HB 2947—For Healthy Farmland and Safe, Sustainable Biosolids Management Practices in Oregon

HB 2947 will fund the Oregon State University (OSU) Extension/College of Agricultural Sciences of OSU to study the effects of per- and polyfluoroalkyl substances (PFAS) in land applied biosolids on soil, water, and agricultural crops at select sites across the state. Selected agricultural sites in different regions of the state will be studied to represent different soils, climate, and other ecosystem conditions. HB 2947 will provide up to $800,000 in general funds directly to OSU for this study. (This amount will be reduced to $200,000 if grant funding that has been allocated to the Oregon Department of Environmental Quality (DEQ) from the US Environmental Protection Agency (EPA) Columbia River Basin Act toxics reduction grant program can be secured. ***The study will be conducted with voluntary participation by farmers and the wastewater treatment utilities that provide biosolids to the farms, and data collection and reporting will maintain the anonymity of the farmers, field locations, and contributing wastewater utilities to the extent allowed by law.***

Sustainable Biosolids Management Makes Healthy Soil, Fights Climate Change, and Benefits Farms

Biosolids are the organic materials collected and processed at municipal wastewater treatment facilities. Treated to meet strict EPA and DEQ standards for safe handling and use, nutrient-rich biosolids are applied on land as fertilizers and soil conditioners for crops and land reclamation. Some utilities turn biosolids into compost that is beneficially used for a variety of agricultural, urban landscape, and restoration purposes. Biosolids have been proven to help improve soil health, retain soil moisture, and sequester carbon, which often makes them a preferred alternative to commercial fertilizers.[1] ***Land application of biosolids is a sustainable cost-effective practice that benefits farmers by offsetting demands for commercial fertilizers, increasing crop productivity, improving soil conditions over time, and helping their economic bottom line.***

Why Study Biosolids/PFAS Impacts to Oregon Farms?

Growing scientific evidence shows that exposure to PFAS can lead to a range of human health problems. PFAS do not breakdown easily, they are difficult to treat, and they are found just about everywhere in the air, water, and on land. They have been dubbed "forever chemicals" because of their strong molecular bonds. They are found in thousands of common consumer products and are used in some commercial and industrial processes, which makes PFAS sources and concentrations highly variable across the US. They are released directly to the air, land, and water in a variety of ways.

PFAS cannot be eliminated with current wastewater treatment technologies, so PFAS received at treatment plants are passed through to water and biosolids. As businesses and industries work to phase out sources of PFAS in manufacturing and consumer products, PFAS concentrations found in biosolids are expected to decline. This is the case with perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), the two most common and toxic types of PFAS

[1] Long Term Biosolids Land Application Influences Soil Health; University of Colorado, USDA

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chemicals, which were phased out of domestic production and use in the US in 2015. However, the persistence of legacy PFOS and PFOA and the pervasive use of other PFAS in society makes it important to understand how or if PFAS found at low levels in Oregon biosolids impact crops, soil, and water quality.

Oregon ACWA completed a PFAS Wastewater Monitoring Project and published the PFAS Monitoring Data Report in December, 2024. This work helps wastewater utilities, regulators, and the public better understand the magnitude and nature of PFAS in Oregon wastewater treatment systems and supports their ability to effectively target source reduction actions. This report combines monitoring data from 21 Oregon wastewater treatment facilities' effluent and influent, 18 facilities' biosolids, and several targeted industries. For both the small and large utilities, the average concentrations of PFOS and PFOA in biosolids (even excluding sample results that were below lab detection limits) were significantly below the national averages cited in a 2022 national study[2] and the median concentrations were below threshold screening values set in Michigan[3] and Minnesota[4] for any type of follow-up evaluation or management actions. Additionally, based on Oregon DEQ calculations, Oregon's average biosolids land application rates (1.2 dry tons/acre) are far less than rates evaluated by EPA (4.46 dry tons/acre) in conducting its draft risk assessment. These findings combine to indicate that Oregon does not have either PFAS concentrations or biosolids loading to farm fields that rise to the level of concern or risk indication that has been found in states with significant industrial PFAS contributions. ***The question that needs to be answered for Oregon farmers, utilities, and regulators is how PFAS compounds found in biosolids, even at low levels, impact farm soils, crops, and water quality.***

Why is the Proposed Study of PFAS in Biosolids Important to Oregonians?

The US EPA is assessing health and environmental risks and implementing methods and requirements for PFAS monitoring and source reduction actions that will be implemented by states and local governments. In the meantime, state and local agencies in Oregon have undertaken proactive, voluntary efforts to identify sources and levels of PFAS in Oregon's drinking water sources, municipal wastewater, biosolids, and waterways. Information produced from these efforts to date has indicated PFAS sources and concentrations are relatively low compared to states with significant industrial sources. This gives Oregon the time to move forward responsibly and strategically to generate sound science and data-based approaches to locating and reducing PFAS exposure at the source while preserving sustainable and economical farming and wastewater management services. Changing farming practices to replace biosolids with commercial fertilizers also poses PFAS risks, and commercial fertilizer manufacturers are not currently required to disclose PFAS or other toxic material contents of their products.

Maintaining sustainable biosolids management practices as a partnership between wastewater utilities and agricultural communities has multiple environmental and economic benefits. HB 2947 will fund OSU researchers to work in collaboration with DEQ, the Oregon Association of Clean Water Agencies (ACWA), local wastewater utilities, and participating farmers, to conduct studies that will help inform local and state decision makers and farmers about biosolids land application safety and risks related to PFAS. ***While biosolids are regulated to meet standards that protect public health and the environment, the EPA and DEQ have not yet established standards for PFAS in biosolids. This study will deliver information needed for Oregon leaders, municipal wastewater utilities, and farmers to make sound decisions about the future of these practices.***

[2] Thompson, Kyle A. et al; Poly- and Perfluoroalkyl Substances in Wastewater Treatment Plants in the United States: Seasonal Patterns and Meta-Analysis of Lon-Term Trends and Average Concentrations; ACS EST Water; 2022; 2; 690-700

[3] https://www.michigan.gov/egle/about/organization/water-resources/biosolids/pfas-related

[4] https://www.pca.state.mn.us/sites/default/files/wq-wwprm2-113b.pdf