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IMPACTS ON ECOSYSTEM SERVICES PROVIDED BY GEODIVERSITY: A STUDY ON THE SOUTHEASTERN COAST OF BRAZIL

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Presentation Format: *Flash Talk (5 minutes, maximum of 3 slides)*

Presentation Day: **Monday** Presentation Time: **3:55:00 PM**

Presentation Number/Poster Group: **2**

ABSTRACT:

Although the first protected area created in the world was based on geological elements and processes, nature conservation strategies have been traditionally focused on a biodiversity perspective. Since natural diversity is composed of both living and nonliving elements, this represents an unbalanced strategy of nature conservation, which has an impact on the role of geodiversity in the functioning of ecosystems. The ecosystem services (ES) provided by geodiversity are goods that directly and indirectly benefit society and can be classified into regulation, support, provision, cultural and knowledge functions. The Protected Areas (PAs) have an important role in conservation and maintenance of ecosystem services, especially in Brazil which has a National System of Protected Areas that predicts this maintenance. Brazil comprises about 3,202 PAs, which represents 32% of the total of the Caribbean and Latin America. However PAs have been impacted by urban growth and industrialization, so to study these areas it is important to understand which are the threats and impacts that affect this provided services. This work aims at the identification and assessment of impacts on ES provided by geodiversity on the southeast coast of Brazil, in the Caraguatatuba county and a protected area Serra do Mar State Park. The methods used consisted of two steps: (i) identification of the ES based on the recognition of the Essential Variables of Geodiversity (EGVs) and bibliographic research and (ii) quantitative assessment of the impacts on the ES provided by geodiversity. The results presented seventy six ES provided by geodiversity in Caraguatatuba, which the ecosystem functions most affected mainly by urban area, absence of native vegetation and farming, forestry and pasture were, respectively: supporting (50.9%), regulating (47.7%), cultural (41.9%), knowledge (34.9%) and provisioning (31.2%). The main losses on ES provided by geodiversity are represented by the vulnerability of aquifers, support of biodiversity and carbon sequestration and storage. The results show the clear relationship between geodiversity and biodiversity in a promotion of ES provided by geodiversity. This can be shown as a new integrated conservation strategy, but it is a challenging task in PAs, as they are under anthropic threat. It