DASHBOARD

Maine State Biosolids Statistics

NATIONAL BIOSOLIDS DATA PROJECT
biosolidsdata.org

Data Quality & Methods	2018		explanations & sources
Quality & Confidence in this state's data:		**Moderately High**	information provided in survey (options: High, Moderate, Low, None)
Data sources & methods:		NEIWPCC/NBDP survey data provided by ME WRRFs are the cornerstones of Maine data here. ME DEP compiles annual data, but not as thoroughly as in the past. Some of those data & estimates filled gaps for WRRFs not reporting.	
State biosolids included in 2018 EPA ECHO data	31%	% in ECHO vs. the total presented here	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Demographics & Wastewater			
State population:	1,338,404		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):	19,739,520		
Population density (persons/square mile):	43.4		calculated
Total number of WRRFs reported in state survey:	87		NBDP estimate
total number of WRRFs permitted/reported elsewhere:	135		Seiple et al., 2020; state experts, etc
number of WRRFs in EPA ECHO reports for 2018:	6		https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Average population served per WRRF:	**9,230**		calculated
Average wastewater flow statewide (MGD, NBDP):	**110**		survey response by state expert
avg.wastewater flow statewide (MGD, Seiple):	136		https://doi.org/10.1016/j.jenvman.2020.110852
Number of WRRFs that treat >75% of state flow:	**24**		https://doi.org/10.1016/j.jenvman.2020.110853
% of population served by on-site (septic) systems:	**40%**		NBDP estimate based on 1990 septage survey
Biosolids used or disposed / person in 2018 (lbs):	**36**		calculated
Biosolids Application			
Agricultural land cropland (acres):	472,508		https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3776-AF8B-624DB8825822
% of state area in cropland:	**2%**		calculated
Number of farms with that cropland:	24,948		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.):	**0.05**		calculated
% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):	**1.7%**		calculated
Nutrient Sources - Comparison			
Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):	1,057		calculated assuming avg. 4.8% biosolids N
N in this state's animal manures (metric tonnes):	6,109		agriculture-nitrogen-and-phosphorus-manure
N in this state's purchased fertilizer (metric tonnes, 2011):	31,078		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?	**2.8%**		calculated
Phosphorus (P) in this state's biosolids (metric tonnes, 2018):	441		calculated assuming avg. 2% biosolids P

P in this state's animal manures (metric tonnes):	1,391	agriculture-nitrogen-and-phosphorus-manure
P in this state's purchased fertilizer (metric tonnes, 2011):	11,325	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?	**3.3%**	calculated

State Regulatory Involvement

Biosolids oversight agency / division:	**ME DEP, Bureau of Remediation & Waste Mgt: Residuals, Sludge & Composting**	
Permitting.... of biosolids programs:	solid waste license/permit	
...of land application sites:	issued as separate site-specific permits	
FTEs: state biosolids regulatory program:	4 NBDP estimate	survey response by state expert
Biosolids program FTEs per million population:	**2.99**	calculated
Enforcement: Inspections of biosolids facilities & field sites in 2018:	**no data**	survey response by state expert
Formal violations issued:	**no data**	survey response by state expert
Amount of state regulations beyond Part 503:	**High**	
Amount of state regulation of nutrient management & phosphorus:	**Moderate**	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:	**Moderate**	
Voluntary additional protections by land appliers known & reported by state coordinator:	Low	

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?:	**None**	
details...	a few local regulations in the 2000s, but nothing significant now	
Legislative & state regulatory actions in 2018 & their impacts?:	**Some**	
details...	new PFAS contaminant limits developing, which led to restrictions on biosoldis land application in 2019	
Biosolids beneficial use increasing... ...in 2018?:	**It's staying the same.**	survey response by state expert
....in 2020?:	**No**	survey response by state expert
details...	PFAS issue led to moratorium, widespread testing, & reductions in beneficial use starting in March 2019.	

Changes in Biosolids Use & Disposal

Change* in solids reported used or disposed (in units used by state):	(7,923)	dry U.S. tons	*Decrease due, in part, to installation of anaerobic digestion & closing of alkaline stabilization facility. Additional 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 (-):	-41%		
Landfill & surface disposal - % point increase or decrease (-):	41%		
Incineration - percentage point increase or decrease (-):	0%		calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)
Class A - percentage point increase or decrease (-):	-37%		
Class B - percentage point increase or decrease (-):	-3%		
No class or not known - percentage point increase or decrease (-):	40%		