

Apr 22nd, 1:00 PM

Examining the Impact of Algae on Microbial Communities in Wastewater

Erica Belloso
Northeastern Illinois University

Millenia Jiminez
Northeastern Illinois University

Cassandra Ceballos
Northeastern Illinois University

Jennifer Slate
Northeastern Illinois University

Follow this and additional works at: <https://neiudc.neiu.edu/srcas>

Belloso, Erica; Jiminez, Millenia; Ceballos, Cassandra; and Slate, Jennifer, "Examining the Impact of Algae on Microbial Communities in Wastewater" (2021). *NEIU Student Research and Creative Activities Symposium*. 1.
<https://neiudc.neiu.edu/srcas/2021/s31/1>

This Event is brought to you for free and open access by the Conferences and Symposia at NEIU Digital Commons. It has been accepted for inclusion in NEIU Student Research and Creative Activities Symposium by an authorized administrator of NEIU Digital Commons. For more information, please contact h-owen3@neiu.edu, wallis@neiu.edu.

EXAMINING THE IMPACT OF ALGAE ON MICROBIAL COMMUNITIES IN WASTEWATER.

Erica N Beloso, Millenia Jimenez, Cassandra Ceballos, and Jennifer Slate

Environmental Science Program, Northeastern Illinois University, Chicago Il, 60625

Department of Biology, Northeastern Illinois University, Chicago Il, 60625

Wastewater provides an excellent resource for growing algae, which remove carbon dioxide from the atmosphere as they photosynthesize and thus lessen climate change. In a partnership with the Metropolitan Water Reclamation District of Greater Chicago, we are examining the potential of using nutrient-rich wastewater to grow algae. Since space is limited in an urban environment, the algae are grown on vertical belts that rotate through wastewater tanks. We have identified a wide variety of genera in the algal community, including Diatoms (e.g. *Navicula*, *Nitzschia*, *Sellaphora*) and Chlorophyta (e.g. *Scenedesmus*, *Chlorella*, *Rhizoclonium*). Because bacteria play an important role in the wastewater treatment process, we are also examining the impact of the algae on the microbial community. Preliminary results show that the algal treatment increases the types of carbon substrates consumed by the microbial community, increasing microbial functional diversity. Sewage treatment plants can benefit from using algae as a final tertiary treatment to further clean wastewater. Thus, the growing of algae in wastewater has excellent potential to be implemented on a larger scale to mitigate anthropogenic climate change.