DASHBOARD

South Carolina 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 compiled & analyzed by NBDP using U.S. EPA ECHO data, supplemented with online info & responses to NBDP survey, including estimates for 11 WRRFs. Data represent at least 76% of solids production in SC in 2018, and likely almost all.*	
State biosolids included in 2018 EPA ECHO data	67% % in ECHO vs. the total presented here	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Demographics & Wastewater		
State population:	5,084,127	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):	19,239,040	
Population density (persons/square mile):	169.1	calculated
Total number of WRRFs reported in state survey:	56	NBDP analysis using U.S. EPA ECHO data
total number of WRRFs permitted/reported elsewhere:	185	Seiple et al., 2020; state experts, etc.
number of WRRFs in EPA ECHO reports for 2018:	44	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Average population served per WRRF:	**19,237**	calculated
Average wastewater flow statewide (MGD, NBDP):	**383**	
avg.wastewater flow statewide (MGD, Seiple):	504	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852
Number of WRRFs that treat >75% of state flow:	**41**	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853
% of population served by on-site (septic) systems:	**30%**	NBDP estimate based on online news report
Biosolids used or disposed / person in 2018 (lbs):	**23**	calculated
Biosolids Application		
Agricultural land cropland (acres):	2,035,329	https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3776-AF8B-624DB8825822
% of state area in cropland:	**11%**	calculated
Number of farms with that cropland:	16,397	https://quickstats.nass.usda.gov/results/F56563D1-C9CD-30EE-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.):	**0.03**	calculated
% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):	**1.0%**	calculated
Nutrient Sources - Comparison		
Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):	2,847	calculated assuming avg. 4.8% biosolids N
N in this state's animal manures (metric tonnes):	47,205	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
N in this state's purchased fertilizer (metric tonnes, 2011):	50,785	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):	1,186	calculated assuming avg. 2% biosolids P
P in this state's animal manures (metric tonnes):	15,054	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
P in this state's purchased fertilizer (metric tonnes, 2011):	6,394	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?	**5.2%**		calculated
State Regulatory Involvement			
Biosolids oversight agency / division:		**Environment agency - water / wastewater program**	
		The Bureau of Water in the SC DHEC addresses solids management in NPDES permits as well as in state regulation R61-9.503, which mimics the U.S. EPA Part 503 rule.	
Permitting.... of biosolids programs:		a Land Application permit is usually required	
...of land application sites:			
FTEs: state biosolids regulatory program:	2		survey response by state expert
Biosolids program FTEs per million population:	**0.39**		calculated
		Inspection is incorporated into permitting, and is done at the same time as a WWTP inspection. Because of lack of staff & turnover, the number of inspections has decreased, on both WWTP and sludge sides. Periodic and at permit time.	
Enforcement: Inspections of biosolids facilities & field sites in 2018:			survey response by state expert
Formal violations issued:		**no data**	
Amount of state regulations beyond Part 503:		**Moderate**	
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:		None	
Trends			
New land application activity, 2018 - new permits & acreage, acres applied:		**Low**	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...		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?:		**Yes**	survey response by state expert
		Because of landfill costs going up, there is more interest in beneficial use. In 2021, composting is gaining interest; SC DHEC is meeting with stakeholders to help streamline compost regulations. There is consideration of a regional compost facility.	
details...			
Changes in Biosolids Use & Disposal, 2004 - 2018			
			*Change may be due to population increase/decrease, change in treatment at a large WWTP, and/or different systems of data tracking and reporting.
Change* in solids reported used or disposed (in units used by state):	10,317	dry metric tons	
Beneficial Use - percentage point increase or decrease (-):	3%		
Landfill & surface disposal - % point increase or decrease (-):	22%		
Incineration - percentage point increase or decrease (-):	-1%		calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)
Class A - percentage point increase or decrease (-):	3%		
Class B - percentage point increase or decrease (-):	8%		
No class or not known - percentage point increase or decrease (-):	-11%		