NORTHWEST BIOSOLIDS

Northwest Biosolids
2024 Year in Review

* Photo credit: City of Boise, Biosolids application at the Twenty Mile South Farm for winter wheat production in 2025

About Our Organization

Northwest Biosolids' mission is to advance environmental sustainability through the beneficial use of biosolids.

We Strive to:

- Be the Pacific Northwest regional voice for biosolids
- Share historic and current knowledge and issues
- Advance the knowledge of biosolids management through collaboration with research institutions
- Increase the use of biosolids products and broaden beneficial use markets by understanding customer needs

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For 35 years Northwest Biosolids has supported and enabled biosolids practitioners to realize the highest and best uses for biosolids. It was an incredible year for Northwest Biosolids. Here are some of the 2024 activities and events that we are proud to share with the membership:

- Biofest 2024 was a great success! We gathered over 130 attendees at the beautiful Skamania Lodge in Stevenson, WA. There was top-notch education, networking, and community building. Keynote speaker Lise LeBlanc kicked-off this year's event with Carbon-Opportunities Amongst the Chaos.

- 2024 Webinars – Northwest Biosolids hosted and participated in a number of webinars this year.
  - An Introduction to Green Stormwater Systems
  - Exploring Linkages between Soil Health and Human Health - Overview of National Academy of Science, Engineering and Medicine Report
  - Using Biosolids for Restoration
  - Using Biosolids in Urban Areas
  - EPA's Risk Assessment Process & Risk Communications

Northwest Biosolids continued its collaboration with the USDA research group W4170. W170 is a multi-state research group comprised of scientists and practitioners who work with biosolids. This is the group that conducted the research that formed the foundation for the EPA 503 biosolids regulations. This year's meeting took place in Renton, WA at the King County WWTP and featured a full day of presentations. There was a focus on PFAS with updates on research projects and key takeaways; discussion on urban uses of biosolids; benefits for soil health/economic health; and challenges around phosphorus concerns. Summary: W4170 in Seattle WA | NW Biosolids.

Northwest Biosolids continued to advocate on behalf of our industry. Here are some examples of our advocacy:

- Northwest Biosolids provided comments in favor of re-issuing the new biosolids General Permit for Washington State. The permit has been held up since January of this year due to concerns over PFAS, PBDEs, and microplastics. In our comments, Northwest Biosolids reinforced the role that biosolids play in soil health, agriculture and carbon sequestration. In our comments, Northwest Biosolids reinforced that wastewater treatment plants do not produce these contaminants.
- Northwest Biosolids, alongside our fellow regional biosolids associations, contributed to a joint letter of support regarding CERCLA (Comprehensive Environmental Response, Compensation and Liability Act); provided recommendations for the application and communication of the EPA PFAS risk assessment; and created a regional biosolids communication resource for our members to further educate communities on the benefits of biosolids as it relates to the concerns surrounding PFAS.

Northwest Biosolids research focused on 3 key areas: growing the research committee and its expertise, expanding the number of research institutions and researchers that we work with, and advancing our goal to increase our annual investment in research to $200,000 per year by 2027.

Northwest Biosolids continued to support Drs. Sally Brown, University of WA and Deirdre Griffin La-Hue, WA State University throughout 2024:

- Monthly "Research Library" - Each month, Dr. Sally Brown provides a review of 5 research publications in a themed area and helps our members make sense of it all. You can find all the monthly Research Library eBulletins in eBulletin Archive | NW Biosolids (you need to login to the Information Portal | NW Biosolids with your membership passcode. Please contact amy@nwbiosolids.org if you have any difficulty logging into Information Portal or past eBulletins).

- Master Class with Dr. Sally Brown: View 2024 series here.

- In addition to education and outreach support, 2024 research projects led by Deirdre and Sally include:

    - **Biosolids as a tool to improve soil health and Biosolids and cover crop grazing for synergistic agroecosystem benefits** (WSU) – See Biofest 2024 presentation here.
    - **PFAS home versus biosolids exposure** (UW) - PFAS in biosolids remains a significant concern for utilities. It is not clear how regulations will impact beneficial use options. At the same time, widespread use of these chemicals in a broad range of products suggest that home exposure is likely several orders of magnitude greater than any potential exposure through municipal biosolids. Results will provide a communication tool to show the relative risk of PFAS exposure from biosolids to daily home exposure.

In 2024, Northwest Biosolids also provided research funding support to:

- Dr. Surendra Singh and Dr. Shikha Singh, WA State University - **Quantifying legacy effects of biosolids in dryland wheat systems**. See Biofest presentation here, the Wheat Beat Podcast Digging into the Legacy in Dryland Research with Dr. Surendra Singh , and read **Biosolids in the Dryland Pacific Northwest Seven Years After Application: Wheat Yields, Soil Carbon, and Nutrient Availability Continue to Be Enhanced** in the Nov/Dec Crops & Soils Magazine.
- Dr. Markus Flury, WA State University - **Accumulation of microplastic and metal nano particles from biosolids in agricultural soils**. The objective of this project is to quantify the amounts of microplastic transferred to soils when biosolids are land-applied over extensive time periods. In addition, atmospheric deposition of microplastics will be monitored and compared to the plastic input by biosolids.
- North East Biosolids and Residuals Association (NEBRA) – **Advance and improve the Biosolids Emissions Assessment Model (BEAM)** making it a consistent tool for quantifying climate change impacts and increase its use in carbon accounting. https://www.nebiosolids.org/greenhouse-gas-emissions

Recent publications that received research support in previous years from Northwest Biosolids included:

Leonard, E., B. Act, S. L. Brown, D. E. Butman - Impact of long-term application of biosolids to surface water nitrogen in a working forest plantation in King County, Washington - ScienceDirect
Adhikari, K., C. I. Pearce, K. A. Sanguinet, A. I. Bary, I. Chowdhury, I. Eggleston, B. Xing, and M. Flury -Accumulation of microplastics in soil after long-term application of biosolids and atmospheric deposition - ScienceDirect
Meineke, J.K., F. I. Doyle, L. Oukil, K. E. Hodges - Small mammal responses to biosolids on grazed rangelands in British Columbia - Meineke - 2024 - Restoration Ecology - Wiley Online Library
Meineke, J. K., F. I. Doyle, K. E. Hodges - Raptors benefit from biosolids applications on rangeland
Pepper, I. L., C. Kelley, M.L. Brusseau - Is PFAS from land applied municipal biosolids a significant source of human exposure via groundwater? - ScienceDirect