

DASHBOARD

Washington State Biosolids Statistics

Data Quality & Methods	2018	explanations & sources
<p>Quality & Confidence in this state's data:</p> <p>Data sources & methods:</p> <p>State biosolids included in 2018 EPA ECHO data</p>	<p>MODERATELY HIGH</p> <p><i>State biosolids coordinator, with decades of experience, tracks land application closely & compiles data electronically based on annual reports from WRRFs.</i></p> <p>124% % in ECHO vs. the total presented here</p>	<p>ranking by survey team based on information provided in survey (options: High, Moderate, Low, None)</p> <p>https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual</p>
<p>Demographics & Wastewater</p> <p>State population:</p> <p>Total land area in state (acres):</p> <p>Population density (persons/square mile):</p> <p>Total number of WRRFs reported in state survey:</p> <p>total number of WRRFs permitted/reported elsewhere:</p> <p>number of WRRFs in EPA ECHO reports for 2018:</p> <p>Average population served per WRRF:</p> <p>Average wastewater flow statewide (MGD, NBDP):</p> <p>avg.wastewater flow statewide (MGD, Seiple):</p> <p>Number of WRRFs that treat >75% of state flow:</p> <p>% of population served by on-site (septic) systems:</p> <p>Biosolids used or disposed / person in 2018 (lbs):</p>	<p>7,535,591</p> <p>42,531,840</p> <p>113.4</p> <p>330</p> <p>247</p> <p>71</p> <p>15,071</p> <p>no data</p> <p>660</p> <p>23</p> <p>34%</p> <p>28</p>	<p>U. S. Census estimate for July 1, 2018 https://www.census.gov/newsroom/prass-kits/2018/pop-estimates-national-state.html</p> <p>calculated</p> <p>survey response by state expert</p> <p>Seiple et al., 2020; state experts, etc. https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual</p> <p>calculated</p> <p>survey response by state expert</p> <p>Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852</p> <p>Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853</p> <p>survey response by state expert</p> <p>calculated</p>
<p>Biosolids Application</p> <p>Agricultural land cropland (acres):</p> <p>% of state area in cropland:</p> <p>Number of farms with that cropland:</p> <p>% cropland to which biosolids were applied (Class B biosolids only):</p> <p>Application rate if all state biosolids were applied to cropland (dry U.S. tons/ac.):</p> <p>% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):</p>	<p>7,488,625</p> <p>18%</p> <p>24,234</p> <p>0.24%</p> <p>0.01</p> <p>0.5%</p>	<p>https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3776-AF8B-624D88825822</p> <p>calculated</p> <p>https://quickstats.nass.usda.gov/results/F56563D1-C9CD-30FE-9274-2F91CC0649EC</p> <p>calculated</p> <p>calculated</p> <p>calculated</p>
<p>Nutrient Sources - Comparison</p> <p>Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):</p> <p>N in this state's animal manures (metric tonnes):</p> <p>N in this state's purchased fertilizer (metric tonnes, 2011):</p> <p>If all state's biosolids applied, what % of state's applied N would come from biosolids?</p> <p>Phosphorus (P) in this state's biosolids (metric tonnes, 2018):</p> <p>P in this state's animal manures (metric tonnes):</p>	<p>4,613</p> <p>63,537</p> <p>200,406</p> <p>2%</p> <p>1,922</p> <p>16,069</p>	<p>calculated assuming avg. 4.8% biosolids N https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure</p> <p>https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchase</p> <p>calculated</p> <p>calculated assuming avg. 2% biosolids P https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure</p>

<p>P in this state's purchased fertilizer (metric tonnes, 2011): If all state's biosolids applied, what % of state's applied P would come from biosolids?</p>	<p>18,352</p> <p>5%</p>	<p>https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased</p> <p>calculated</p>
<p>State Regulatory Involvement Biosolids oversight agency / division:</p> <p>Permitting.... of biosolids programs:</p> <p>...of land application sites: FTEs: state biosolids regulatory program: Biosolids program FTEs per million population: Enforcement: Inspections of biosolids facilities & field sites in 2018: Formal violations issued: Amount of state regulations beyond Part 503: Amount of state regulation of nutrient management & phosphorus: Accessibility of biosolids data to public: State encouragement of biosolids recycling to soils: Voluntary additional protections by land appliers known & reported by state coordinator:</p>	<p>Environment agency - solid waste program</p> <p>We use a modified general permit approach that incorporates site-specific plans and other elements which allow tailoring for individual treatment works. The general permit establishes the bulk of the baseline requirements for most facilities, but it is not a typical general permit.</p> <p>Our general permit requires site-specific plans for land appliers. They look and feel like typical site permits. They require additional public notice if not done with the initial application. In classic NPDES terms, think of the plans as permits.</p> <p>8</p> <p>1.06</p> <p>0</p> <p>0</p> <p>Moderate</p> <p>Low</p> <p>Moderate</p> <p>High (legislative mandate)</p> <p>Low</p>	<p>survey response by state expert</p> <p>calculated</p> <p>survey response by state expert</p> <p>survey response by state expert</p> <p>rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)</p>
<p>Trends New land application activity, 2018 - new permits & acreage, acres applied: acres applied in 2018: Local regulations & their impacts?: details... Legislative & state regulatory actions in 2018 & their impacts?: details... Biosolids beneficial use increasing... ..in 2018?: in 2020?: details...</p>	<p>Moderate</p> <p>18,000</p> <p>Some no activity in 2018</p> <p>None no activity in 2018</p> <p>It's staying the same.</p> <p>Don't know</p> <p>I think there is an inclination away from incineration in a couple of cases, but no commitment yet. The PFAS issue is not helping that.</p>	<p>rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)... With quotes of survey responses by state expert(s)</p> <p>survey response by state expert</p> <p>survey response by state expert</p>
<p>Changes in Biosolids Use & Disposal</p> <p>Change* in solids reported used or disposed (in units used by state): Beneficial Use - percentage point increase or decrease (-): Landfill & surface disposal - % point increase or decrease (-): Incineration - percentage point increase or decrease (-): Other - percentage point increase or decrease (-): Class A - percentage point increase or decrease (-): Class B - percentage point increase or decrease (-): No class or not known - percentage point increase or decrease (-):</p>	<p>(4,651)</p> <p>1%</p> <p>-1%</p> <p>1%</p> <p>-1%</p> <p>11%</p> <p>-13%</p> <p>2%</p>	<p>*Change may be due to population increase/decrease, change in treatment at a large WWTP, and/or different systems of data tracking and reporting.</p> <p>calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)</p>