

DASHBOARD

Rhode Island 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>HIGH</p> <p><i>State biosolids coordinator has many years experience; ECHO data corroborate state data.</i></p> <p>102% % in ECHO vs. the total presented here: Almost all RI WRRFs reported to ECHO. If all but ~5000 tons of Woonsocket solids are excluded because they are from out of state, data match up.</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>1,057,315</p> <p>661,760</p> <p>1,022.5</p> <p>20</p> <p>20</p> <p>16</p> <p>33,834</p> <p>120</p> <p>132</p> <p>5</p> <p>36%</p> <p>57</p>	<p>U.S. Census estimate for July 1, 2018</p> <p>https://www.census.gov/newsroom/press-kits/2018/pop-estimates-national-states.html</p> <p>calculated</p> <p>survey response by state expert</p> <p>Seiple et al., 2020; state experts, etc.</p> <p>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</p> <p>https://doi.org/10.1016/j.jenvman.2020.110852</p> <p>Seiple et al., 2020</p> <p>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:</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>17,654</p> <p>3%</p> <p>716</p> <p>little to none</p> <p>1.7</p> <p>56.7%</p>	<p>https://nri4states.nass.usda.gov/results/0CB8A084-6032-3776-A688-674f86825822</p> <p>calculated</p> <p>https://nri4states.nass.usda.gov/results/F56563D1-C9CD-30EF-9774-2F91CC0640EC</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>1,440</p> <p>495</p> <p>2,047</p> <p>36%</p> <p>600</p> <p>120</p>	<p>calculated assuming avg. 4.8% biosolids N</p> <p>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-purchase4</p> <p>calculated</p> <p>calculated assuming avg. 2% biosolids P</p> <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>201 65%</p>	<p>https://www.epa.gov/nutrientpolicy/data/commercial-fertilizer-purchase calculated</p>
<p>State Regulatory Involvement Biosolids oversight agency / division: Permitting... of biosolids programs: ...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 - water / wastewater program Non-NPDES permit (Order of Approval) Non-NPDES permit (Order of Approval) 0.1 0.09 21 inspections were at WRRFs & included solids 1 Moderate Low Low Low None</p>	<p>Environment agency - water / wastewater program survey response by state expert calculated survey response by state expert survey response by state expert 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>Low no data only 1 compost facility recycles biosolids to soils None no activity in 2018 None Unknown - has never occurred. It's staying the same. It's staying the same. Only 1 composting facility in state that distributes EQ biosolids and remains consistent year-to-year. Out of state preparers generally send same amount of EQ biosolids into RI each year.</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) survey response by state expert survey response by state expert</p>
<p>Changes in Biosolids Use & Disposal 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 (-): 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>2,573 dry metric tons -6% 1% 5% -6% 0% 6%</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. calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)</p>