

## DASHBOARD

## Delaware State Biosolids Statistics

Data Quality & Methods	2018	explanations & sources
<p><b>Quality &amp; Confidence in this state's data:</b> Data sources &amp; methods: State biosolids included in 2018 EPA ECHO data</p>	<p style="text-align: center;"><b>HIGH</b> <i>State biosolids coordinator has years of experience &amp; tracks land application closely.</i></p> <p>45% % in ECHO vs. the total presented here</p>	<p>ranking by survey team based on information provided in survey (options: High, Moderate, Low, None) <a href="https://echo.epa.gov/facilities/facility-search?mediaSelected=biolAnnual">https://echo.epa.gov/facilities/facility-search?mediaSelected=biolAnnual</a></p>
<p><b>Demographics &amp; Wastewater</b> State population: Total land area in state (acres): Population density (persons/square mile): Total number of WRRFs reported in state survey: total number of WRRFs permitted/reported elsewhere: number of WRRFs in EPA ECHO reports for 2018: <b>Average population served per WRRF:</b> <b>Average wastewater flow statewide (MGD):</b> reported by others: average MGD: <b>Number of WRRFs that treat &gt;75% of state flow:</b> <b>% of population served by on-site (septic) systems:</b> <b>Biosolids used or disposed / person in 2018 (lbs):</b></p>	<p>967,171 1,247,360 496.2 33 17 5 <b>42,669</b> <b>107</b> 104.11 <b>2</b> <b>25%</b> <b>57.55</b></p>	<p>U.S. Census estimate for July 1, 2018 <a href="https://www.census.gov/newsroom/press-kits/2018/pop-estimates-national-state.html">https://www.census.gov/newsroom/press-kits/2018/pop-estimates-national-state.html</a> calculated survey response by state expert Seiple et al., 2020 <a href="https://echo.epa.gov/facilities/facility-search?mediaSelected=biolAnnual">https://echo.epa.gov/facilities/facility-search?mediaSelected=biolAnnual</a> calculated survey response by state expert Seiple et al., 2020 <a href="https://doi.org/10.1016/j.jenvman.2020.110852">https://doi.org/10.1016/j.jenvman.2020.110852</a> Seiple et al., 2020 <a href="https://doi.org/10.1016/j.jenvman.2020.110853">https://doi.org/10.1016/j.jenvman.2020.110853</a> survey response by state expert calculated</p>
<p><b>Biosolids Application</b> Agricultural land cropland (acres): <b>% of state area in cropland:</b> Number of farms with that cropland: <b>% cropland to which biosolids were applied:</b> <b>Application rate if all state biosolids were applied to cropland (dry U.S. tons/ac.):</b> <b>% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):</b></p>	<p>452,211 <b>36%</b> 1,616 <b>no data</b> <b>0.06</b> <b>2.1%</b></p>	<p><a href="https://quickstats.nass.usda.gov/results/0CBAD84-6032-3776-4F8B-624DB8825822">https://quickstats.nass.usda.gov/results/0CBAD84-6032-3776-4F8B-624DB8825822</a> calculated <a href="https://quickstats.nass.usda.gov/results/F56563D1-C0CD-30FE-9774-2F91CC0640EC">https://quickstats.nass.usda.gov/results/F56563D1-C0CD-30FE-9774-2F91CC0640EC</a> calculated calculated calculated</p>
<p><b>Nutrient Sources - Comparison</b> Nitrogen (N) in all this state's biosolids (metric tonnes, 2018): N in this state's animal manures (metric tonnes): N in this state's purchased fertilizer (metric tonnes, 2011): <b>If all state's biosolids applied, what % of state's applied N would come from biosolids?</b> Phosphorus (P) in this state's biosolids (metric tonnes, 2018): P in this state's animal manures (metric tonnes): P in this state's purchased fertilizer (metric tonnes, 2011): <b>If all state's biosolids applied, what % of state's applied P would come from biosolids?</b></p>	<p>1,212 20,080 20,181 <b>3%</b> 505 5,944 1,425 <b>6%</b></p>	<p>calculated assuming avg. 4.8% biosolids N <a href="https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure">https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure</a> <a href="https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure">https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure</a> <a href="https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased">https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased</a> calculated calculated assuming avg. 2% biosolids P <a href="https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure">https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure</a> <a href="https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure">https://www.epa.gov/npdes/npdes-reporting-requirements-for-phosphorus-manure</a> <a href="https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased">https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased</a> calculated</p>
<p><b>State Regulatory Involvement</b> <b>Biosolids oversight agency / division:</b> Permitting.... of biosolids programs:</p>	<p style="text-align: center;"><b>Environment agency - water / wastewater program</b></p>	

<p>...of land application sites:  FTEs: state biosolids regulatory program:  <b>Biosolids program FTEs per million population:</b>  <b>Enforcement: Inspections of biosolids facilities &amp; field sites in 2018:</b>  <b>Formal violations issued:</b>  <b>Amount of state regulations beyond Part 503:</b>  <b>Amount of state regulation of nutrient management &amp; phosphorus:</b>  <b>Accessibility of biosolids data to public:</b>  <b>State encouragement of biosolids recycling to soils:</b>  Voluntary additional protections by land appliers known &amp; reported by state coordinator:</p>	<p>The permits for land application are similar to a NPDES permit but is not an actual NPDES permit</p> <p>0.6  <b>0.6</b>  <b>30</b>  <b>3</b></p> <p><b>High</b>  <b>Moderate</b>  <b>Low</b>  <b>High</b>  None</p>	<p>survey response by state expert calculated  survey response by state expert  survey response by state expert</p> <p>rankings by survey team based on information provided in survey (options: High, Moderate, Low, None) • DE requires groundwater monitoring at many permitted sites, odor control, soil sampling, only EQ can enter state, etc. - many additional requirements.</p>
<p><b>Trends</b>  <b>New land application activity, 2018 - new permits &amp; acreage, acres applied:</b>  acres applied in 2018:  <b>Local regulations &amp; their impacts?:</b>  details...  <b>Legislative &amp; state regulatory actions in 2018 &amp; their impacts?:</b>  details...  <b>Biosolids beneficial use increasing... ...in 2018?:</b>  <b>....in 2020?:</b>  details...</p>	<p><b>Low</b>  no data  <b>Some</b>  Conditional use zoning requirements are placed on applicaiton sties in some counties  <b>None</b>  no activity in 2018  <b>It's staying the same.</b>  <b>Yes</b>  Small overall increase.</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  survey response by state expert</p>
<p><b>Changes in Biosolids Use &amp; Disposal</b>  <b>Change* in solids reported used or disposed (in units used by state):</b>  <b>Beneficial Use - percentage point increase or decrease (-):</b>  <b>Landfill &amp; surface disposal - % point increase or decrease (-):</b>  <b>Incineration - percentage point increase or decrease (-):</b>  <b>Class A - percentage point increase or decrease (-):</b>  <b>Class B - percentage point increase or decrease (-):</b>  <b>No class or not known - percentage point increase or decrease (-):</b></p>	<p>4,688 dry U.S. tons  -19%  19%  0%  -58%  39%  19%</p>	<p>*Change may be due to population increase/decrease 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>