23 November, 2020

Dear Dr. [**Shunyao Zhuang**](https://ojs.bilpublishing.com/index.php/re/about/editorialTeam)

Editor Research in Ecology

Herewith we would like to submit the manuscript entitled “**Site preparation techniques determine tree community coverage increase undergoing different forest restoration methods on mining tailings in Mariana, Minas Gerais State, Brazil**” as a Research article to Research in Ecology. This manuscript has not been submitted to any of other journals, and the manuscript has not been published previously (partly or in full).

**Description and novelty**: Currently there is a special attention in the ecological restoration actions in forest ecosystem affected by the Fundão tailings dam in Mariana, Minas Gerais state, southeastern Brazil. However, there is still an urgent need to know the efficiency of restoration methods and site preparation techniques by monitoring ecological indicators of rapid assessment and direct positive effects on ecosystem stabilization, such as plant community coverage. The Fundão tailings dam collapse was one of the largest environmental disasters that deposit over 40 million m3 ore tailing into the environment, directly affected 863.7 ha of Permanent Preservation Areas (as defined by the federal forest code) associated to watercourses due to the flooding of the ore tailings, and ca 400 ha Atlantic forest were lost with the iron tailing mud. Furthermore, the Atlantic Forest in Brazil is considered as a hotspot of vascular plant diversity, has a high carbon storage capacity in the standing biomass. However, is also one of the most threatened tropical forests in the world.

In this context, we evaluated the effects of passive and active restoration methods through different techniques of site preparation by manipulating physical-chemical properties of mining tailing on tree community coverage in the *Paracatu* district, municipality of *Mariana*, Minas Gerais, Brazil. Different studies have shown that plant coverage has been an important predictor (or proxy) of ecological processes, and also a potential ecological indicator of vegetation restoration. Thus, passive and active restoration methods can be complementary in the soil and plant community coverage recovery in the areas affected by the mining tailings in Mariana region. It has been demonstrated that the initial sites conditions through fertilization was essential to promote ecological restoration in areas affected by mining tailings in Mariana.

**Declaration**: We trust you agree that this is a topic of wide international importance, and we hope this merits publication in Research in Ecology with the help of the editorial process, to bring this to the highest level of world attention.

**Conflict of Interest**: All coauthors agree with its publication and made significant contributions; that there is no conflict of interest; that we followed all pertinent ethical and legal requirements; that the study is scientifically valid; that it has not been published before and was not sent simultaneously to another journal; that we share non-exclusive printed and electronic publication rights with the Journal and that we accept to comply with all journal norms regarding procedure, format, decision, and other pertinent aspects.

Yours sincerely, also on behalf of the co-authors

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This research has the consent was obtained from all participants. Author contributions:**Sebastião Venâncio Martins, Pedro Manuel Villa, Leonardo Ferreira da Silva** and **Fabio Haruki Nabeta**: Conceptualization, Methodology, Fieldwork**,** Data curation, Software and analysis, Writing, Original draft preparation. **Gabriel Correa Kruschewsky** and **Andreia Aparecida Dias**: Software and analysis, Reviewing and Editing.