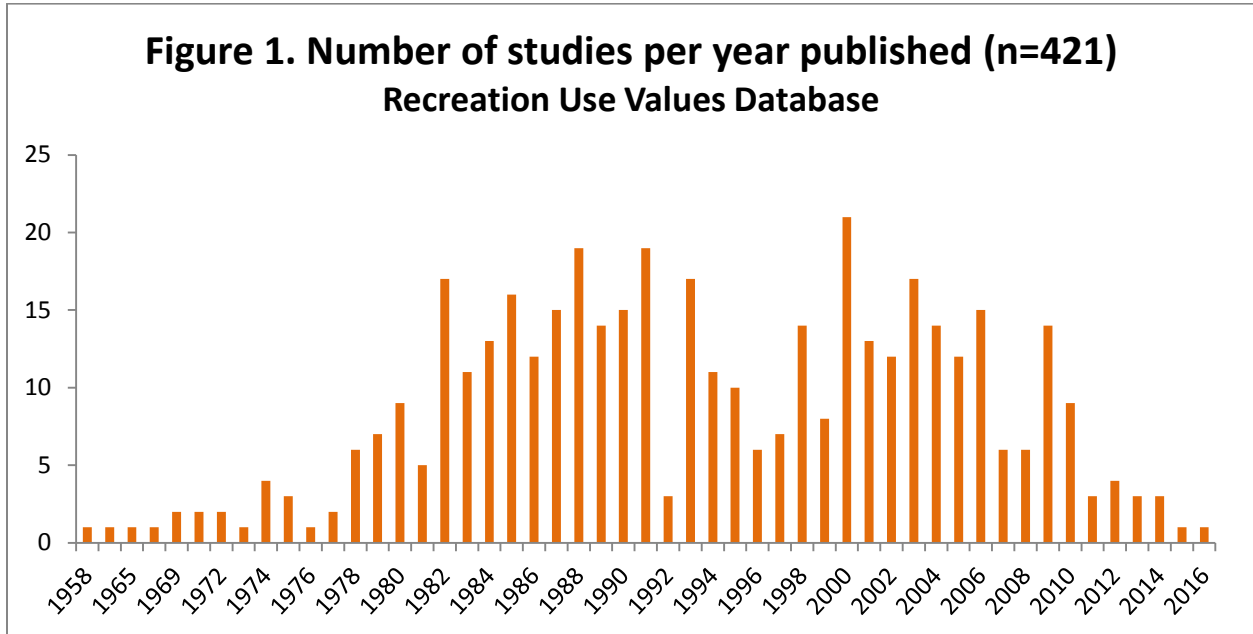


Figure 3 segregates the number of estimates by primary activity type. The spikes in number of estimates for freshwater fishing, big game hunting, and wildlife viewing coincide with the U.S. Fish and Wildlife's National Survey.

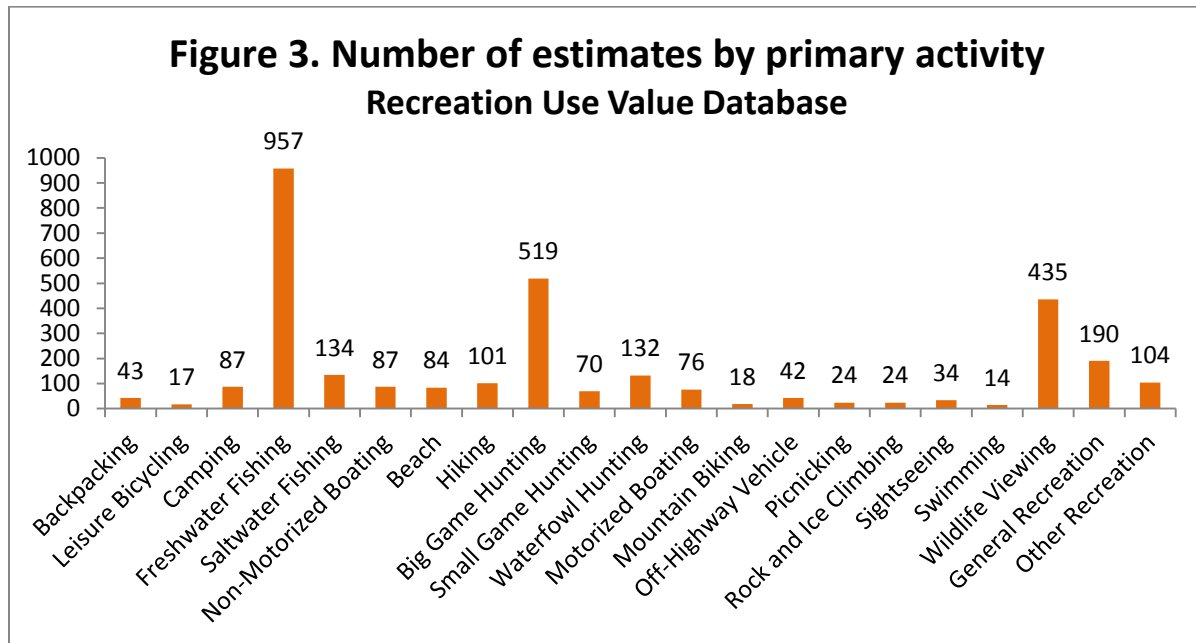


Figure 4 shows the distribution of consumer surplus estimates (\$CS per person per activity day in 2016 USD) (mean = \$69.05; median = \$46.99; se = 1.3; n = 3192).

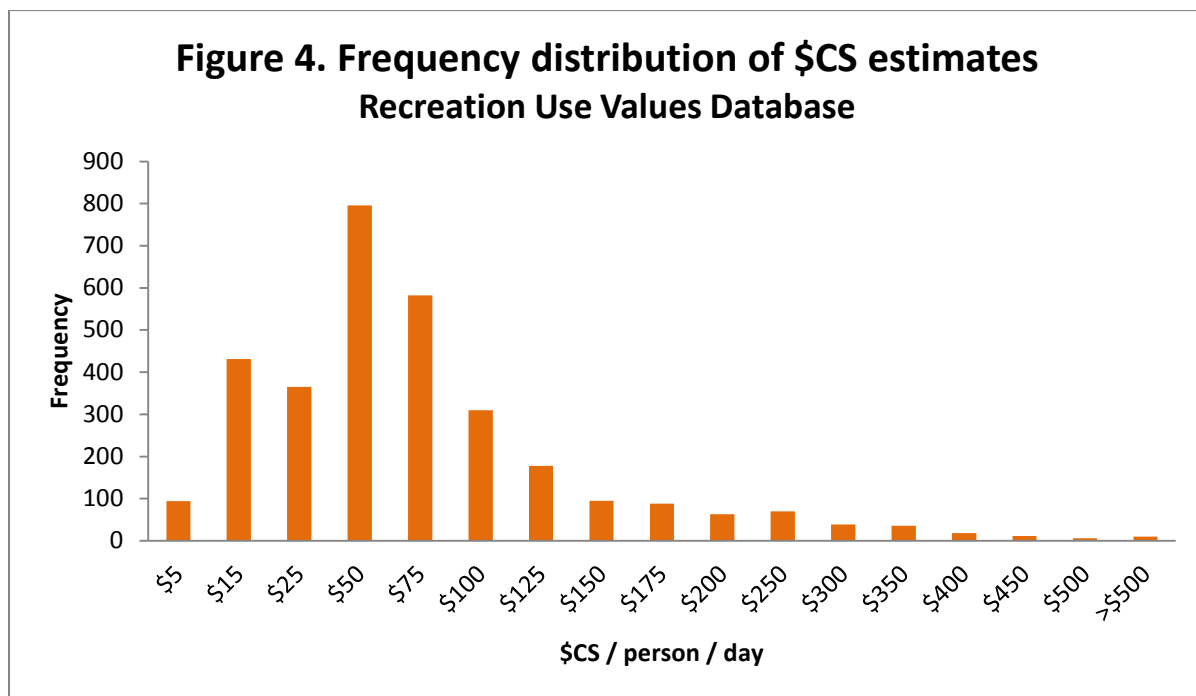


Figure 5 shows the mean consumer surplus (\$CS) per person per day by primary activity type.

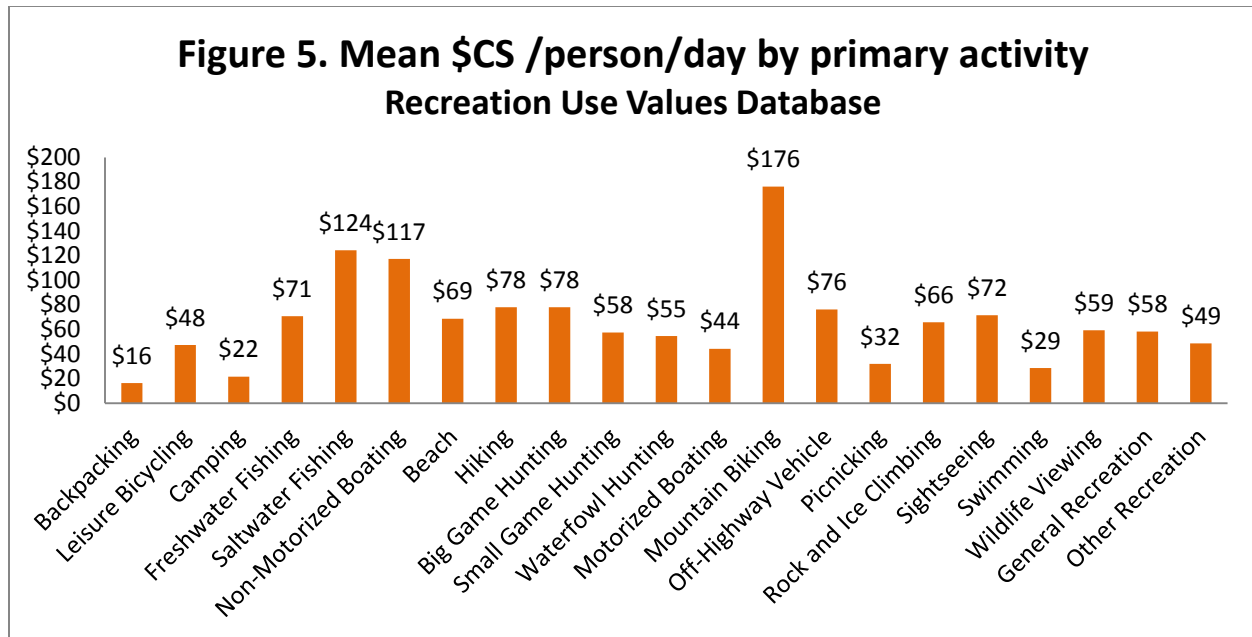


Table 1 reports mean consumer surplus (\$CS) per person per day by primary activity type and region. Reported are the number of estimates, mean \$CS, and standard error by cell. The bottom row aggregates by region whereas the last column aggregates by activity type. The overall aggregation for the database is reported in the lower right cell.

**TABLE 1. Recreation Use Values per Person per Day by Primary Activity and Region of Study, in 2016 USD<sup>a</sup>**

Activity	Northeastern U.S. <sup>b</sup>			Midwestern U.S. <sup>b</sup>			Southern U.S. <sup>b</sup>			Western U.S. <sup>b</sup>			Multiple Regions, U.S. <sup>b</sup>			Canada			Total		
	N	Mean	SE <sup>c</sup>	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE
<b>Backpacking</b>	31	\$8.84	0.6	0	---	---	5	\$39.37	9.0	3	\$34.28	13.4	4	\$32.92	7.2	0	---	---	<b>43</b>	<b>\$16.41</b>	<b>2.4</b>
<b>Leisure Bicycling</b>	0	---	---	6	\$40.13	6.0	10	\$53.92	10.8	0	---	---	1	\$27.96	0	0	---	---	<b>17</b>	<b>\$47.52</b>	<b>6.8</b>
<b>Camping</b>	9	\$23.97	7.7	3	\$10.79	3.9	11	\$12.66	2.1	59	\$23.73	3.2	5	\$21.99	1.6	0	---	---	<b>87</b>	<b>\$21.81</b>	<b>2.4</b>
<b>Freshwater Fishing<sup>d</sup></b>	154	\$79.74	5.6	215	\$47.83	4.0	181	\$62.72	4.0	363	\$88.20	4.2	23	\$62.28	10.1	21	\$17.91	5.6	<b>957</b>	<b>\$70.78</b>	<b>2.3</b>
<b>Saltwater Fishing<sup>d</sup></b>	21	\$82.04	16.2	0	---	---	56	\$126.96	20.4	47	\$149.00	17.5	10	\$83.92	28.5	0	---	---	<b>134</b>	<b>\$124.44</b>	<b>11.2</b>
<b>Nonmotorized Boating<sup>e</sup></b>	4	\$43.32	3.7	4	\$19.82	7.8	26	\$147.68	28.4	47	\$122.23	18.8	3	\$44.99	9.4	3	\$80.41	0.5	<b>87</b>	<b>\$117.39</b>	<b>13.7</b>
<b>Beach</b>	18	\$99.46	26.1	10	\$14.33	4.8	32	\$76.19	14.1	24	\$58.61	14.5	0	---	---	0	---	---	<b>84</b>	<b>\$68.79</b>	<b>9.1</b>
<b>Hiking</b>	2	\$72.56	56.1	2	\$36.43	29.8	12	\$108.05	37.0	81	\$73.98	9.2	4	\$99.42	28.1	0	---	---	<b>101</b>	<b>\$78.27</b>	<b>8.7</b>
<b>Big Game Hunting<sup>f</sup></b>	68	\$82.00	7.3	103	\$64.58	3.6	95	\$75.48	4.9	184	\$87.39	5.1	10	\$178.30	37.5	59	\$55.63	8.9	<b>519</b>	<b>\$78.11</b>	<b>2.8</b>
<b>Small Game Hunting<sup>f</sup></b>	9	\$34.05	11.5	3	\$53.35	29.7	1	\$196.47	0	34	\$79.89	16.3	6	\$81.14	12.1	17	\$9.40	1.0	<b>70</b>	<b>\$57.51</b>	<b>9.1</b>
<b>Waterfowl Hunting<sup>f</sup></b>	17	\$43.21	6.6	26	\$34.79	3.6	30	\$66.75	9.7	33	\$67.99	11.3	7	\$143.70	7.3	19	\$17.88	0.9	<b>132</b>	<b>\$54.78</b>	<b>4.4</b>
<b>Motorized Boating</b>	7	\$104.26	21.4	32	\$33.78	6.9	15	\$26.62	5.0	21	\$53.68	21.2	1	\$34.31	0	0	---	---	<b>76</b>	<b>\$44.36</b>	<b>7.2</b>
<b>Mountain Biking</b>	0	---	---	0	---	---	3	\$68.72	3.4	15	\$197.88	39.6	0	---	---	0	---	---	<b>18</b>	<b>\$176.35</b>	<b>34.84</b>
<b>Off-Highway Vehicle</b>	0	---	---	1	\$9.93	0	25	\$93.50	27.0	12	\$52.74	7.3	4	\$55.20	15.5	0	---	---	<b>42</b>	<b>\$76.21</b>	<b>16.5</b>
<b>Picnicking</b>	5	\$6.34	1.0	1	\$11.90	0	5	\$68.86	22.7	9	\$21.98	2.1	4	\$45.42	10.8	0	---	---	<b>24</b>	<b>\$31.98</b>	<b>6.6</b>
<b>Rock &amp; Ice Climbing</b>	1	\$66.11	0	0	---	---	3	\$194.62	37.1	16	\$55.02	4.6	4	\$12.60	0.8	0	---	---	<b>24</b>	<b>\$65.86</b>	<b>11.8</b>
<b>Sightseeing</b>	0	---	---	2	\$33.83	10.2	8	\$72.80	22.6	16	\$52.46	10.6	8	\$118.12	63.4	0	---	---	<b>34</b>	<b>\$71.60</b>	<b>19.6</b>

Activity	Northeastern U.S. <sup>b</sup>			Midwestern U.S. <sup>b</sup>			Southern U.S. <sup>b</sup>			Western U.S. <sup>b</sup>			Multiple Regions, U.S. <sup>b</sup>			Canada			Total		
	N	Mean	SE <sup>c</sup>	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE	N	Mean	SE
<b>Swimming</b>	2	\$33.03	19.6	1	\$22.01	0	2	\$15.06	3.7	8	\$31.63	7.9	1	\$31.15	0	0	---	---	14	\$28.74	5.1
<b>Wildlife Viewing<sup>g</sup></b>	61	\$59.78	5.6	72	\$51.96	5.8	112	\$58.35	5.2	126	\$78.62	6.4	22	\$64.63	11.3	42	\$13.30	2.6	435	\$59.33	2.8
<b>General Recreation<sup>h</sup></b>	3	\$34.53	23.3	17	\$152.64	25.0	46	\$69.56	12.0	98	\$36.68	4.4	6	\$99.04	39.5	20	\$49.33	14.8	190	\$58.25	5.3
<b>Other Recreation<sup>i</sup></b>	4	\$37.92	11.8	4	\$28.31	5.5	9	\$94.93	34.9	68	\$41.70	7.5	19	\$58.13	17.2	0	---	---	104	\$48.65	6.6
<b>TOTAL</b>	<b>416</b>	<b>\$67.34</b>	<b>3.2</b>	<b>502</b>	<b>\$52.21</b>	<b>2.5</b>	<b>687</b>	<b>\$74.75</b>	<b>3.2</b>	<b>1264</b>	<b>\$77.48</b>	<b>2.3</b>	<b>142</b>	<b>\$77.00</b>	<b>6.8</b>	<b>181</b>	<b>\$32.84</b>	<b>3.8</b>	<b>3192</b>	<b>\$69.05</b>	<b>1.3</b>

<sup>a</sup>Use value estimates are standardized to per person per day and adjusted to 2010 USD using U.S. consumer price index; Canadian estimates are adjusted to U.S. dollars using the current exchange rate at time of study. Use estimates measure access value and not marginal changes in site quality or condition. Estimates >\$500 per person per day or identified as bad estimates by the authors of primary studies were removed from the database.

<sup>b</sup>Regions are defined as U.S. Census regions. Multiple regions or U.S. are studies with scope of multiple Census regions or national.

<sup>c</sup>Standard errors (SE) may be used to calculate 95% confidence intervals about the mean values as approximately: mean +/- 2\* SE—although proceed with caution on confidence intervals for small N estimates.

<sup>d</sup>Freshwater and saltwater fishing values are not distinguished by resource type or primary species. See the database and study documents for more details regarding freshwater and saltwater fishing studies and values. See the database and study documents for more details regarding nonmotorized boating.

<sup>e</sup>Nonmotorized boating includes whitewater rafting/kayaking, canoeing, and rowing.

<sup>f</sup>Hunting values are not distinguished by resource type or primary species. See the database and study documents for more details regarding hunting values.

<sup>g</sup>Wildlife viewing values are not distinguished by resource type or primary species. See the database and study documents for more details regarding wildlife viewing values.

<sup>h</sup>General recreation is defined as primary studies that do not identify a primary activity.

<sup>i</sup>Other recreation is defined as activities with few primary studies, including cross-country skiing, downhill skiing, snowmobiling, snowboarding, shellfishing, jet skiing, scuba diving, snorkeling, water skiing, windsurfing, family gathering, horseback riding, jogging/running, walking, nature study, photography, gathering forest products, visiting nature centers, visiting arboretums, visiting historic sites, visiting prehistoric sites, and visiting aquariums. See the database and study documents for more details regarding other recreation values.