



# Manuresheds: Advancing nutrient recycling in US agriculture

May 21, 2021

2:30 pm (eastern), 1:30 pm (central), 12:30 pm (mountain), 11:30 am (pacific)

The Manureshed initiative seeks to catalyze connections among livestock and crop systems so that manure can be efficiently and sustainably used as fertilizer. With coordinated processing and transport, manure could replace 35% of the Phosphorus and 8% of the Nitrogen applied as fertilizer in the US each year. Accordingly, strategic manure redistribution and recycling provides a solution to some of the greatest production and conservation challenges facing US agriculture while promoting climate change adaptation and mitigation. We envision a nationwide manureshed system powered by a diversity of actors who collaboratively manage manure resources based on system-level optimization, and who prioritize the removal of barriers to adoption of manure recycling. In this webinar, we discuss the manureshed vision, the geographic barriers to manureshed recycling, the social networks underlying manureshed management at multiple scales, and examples of industry-specific manureshed solutions. *An application for continuing education credit for Certified Crop Advisors (CCAs) and members of the American Registry of Professional Animal Scientists (ARPAS) will be submitted.*

*The LPELC network depends on the sharing of both questions and answers!*

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**Dr. Sheri Spiegel** is a Rangeland Management Specialist in southern New Mexico with the United States Department of Agriculture-Agricultural Research Service (USDA-ARS). Sheri compares the effects of agricultural management approaches to understand the tradeoffs of widespread adoption, with a focus on management of the beef supply chains originating from ranches of the Southwest, as well as recycling manure nutrients in the "manuresheds" surrounding animal feeding sites. She has a PhD in Environmental Science, Policy and Management from the University of California, Berkeley. Phone: 575-646-7018, Email: [sheri.spiegel@usda.gov](mailto:sheri.spiegel@usda.gov)

**Dr. Colton Flynn** is a Research Scientist for the USDA-ARS in Temple, Texas. Bringing his expertise in geography, Dr. Flynn provides support for the manureshed concept through geospatial analytics and remote sensing applications. Dr. Flynn has contributed to the Long-Term Agroecosystems Research (LTAR)'s manureshed effort since its beginnings. His degrees come from Oklahoma State University (PhD – Geography) and the University of Arkansas (MA – Geography; BS Earth Science). Email: [colton.flynn@usda.gov](mailto:colton.flynn@usda.gov)



**Dr. Gwendwr Meredith** is an LTAR Human Dimensions Postdoctoral Fellow based at the University of Idaho. Her research explores the social dimensions of manureshed management, including mapping social networks of actors engaged in nutrient cycling. She has a PhD in Human Dimensions of Ecosystem Science and Management from Utah State University and a B.A. in Animal Behavior, Ecology, and Conservation from Indiana University. Phone: 940-595-7130, Email: [gwendwr@uidaho.edu](mailto:gwendwr@uidaho.edu)

**Robb Meinen** works for Penn State Extension with water and air quality issues as they pertain to animal agriculture and manure nutrient management. One of his main duties is to coordinate educational efforts for the Pennsylvania Commercial Manure Hauler and Broker Certification Program. Robb is a planning committee member for the 2022 Waste to Worth Conference. He has a MS degree in Animal Science and is closing in on a PhD in Soil Science, both from Penn State. Phone: 814-865-5986, Email: [rjm134@psu.edu](mailto:rjm134@psu.edu)





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## More Information on the Topic

- Manureshed paper in *Agricultural Systems* journal:  
<https://www.sciencedirect.com/science/article/pii/S0308521X19311679>
- Manureshed county-level database: <https://agcros-usdaars.opendata.arcgis.com/datasets/881305934d62494bbbeeb5f36b735eb9>
- Assessing Remote Sensing Vegetation Index Sensitivities for Tall Fescue (*Schedonorus arundinaceus*) Plant Health with Varying Endophyte and Fertilizer Types: A Case for Improving Poultry Manuresheds:  
<https://doi.org/10.3390/rs13030521>
- Overview of Manureshed research and management in *Nature* Research Roundup:  
<https://www.nature.com/articles/d41586-020-03449-0>