



Unlocking the Power of Nature to Combat Climate Change

Climate change poses unprecedented challenges, threatening coastal ecosystems and communities. Approximately 3 billion people live along the coast worldwide and are already facing the negative impacts of climate change. Nature-based solutions represent a holistic approach to address the impacts of climate change on our coasts by harnessing the power of healthy ecosystems and biodiversity. This outline provides the key components and benefits of nature-based solutions.

WHAT ARE NATURE-BASED SOLUTIONS?

Nature-based solutions restore, conserve, and sustainably manage ecosystems by leveraging natural processes and resources to enhance biodiversity, protect habitats, and promote resilient communities in harmony with our environment. Nature-based solutions leverage the power of nature to address the coastal impacts of climate change. Amazing right? These strategies harness the inherent capacity of healthy ecosystems to mitigate coastal climate change impacts and adapt to changing conditions.

KEY PRINCIPLES OF NBS

Restoration: Nature-based solutions prioritize the restoration and regeneration of degraded ecosystems. This involves restoring habitats that have been impacted by human activities, leading to increased ecological resilience and biodiversity.

Conservation: Biodiversity conservation is at the core of nature-based solutions, ensuring the protection of vital habitats and the preservation of species diversity for the overall health of ecosystems.

Sustainable Management: Nature-based solutions emphasize the sustainable use and management of natural resources, incorporating principles of ecological balance and resilience. This involves practices that protect natural resources for future generations.

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BENEFITS OF NATURE-BASED SOLUTIONS

Climate Resilience: Nature-based solutions contribute significantly to climate resilience by bolstering ecosystems against the coastal impacts of climate change. The adaptive capacity of natural systems helps communities better withstand extreme weather events and other climate-related challenges.

Climate Change Mitigation & Adaptation: Nature-based solutions can help sequester carbon through coastal restoration while enhancing coastal protection. Coastal ecosystems, such as mangroves, play a pivotal role in capturing and storing carbon dioxide. For example, mangroves are estimated to sequester carbon at a rate of up to ten times that of tropical rainforests.

Cost-Effectiveness: Nature-based solutions often prove more cost-effective than traditional hard-armoring infrastructure solutions. They require less maintenance and costs, provide long-term benefits, and contribute to overall ecosystem health.

Community Engagement: Nature-based solutions involve local communities in restoration efforts, fostering a sense of stewardship and responsibility. This engagement encourages sustainable practices and enhances the resilience of both coastal ecosystems and communities.

EXAMPLES OF NATURE-BASED SOLUTIONS

Riparian Restoration: Planting native vegetation along water bodies to reduce runoff, improve water quality by naturally filtering pollutants, and prevent soil erosion.

Living Shorelines: Designing and implementing living shorelines that use natural materials like native plants, sand, or oyster beds to protect against erosion, bolster coastal resilience, and provide habitat for marine life.

Green Roofs and Walls: Installing vegetation on rooftops and building exteriors to enhance energy efficiency, improve air quality, and decrease the effects of urban heat islands while providing green spaces.

Ocean-Friendly Gardens: Native planting gardens and bioswales that follow the Surfrider Foundation's program guidelines to reduce water usage, prevent pollution, and create habitat-friendly landscapes, contributing to overall coastal ecosystem health.

Urban Green Spaces: Creating and preserving green spaces within urban areas to mitigate the urban heat island effect, enhance biodiversity, and promote recreational activities.

Agroforestry: Integrating trees and shrubs into agricultural landscapes to enhance biodiversity, improve soil fertility, and increase resilience to climate change.

Wetland Restoration: Restoring degraded wetlands to improve water filtration, support diverse wildlife, and mitigate the impacts of floods and storms.

Mangrove Restoration: Reviving mangrove ecosystems to provide coastal protection, sequester carbon, and serve as crucial habitats for marine life.

Oyster Reef Restoration: Rebuilding oyster populations to act as natural barriers, reducing wave energy, stabilizing coastlines, and improving water quality.

Forest Conservation: Protecting and managing existing forests to preserve biodiversity, sequester carbon, and maintain ecosystem services.

Green Infrastructure in Cities: Implementing nature-based features such as permeable pavements, rain gardens, and bioswales to manage stormwater, reduce flooding, and improve runoff water quality.



THE CLIMATE ACTION PROGRAM AND NATURE-BASED SOLUTIONS

The Climate Action Program harnesses the power of nature-based solutions, particularly restoration efforts, to bolster coastal resilience against the mounting threats of climate change. The Climate Action Program supports Surfrider chapters and clubs across our nationwide network to lead and participate in restoration efforts at the local, grassroots level. Through coastal restoration, such as restoring mangrove ecosystems and implementing living shorelines, we fortify coastal areas, providing natural buffers against erosion, storm surge, and sea-level rise. Yet, our efforts extend beyond restoration alone. At Surfrider, we tackle climate change comprehensively – by combating offshore oil drilling, advocating to eliminate single-use plastics, and championing sustainable policies that promote renewable energy sources. By engaging in diverse initiatives, we strive to create a more sustainable and environmentally just future for our planet and all who call it home.

Connect with us to learn more and stay updated.

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