

Effect of Highway Construction on Soil Properties and Soil Organic Carbon (Soc) Along Lagos-Badagry Expressway, Lagos, Nigeria

Authors : Fatai Olakunle Ogundele

Abstract : Road construction is increasingly common in today's world as human development expands and people increasingly rely on cars for transportation on a daily basis. The construction of a large network of roads has dramatically altered the landscape and impacted well-being in a number of deleterious ways. In addition, the road can also shift population demographics and be a source of pollution into the environment. Road construction activities normally result in changes in alteration of the soil's physical properties through soil compaction on the road itself and on adjacent areas and chemical and biological properties, among other effects. Understanding roadside soil properties that are influenced by road construction activities can serve as a basis for formulating conservation-based management strategies. Therefore, this study examined the effects of road construction on soil properties and soil organic carbon along Lagos Badagry Expressway, Lagos, Nigeria. The study adopted purposive sampling techniques and 40 soil samples were collected at a depth of 0 - 30cm from each of the identified road intersections and infrastructures using a soil auger. The soil samples collected were taken to the laboratory for soil properties and carbon stock analysis using standard methods. Both descriptive and inferential statistical techniques were applied to analyze the data obtained. The results revealed that soil compaction inhibits ecological succession on roadsides in that increased compaction suppresses plant growth as well as causes changes in soil quality.

Keywords : highway, soil properties, organic carbon, road construction, land degradation

Conference Title : ICLDSSM 2023 : International Conference on Land Degradation and Sustainable Soil Management

Conference Location : Montreal, Canada

Conference Dates : August 03-04, 2023