DASHBOARD

Hawaii 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:	*Data from the state biosolids coordinator & U. S. EPA ECHO data account for ~97% of the solids produced in HI.*	
State biosolids included in 2018 EPA ECHO data	155% % in ECHO vs. the total presented here	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Demographics & Wastewater		
State population:	1,420,491	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):	4,110,720	
Population density (persons/square mile):	221	calculated
Total number of WRRFs reported in state survey:	27	survey response by state expert
total number of WRRFs permitted/reported elsewhere:	22	Seiple et al., 2020; state experts, etc.
number of WRRFs in EPA ECHO reports for 2018:	18	https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual
Average population served per WRRF:	**26,305**	calculated
Average wastewater flow statewide (MGD, NBDP):	**no data**	survey response by state expert
avg.wastewater flow statewide (MGD, Seiple):	138	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852
Number of WRRFs that treat >75% of state flow:	**5**	Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853
% of population served by on-site (septic) systems:	**50%**	survey response by state expert
Biosolids used or disposed / person in 2018 (lbs):	**16**	calculated
Biosolids Application		
Agricultural land cropland (acres):	191,175	https://quickstats.nass.usda.gov/results/0CBBAD84-6032-3276-AF8B-624DB8825822
% of state area in cropland:	**5%**	calculated
Number of farms with that cropland:	5,826	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.):	**0.07**	calculated
% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):	**25%**	calculated
Nutrient Sources - Comparison		
Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):	549	calculated assuming avg. 4.8% biosolids N
N in this state's animal manures (metric tonnes):	7,957	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
N in this state's purchased fertilizer (metric tonnes, 2011):	12,881	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?	**3%**	calculated
Phosphorus (P) in this state's biosolids (metric tonnes, 2018):	229	calculated assuming avg. 2% biosolids P
P in this state's animal manures (metric tonnes):	2,485	https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure
P in this state's purchased fertilizer (metric tonnes, 2011):	1,897	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%**		calculated
State Regulatory Involvement			
Biosolids oversight agency / division:		**HI Dept. of Health**	
Permitting.... of biosolids programs:		Wastewater Management Permit system, 5 year permits	
...of land application sites:		If EQ, there is no regulation of land application sites. Permittees must notify land appliers regarding management practices. No Class B land app happening at this time; applier would have to register Class B land sites. Wastewater Branch must provide permit for biosolids management in addition to the WWTP NPDES permit (handled by the Clean Water Branch, which has NPDES delegation)	
FTEs: state biosolids regulatory program:	0.5		survey response by state expert
Biosolids program FTEs per million population:	**0.35**		calculated
Enforcement: Inspections of biosolids facilities & field sites in 2018:	**3**		survey response by state expert
Formal violations issued:	**0**		survey response by state expert
Amount of state regulations beyond Part 503:		**Moderate**	
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:		Low	
Trends			
New land application activity, 2018 - new permits & acreage, acres applied:		**Low**	
acres applied in 2018:	no data		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...		has not happened; it is assumed they could	
Biosolids beneficial use increasing... ...in 2018?:		**No**	survey response by state expert
....in 2020?:		**No**	survey response by state expert
details...		As of 2021, low public interest in EQ biosolids products and limited areas for its use and limited landfill space are driving consideration of other outlets for EQ	
Changes in Biosolids Use & Disposal			
Change* in solids reported used or disposed (in units used by state):	(8,568)		*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 (-):	16%		
Landfill & surface disposal - % point increase or decrease (-):	-40%		
Incineration - percentage point increase or decrease (-):	25%		calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)
Class A - percentage point increase or decrease (-):	9%		
Class B - percentage point increase or decrease (-):	0%		
No class or not known - percentage point increase or decrease (-):	-9%		