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Big Green Beans
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After researching several ecosystem services, I decided to choose air purification, water storage, biodiversity, climate regulation, and cultural ecosystem services.

Air purification: Tree crowns (the top portion of the tree) filter pollutants from the air. Such pollutants include nitrogen, sulphur, and carbon monoxide, which are produced by fossil fuels, coal, etc. Additionally, the vegetation structure and forest management are crucial for air filtration.

My fun fact: Coniferous tree species are more effective in air filtering than other tree species because they have needles all year round.

Why I chose this: I believe that air purification is an extremely crucial and impactful aspect of forests. Especially in a world where air quality is rapidly declining due to industrialization and urbanization, the role forests have in maintaining breathable air cannot be overstated.

Water storage: Forests have the ability to store large amounts of water below ground. These groundwater sources supply our drinking, irrigation, and industrial process water.

My fun fact: A single large deciduous tree can hold a thousand gallons of rainwater in its canopy each year.

Why I chose this: While researching, I was shocked about the amount of water forests could store, and I realized how forests play such a significant role in the water cycle and in our lives.

Biodiversity: Biodiversity is critical for forest ecosystems to function. Forest biodiversity includes plants, animals, fungi, microbes, and their genetic diversity, which are all interconnected in a complex web of interactions. Biodiversity is also critical to the forests' resilience in regard to climate change.

My fun fact: Forests are home to 80% of terrestrial biodiversity.

Why I chose this: I chose this since biodiversity is a key aspect of forests when it comes to maintaining the balance of health of ecosystems. Understanding the importance of biodiversity helped me see how forests are interconnected communities that are essential to life on Earth.

Climate Regulation: Forests are essential carbon sinks, allowing forests to help mitigate climate change. Once CO₂ is taken from the atmosphere through photosynthesis, carbon is stored in tree biomass and forest soils. Furthermore, forests allow for air cooling through evapotranspiration. Having forests near urban centers allows for better climate adaptation.

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My fun fact: Forests can lower temperatures to as much as 2-9 degrees fahrenheit.

Why I chose this: I felt that climate regulation was extremely relevant to the main goal of addressing environmental challenges and promoting sustainability in PGC. Highlighting the climate-regulating role of forests proves how essential they are for Earth's future.

Cultural: Forests are highly appreciated ecosystems for recreation and contribute significantly to the economy. Additionally, they are highly appreciated for their aesthetic and ecological values. Forests are closely related to aspects such as cognitive, educational, spiritual, inspirational, cultural heritage and intrinsic values.

My fun fact: In Japan, ancient forests known as sacred groves (such as those around Mount Koya) are considered spiritually important. People believe that the trees are home to the kami (spirits) in Shinto religion.

Why I chose this: I feel personally connected to the recreational aspects of forests since I've enjoyed doing recreational activities such as hiking and exploring national parks since my childhood. These experiences gave me a deep appreciation for nature and taught me the value of having access to peaceful and natural spaces.

Some sources I've used:

<https://www.treatedpoles.co.za/blog/importance-all-forests-infographic>

<https://research.fs.usda.gov/managingland/ecosystem>

<https://forest.eea.europa.eu/topics/society/ecosystem-services>

<https://extension.psu.edu/a-green-solution-to-stormwater-management#:~:text=Trees%20work%20like%20large%20umbrellas,million%20in%20stormwater%20management%20costs>.

globalforestwatch.org/blog/category-and-topics/?topic=biodiversity#:~:text=Forests%20are%20crowded%20places%2C%20home,How%20do%20biologists%20%5B...%5D

https://19january2017snapshot.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands_.html#:~:text=Trees%20and%20vegetation%20lower%20surface,part%20of%20the%20building's%20roof.

<https://ies.bio/world/the-phenomenality-of-sacred-shinto-trees/>

ECOSYSTEM SERVICES



What are ecosystem services?

They are a multitude of benefits that come from natural systems, like forests. Ecosystem benefits can be classified into four categories: provisioning services, supporting services, regulating services, and cultural services. Such services are interconnected to one another and are essential for human well-being and environmental sustainability.



AIR PURIFICATION

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big.green.beans Forests do more than we realize. They vital ecosystem services that support both the environment and human life. Forests are crucial for purifying the air from pollutants like nitrogen and sulphur, storing large amounts of water, and fostering biodiversity. They also act as carbon sinks, allowing for CO2 absorption, while also serving value as an appreciated recreational/cultural location. Having forests is a privilege we must cherish and protect!
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