

EGU2020-2023, updated on 17 Oct 2021

<https://doi.org/10.5194/egusphere-egu2020-2023>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



## **Why and when can biosolids be used as a soil amendment for ecosystem reclamation and rehabilitation?**

**Lauchlan Fraser**

Thompson Rivers University, Natural Resource Science, Canada (lfraser@tru.ca)

Biosolids are a source of nutrient-rich organic material that can be used to improve degraded or disturbed soils. However, public perception of the use of biosolids on land is both positive and negative and can change over time and be different in different regions of the world. Research on the land application of biosolids has increased in the past 20 years, but there is little consensus on how the environment responds to biosolids applications. Here, I (1) present public perception research on the use of biosolids in land application in British Columbia, Canada, (2) present a review of the literature on the effects of biosolids in land application with a particular focus on plant community development, and (3) provide recommendations for the use of biosolids in land application depending on potential differences in ecosystem reclamation goals. In the public perception research, many citizens see the value in the use of biosolids as a sustainable fertilizer, especially in mine reclamation, but some have expressed concerns about pathogens in biosolids and their effect on humans and animals. The literature review revealed that biosolids increase plant productivity but have no effect on plant diversity. The research suggests that climatic conditions and seeding are influential in altering ecosystem and community level responses to biosolids application.