

Current and Future Insights from Ecology, Evolution, and Biodiversity

Pruthvi¹, Puneetha², Shreyank³, Naushadh⁴

UG Scholars Department of Civil Engineering¹⁻⁴

Alva's Institute of Engineering and Technology, Mijar, Karnataka, India

pruthvimpruthvi5@gmail.com, jesussweety890@gmail.com,

shreyanks158@gmail.com, naushadhsidakatte12@gmail.com

Abstract: *Microbial ecology, evolution, and biodiversity (EEB) is the study of how bacteria affect ecosystems and the health of humans and the world. EEB is leading the way in understanding the functions of bacteria in the biosphere. The discipline is developing new multidisciplinary tools to study complex microbial communities. The American Society for Microbiology's Council on Microbial Sciences held a virtual retreat in 2023 to discuss the future of EEB. The talks focused on how microbes affect host and environmental health globally. For EEB to reach its full potential, contributions from a variety of scientific fields are required. This necessitates a largescale, multidisciplinary study that integrates numerous datasets and technologies. To propel advancement, international cooperation including the public and scientists is required. EEB and the American Society for Microbiology want to help microbiology enter a new age. They all see a future for the field that is more innovative, collaborative, and relevant to society*

Keywords: Termsmicrobial ecology; Evolutionary biology; Biodiversity interdisciplinary; Anthropocene machine learning