SDG15: LIFE ON LAND

SDG 15 focuses on Life on Land, emphasizing the protection, restoration, and sustainable management of land ecosystems. In India, the government has been engaged in various initiatives to safeguard its land ecosystems and biodiversity. Key efforts include:

Afforestation and Reforestation: Programs to increase green cover and restore degraded land through afforestation and reforestation initiatives.

Biodiversity Conservation: Establishing protected areas, national parks, and wildlife sanctuaries to preserve natural habitats and endangered species.

Sustainable Land Management: Promoting sustainable land-use practices and soil conservation to prevent degradation and erosion.

Community Participation: Involving local communities in conservation efforts, recognizing their role in maintaining biodiversity and sustainable land use.

UPES, as a specialized university in energy and allied sectors, may not be directly involved in land ecosystem preservation. However, it can contribute by promoting awareness through educational campaigns, encouraging sustainable land management practices within the energy sector, and advocating for environmentally responsible approaches.

Efforts such as organizing seminars, workshops, and integrating environmental conservation themes into relevant academic programs can play a pivotal role in raising awareness and fostering a culture of responsible land management, complementing the broader governmental conservation initiatives in India.

Medicinal Plant and Aromatic Plant (MAP) Lab

https://research.upes.ac.in/medicinal-plant-and-aromatic-plant-map-lab/

The Medicinal and Aromatic Plant Laboratory is developed under DST funded project Rural Women Technology Park of UPES, (2015-2018) SEED Division DST, GoI.The objective of the lab is to do Extraction of essential oil of medicinal and aromatic plants and to conduct comparative study of yield of essential oil from different land pattern. Under this Lab the primary screening of natural compounds from medicinal and aromatic plant is carried out. MAP Lab facilitates the antimicrobial, antifungal, and antibacterial studies of extraction of MAP species. The Lab is equipped with Soxhlet assembly, Rotameters, Clevenger unit and Steam distillation (Autoclave)unit, soil and water testing kits which are used for the extraction of essential oil of Lemongrass, Stevia, Tulsi and Chamomile. The University has also established polyhouse and nurseries for the cultivation of medicinal and

aromatic plants. Under this project, we give training and technical backup support to rural women farmers for the cultivate medicinal and aromatic plant species like Tulsi, Chamomile, Lemongrass and Stevia in nearby villages i.e. Than Goan, Birsani, Doonga and Masraajpatti.

List of equipment at MAP

Clevenger Apparatus	Digital pH meter Water
Soxhlet Assembly	Bath Digital
Steam Distillation Unit (Autoclave)	Desiccator
Rota Vapour	Weighing Balance
Portable Water Testing and Soil Testing Kit	Poly House
Digital Heat Mantle	

Name of Medicinal and Aromatic plants available in Poly house

S. No.	Common Name	Botanical Name
1.	Kachnar	Bauhinia Variegata
2.	Reetha	Sapindus Mukorossi
3.	Arjun	Terminalia Arjuna
4.	Sarpgandha	Rauvolfia Serpentine
5.	Aloe vera	Aloe Barbadensis
6.	Giloy	Tinospora Cordifoilia
7.	Ambahaldi	Curcuma Longa
8.	Chitrak	Plumbago Zeylanicum
9.	Japanese mint	Mentha Arvensis
10.	Touch-me-not	Mimosa Pudica
11.	Castor plant	Ricinus Communis
12.	Kasni	Cichorium Intybus
13.	Bhanjir	Perilla Frutescens
14.	Baheda	Terminalia Bellirica
15.	Harad	Terminalia Chebula
16.	Amla	Phyllanthus Emblica
17.	Shatawar	Asparagus Racemosus
18.	Kalihari	Gloriosa Superba
19.	Brahmi	Bacopa Monnieri
20.	Aprajita	Clitoria Ternatea
21.	Lemongrass	Cymbopogon Citratus
22.	Stevia	Stevia Rebaudiana
23.	Tulsi	Ocimum Sanctum
24.	Insulin patra	Costus Igneus
25.	Pippali	Piper Longum

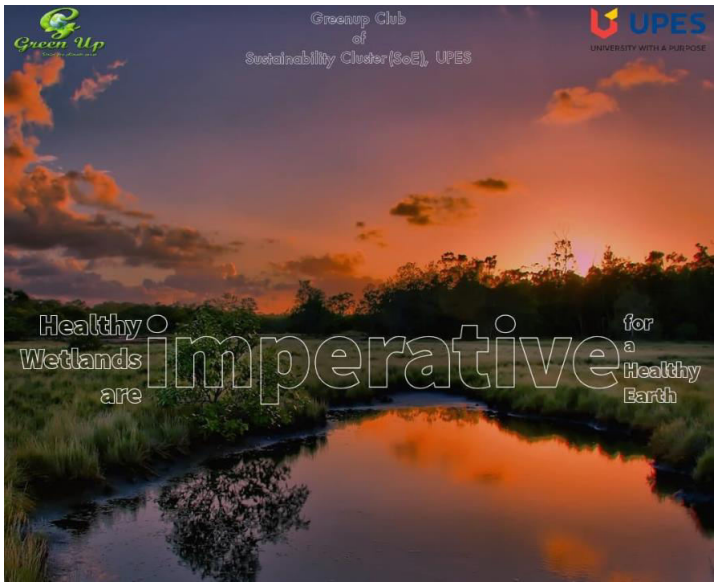
Healthy Wetlands

https://www.facebook.com/greenupupes/photos/a.1519593978254906/3084511358429819/

Wetlands are unique, productive ecosystems where terrestrial and aquatic habitats meet. Wetlands play a critical role in maintaining many natural cycles and supporting a wide range of biodiversity. They purify and replenish our water, and provide the fish and rice that feed billions. They serve as a natural sponge against flooding and drought, protect our coastlines and help fight climate change. Bursting with biodiversity, wet-

lands are a vital means of storing carbon. Wetlands are also tremendously productive ecosystems that provide a myriad of services to society worldwide.

Wetlands are a critical part of our natural environment and it is of atmost importance that we should protect it.



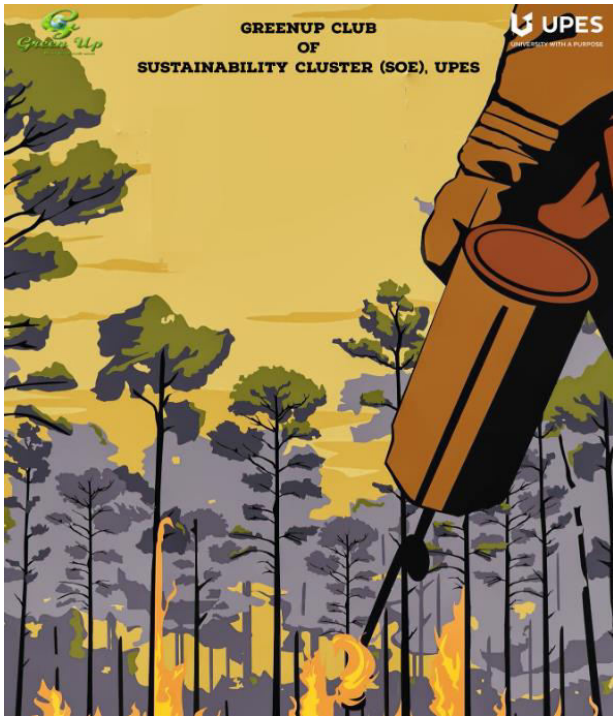
Forest Fire

https://www.facebook.com/greenupupes/photos/a.1519593978254906/3005233706357585/

Not so long ago forest fires were seen as an extremely harmful influence on the ecosystem. People have since realized that fire is a natural and healthy part of the ecosystem, and further that suppressing forest fires can have devastating effects.

Fire ecology is a branch of ecology that focuses on the origins of wildland fire and it's relationship to the environment that surrounds it, both living and non-living.

Natural forest fires are typically started by lightning strikes. Once ignited, their spread is dependent on weather conditions and the fuel available in the forest. Areas with large amounts of vegetation near the ground are more fire-prone. If these fuel sources get the fire hot enough, it can also jump into the tops of the trees and spread from there. In a healthy forest, however, this is relatively uncommon.



Once the fire has burned itself out the process of succession begins. Depending on when the next fire takes place, this may take 300 years or more. In the first stage the forest is composed of primarily herbaceous vegetation and smaller pines.

As time passes the trees get bigger while competition for light and other resources tends to thin out the forest. Fires are relatively uncommmon because the reduced vegetation on the ground (due to the scarcity of sunlight) makes it difficult to ignite the treetops. This stage lasts for approximately 100 years.

The third stage (again about 100 years) is characterized by the disappearance of some of the larger trees and denser ground vegetation (due to increased light). Fire is a greater threat due to the lower canopy of trees, but still relatively uncommon as the forest tends to remain green during the fire season.

Finally the last of the original generation of pines begin to die and the forest canopy becomes more uneven, the gaps eventually being filled by younger pines. This final stage of succession persists until a fire brings it back the first stage.

Because most natural forest fires won't burn an entire forest--just patches of it--most forests are made up of patches in every stage of succession. This results in a very high diversity of habitats and species. Animals benefit from fires because of the increased growth of grasses. The burned vegetation returns nutrients to the soil and clears underbrush to allow new growth to flourish.

World Wildlife Day

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World Wildlife Day is celebrated on October 6 every year. The theme for this year is "Forests and Livelihoods: Sustaining People and Planet", as a way to highlight the central role of forests, forest species and ecosystems services in sustaining the livelihoods of hundreds of millions of people globally, and particularly of Indigenous and local communities with historic ties to forested and forest-adjacent areas.

World Wildlife Day is an opportunity to celebrate the many beautiful and varied forms of wild fauna and flora and to raise awareness of the multitude of benefits that their conservation provides to people. At the same time, the Day reminds us of the urgent need to step up the fight against wildlife crime and human-induced reduction of species, which have wide-ranging economic, environmental and social impacts.

World Wildlife Day will always celebrate forest based livelihoods and will promote the value of knowledge that contributes to establishing a more sustainable relationship with these crucial natural systems.