DASHBOARD

Missouri State Biosolids Statistics

NATIONAL BIOSOLIDS DATA PROJECT
biosolidsdata.org

Data Quality & Methods	2018		explanations & sources
Quality & Confidence in this state's data:		**HIGH**	ranking by survey team based on information provided in survey (options: High, Moderate, Low, None)
Data sources & methods:		*NBDP compiled 2018 data provided by 38 of the largest WWTPs in Missouri responding to the NBDP survey. Additional data were integrated from U. S. EPA's ECHO database and Seiple et al, 2020. Data & summary report reviewed by experts in the state, including state biosolids coordinator.*	
State biosolids included in 2018 EPA ECHO data	184%	% in ECHO vs. the total presented here. ECHO data include inaccurate data for Smithville, double-counting for Kansas City, &	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Demographics & Wastewater			
State population:	6,126,452		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):	43,994,880		
Population density (persons/square mile):	89.1		calculated
Total number of WRRFs reported in state survey:	745 (CWNS), 97 (NBDP)		survey response by state expert
total number of WRRFs permitted/reported elsewhere:	745		Seiple et al., 2020; state experts, etc.
number of WRRFs in EPA ECHO reports for 2018:	91		https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Average population served per WRRF:	**no data**		calculated
Average wastewater flow statewide (MGD, NBDP):	**no data**		survey response by state expert
avg.wastewater flow statewide (MGD, Seiple):	808		Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852 Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853
Number of WRRFs that treat >75% of state flow:	**26**		
% of population served by on-site (septic) systems:	**no data**		survey response by state expert
Biosolids used or disposed / person in 2018 (lbs):	**42**		calculated
Biosolids Application			
Agricultural land cropland (acres):	15,599,446		https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3776-AF8B-624DB8825822
% of state area in cropland:	**35%**		calculated
Number of farms with that cropland:	72,188		https://quickstats.nass.usda.gov/results/F56563D1-C9CD-30EF-9774-2F91CC0640EC
% cropland to which biosolids were applied:	**0.03%**		calculated
Application rate if all state biosolids were applied to cropland (dry U.S. tons/ac.):	**0.01**		calculated
% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):	**0.3%**		calculated
Nutrient Sources - Comparison			
Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):	5,611		calculated assuming avg. 4.8% biosolids N
N in this state's animal manures (metric tonnes):	261,450		https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
N in this state's purchased fertilizer (metric tonnes, 2011):	431,119		https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased
If all state's biosolids applied, what % of state's applied N would	**1%**		calculated
Phosphorus (P) in this state's biosolids (metric tonnes, 2018):	2,338		calculated assuming avg. 2% biosolids P
P in this state's animal manures (metric tonnes):	84,045		https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
P in this state's purchased fertilizer (metric tonnes, 2011):	75,977		https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased
If all state's biosolids applied, what % of state's applied P would	**1%**		calculated
State Regulatory Involvement			

Biosolids oversight agency / division:		**Environment agency - water / wastewater program**	
Permitting.... of biosolids programs:		in general & specific NPDES permits	MO follows Part 503; there were not a lot of regulations on the books, but the 2019 change reduced duplication, redundancy.
...of land application sites:		None (Part 503 requirements only)	
FTEs: state biosolids regulatory program:	0.5		survey response by state expert
Biosolids program FTEs per million population:	**0.08**		calculated
Enforcement: Inspections of biosolids facilities & field sites in 2018:	**0**		survey response by state expert
Formal violations issued:	**0**		survey response by state expert
Amount of state regulations beyond Part 503:		**Low**	
Amount of state regulation of nutrient management & phosphorus:		**None (Part 503 requirements only)**	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:		None	
Trends			
New land application activity, 2018 - new permits & acreage, acres applied:		**Low**	
acres applied in 2018:	~5000		rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)... With quotes of survey responses by state expert(s)
Local regulations & their impacts?:		**None**	
details...		no activity in 2018	
Legislative & state regulatory actions in 2018 & their impacts?:		**None**	
details...			
Biosolids beneficial use increasing... ...in 2018?:		**It's staying the same.**	survey response by state expert
....in 2020?:		**Increasing some**	survey responses
details...		Kansas City is shifting to more land	
Changes in Biosolids Use & Disposal			
Change* in solids reported used or disposed (in units used by state):	(41,120)		*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 (-):	no data for 2004		
Landfill & surface disposal - % point increase or decrease (-):	no data for 2004		
Incineration - percentage point increase or decrease (-):	no data for 2004		calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)
Class A - percentage point increase or decrease (-):	no data for 2004		
Class B - percentage point increase or decrease (-):	no data for 2004		
No class or not known - percentage point increase or decrease (-):	no data for 2004		