



Framework for evaluating the contribution of Nature-based Solutions to the sustainability and the resilience of natural sites and population

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Abstract. Implementing a holistic strategy is decisive for promoting health and well-being and enhancing the resilience of natural sites and populations. This work explores the interconnectedness of health and well-being with sustainable best practices, using Nature-based Solutions (NbS) as a common ground. It focuses on the evaluation of natural sites to address global challenges.

NbS play a dual role, contributing to both climate change mitigation and adaptation efforts. In this work, a special emphasis is placed on forests and protected areas, urban parks, and gardening spaces. These sites regulate water flow and temperature, improve water quality, and offer sustainable long-term solutions in contrast to purely technological approaches. Integrating these solutions into policies and practices is crucial for a more resilient and sustainable future.

Green and blue spaces, along with sustainable communities, have proven links to improved mental health by reducing stress, anxiety, and depression.

This work proposes indicators related to the sustainability and resilience of sites and populations, focusing on climate, geophysical context, air quality, and noise. Key indicators are presented for characterizing, designing, and managing nature spaces and promoting environmental sustainability. The objective of this research is twofold: first, to explore the effectiveness of existing indicators commonly used in the context of sustainable practices and NbS, and second, to develop new indicators that can offer a more comprehensive understanding of their impact.

They establish the foundation for an innovative portfolio, ranking nature characteristics for different spaces and rating them based on their potential to improve the resilience of the communities.

The ultimate contribution resides in establishing a robust framework to assess the impact of NbS on community resilience. By prioritizing healthcare and prevention, the objective is to broaden the benefits of green and blue spaces, fortifying resilience against climate change, promoting biodiversity, and effectively managing water resources. This research serves as a valuable asset for urban planners and researchers, offering guidelines for the design or enhancement of natural sites to ensure the promotion of sustainability and community well-being.

Keywords: Nature-based solutions, environmental sustainability, climate change adaptation, water management.

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