DASHBOARD

Maryland State Biosolids Statistics

NATIONAL BIOSOLIDS DATA PROJECT
biosolidsdata.org

Data Quality & Methods	2018	explanations & sources
Quality & Confidence in this state's data:	**Moderate**	ranking by survey team based on information provided in survey (options: High, Moderate, Low, None)
Data sources & methods:	*Data are primarily from U.S. EPA ECHO & a few NBDP survey data, with corroborating comparisons to MDE data for 2018 & 2019.*	
State biosolids included in 2018 EPA ECHO data	81% % in ECHO vs. the total presented here	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Demographics & Wastewater		
State population:	6,042,718	U.S. Census estimate for July 1, 2018 https://www.census.gov/newsroom/press-kits/2018/pop-estimates-national-state.html
Total land area in state (acres):	6,212,480	
Population density (persons/square mile):	622.5	calculated
Total number of WRRFs reported in state survey:	43	MDE data, 2019
total number of WRRFs permitted/reported elsewhere:	163	Seiple et al., 2020; state experts, etc.
number of WRRFs in EPA ECHO reports for 2018:	36	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Average population served per WRRF:	**29,658**	calculated
Average wastewater flow statewide (MGD, NBDP):	**425**	survey response by state expert
avg.wastewater flow statewide (MGD, Seiple):	459	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852
Number of WRRFs that treat >75% of state flow:	**11**	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853
% of population served by on-site (septic) systems:	**20%**	NBDP default estimate
Biosolids used or disposed / person in 2018 (lbs):	**37**	calculated
Biosolids Application		
Agricultural land cropland (acres):	1,426,671	https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3776-AFBB-624DB8825822
% of state area in cropland:	**23%**	calculated
Number of farms with that cropland:	9,233	https://quickstats.nass.usda.gov/results/F56563D1-C9CD-30EF-9774-2F91CC0640EC
% cropland to which biosolids were applied:	**no data**	calculated
Application rate if all state biosolids were applied to cropland (dry U.S. tons/ac.):	**0.08**	calculated
% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):	**2.6%**	calculated
Nutrient Sources - Comparison		
Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):	5,437	calculated assuming avg. 4.8% biosolids N
N in this state's animal manures (metric tonnes):	37,297	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
N in this state's purchased fertilizer (metric tonnes, 2011):	39,836	https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased
If all state's biosolids applied, what % of state's applied N would come from biosolids?	**6.6%**	calculated
Phosphorus (P) in this state's biosolids (metric tonnes, 2018):	2,266	calculated assuming avg. 2% biosolids P
P in this state's animal manures (metric tonnes):	10,548	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure

P in this state's purchased fertilizer (metric tonnes, 2011):	8,233	https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased
If all state's biosolids applied, what % of state's applied P would come from biosolids?	**10.8%**	calculated

State Regulatory Involvement

Biosolids oversight agency / division:	**Land & Materials Division of MD Department of Environment**	
Permitting.... of biosolids programs:	**See:** https://mde.maryland.gov/programs/land/RMP/Pages/sewagesludge.aspx	
...of land application sites:		
FTEs: state biosolids regulatory program:	1.5	NBDP estimate
Biosolids program FTEs per million population:	**0.25**	calculated
Enforcement: Inspections of biosolids facilities & field sites in 2018:	**no data**	
Formal violations issued:	**no data**	
Amount of state regulations beyond Part 503:	**High**	
Amount of state regulation of nutrient management & phosphorus:	**High**	rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)
Accessibility of biosolids data to public:	**Low**	
State encouragement of biosolids recycling to soils:	**no data**	
Voluntary additional protections by land appliers known & reported by state coordinator:	no data	

Trends

New land application activity, 2018 - new permits & acreage, acres applied:	**Moderate**	rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)... With quotes of survey responses by state expert(s)
acres applied in 2018:	no data	
Local regulations & their impacts?:	**no data**	
details...		
Legislative & state regulatory actions in 2018 & their impacts?:	**no data**	
details...		
Biosolids beneficial use increasing... ...in 2018?:	**no data**	
....in 2020?:	**no data**	
details...		

Changes in Biosolids Use & Disposal, 2004 - 2018

Change* in solids reported used or disposed (in units used by state):	(10,279)	dry metric tons	*Change may be due to population increase/decrease, change in treatment at a large WWTP, and/or different systems of data tracking and reporting.
Beneficial Use - percentage point increase or decrease (-):	44%		
Landfill & surface disposal - % point increase or decrease (-):	-40%		
Incineration - percentage point increase or decrease (-):	-3%		calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)
Class A - percentage point increase or decrease (-):	38%		
Class B - percentage point increase or decrease (-):	6%		
No class or not known - percentage point increase or decrease (-):	-43%		