

Department of Botany, Bioinformatics and Climate Change Impacts Management,

School of Sciences

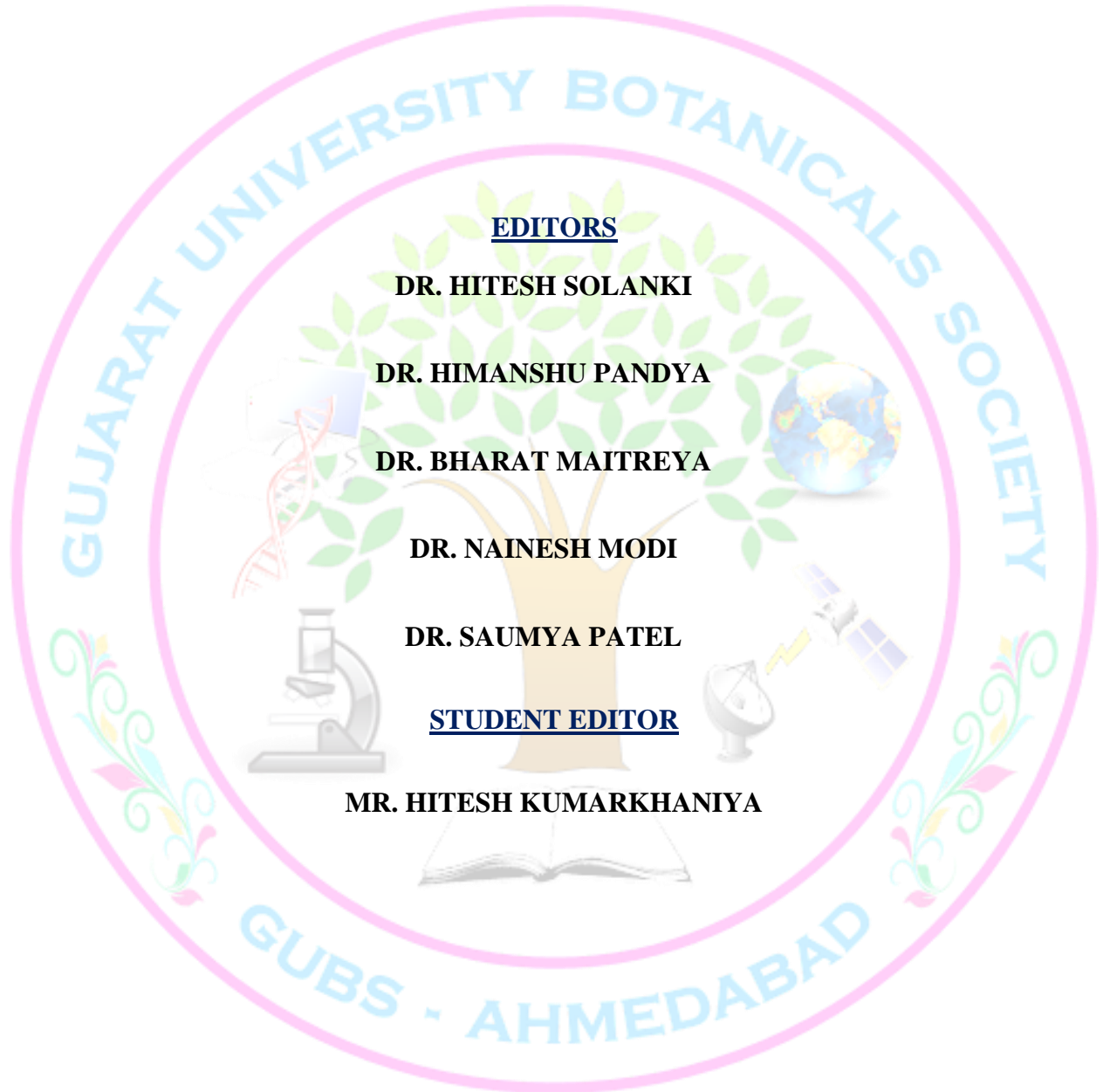
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ANKUR

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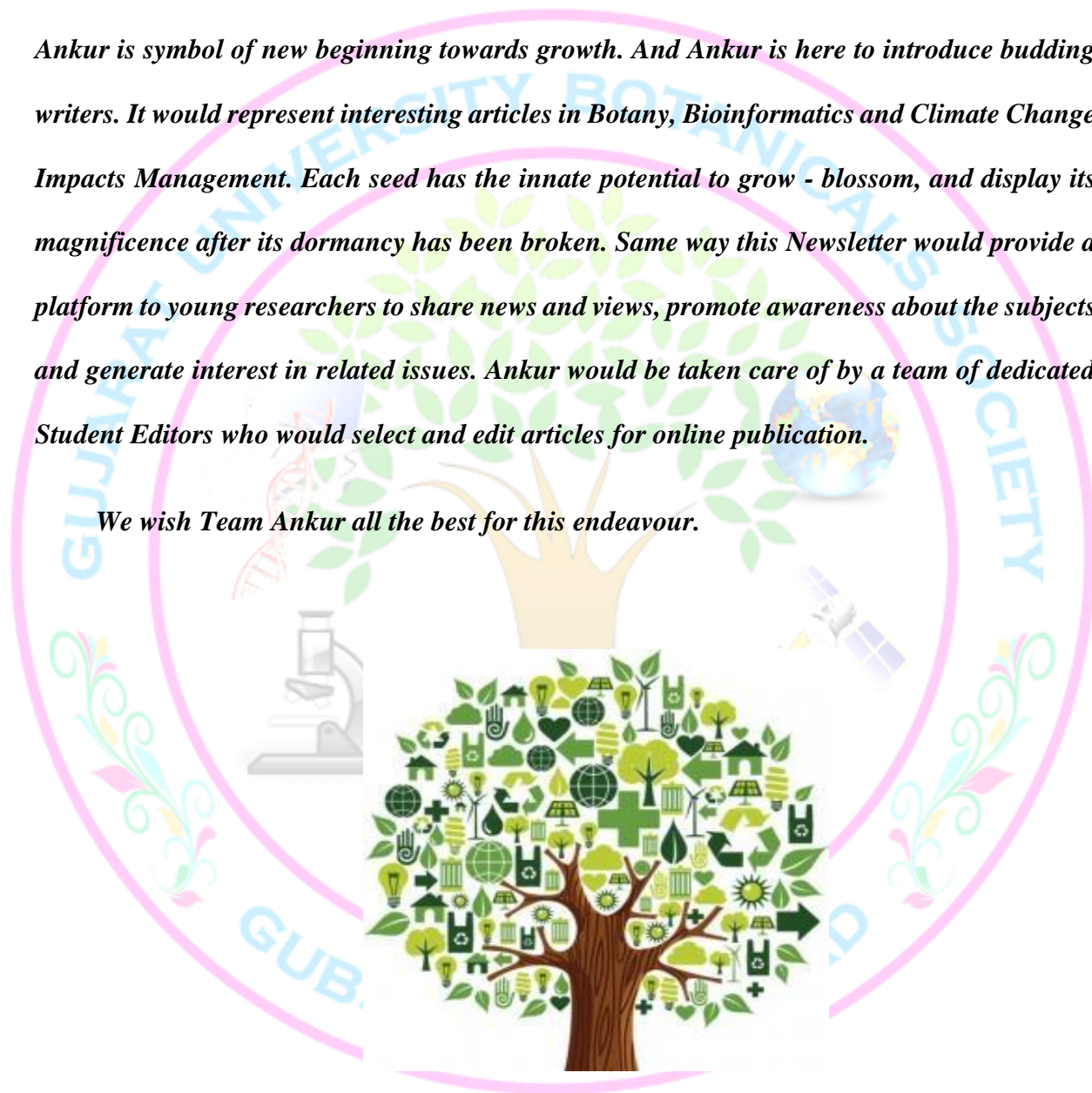


ANKUR

.....Sprouting of thoughts

Ankur is symbol of new beginning towards growth. And Ankur is here to introduce budding writers. It would represent interesting articles in Botany, Bioinformatics and Climate Change Impacts Management. Each seed has the innate potential to grow - blossom, and display its magnificence after its dormancy has been broken. Same way this Newsletter would provide a platform to young researchers to share news and views, promote awareness about the subjects and generate interest in related issues. Ankur would be taken care of by a team of dedicated Student Editors who would select and edit articles for online publication.

We wish Team Ankur all the best for this endeavour.





FROM EDITOR'S DESK....

Ankur is now eight years old. This newsletter is intended to be published twice in a year. The growth and development of Ankur is a reflection of the growth and progress of the students of the Department. This newsletter will serve to reinforce and allow increased awareness, improved interaction and integration among all of us. *The journey began seven years ago and now Ankur has blossomed and is spreading the fragrance to everyone around with the message that plants are significant and valuable.*

In this issue, we focus on Urban Forestry.

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Dr. Himanshu Pandya

Dr. Bharat Maitreya

Dr. Nainesh Modi

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PATRON'S MESSAGE

The Ecology of the Indian Desert: A Fragile Balance

The Indian Desert, also known as the Thar Desert, stretches across the northwestern regions of India, covering parts of Rajasthan, Gujarat, Haryana, and Punjab. Despite its harsh, arid conditions, the desert teems with unique ecosystems that have evolved to thrive in one of the most extreme climates on Earth. This delicate ecology, however, is under increasing pressure from human activity, climate change, and over-exploitation of natural resources.

The Thar Desert is home to a surprising diversity of life, from resilient plants like the drought-tolerant Khejri tree to animals such as the critically endangered Indian wolf and the desert fox. Migratory birds, including the graceful demoiselle crane, flock to the desert's wetlands during the cooler months, adding a fleeting splash of colour to the otherwise brown expanse. Despite these adaptations, water remains the most precious and scarce resource, shaping the survival of both flora and fauna.

Yet, the desert's ecological balance is increasingly at risk. Overgrazing by livestock, deforestation for fuel, and unregulated mining have caused soil degradation and loss of biodiversity. Climate change exacerbates the situation, bringing unpredictable weather patterns, rising temperatures, and increasing desertification, threatening both people and wildlife.

Preserving the ecology of the Indian Desert is crucial—not just for the survival of its unique species, but for the millions of people who depend on it for their livelihoods. Sustainable practices, such as water conservation, sustainable agriculture, and ecotourism, offer a way forward. With careful management and awareness, we can ensure that the desert continues to thrive as a vital ecosystem, preserving its beauty and biodiversity for generations to come.

This issue of Ankur focuses on **ECOLOGY OF INDIAN DESERT** and shares the expanse of knowledge in this global priority.

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THE ECOLOGY OF THE INDIAN DESERT: A HIDDEN GEM

Prof. Dr. Hiteshkumar A. Solanki

As we wander through the bustling urban landscapes or the lush greenery of the Indian subcontinent, it's easy to overlook the unique and vibrant ecosystem of the Indian Desert. Often perceived as barren and lifeless, the desert is, in fact, a thriving habitat teeming with life, adapted to the harsh and extreme conditions.

The Indian Desert, also known as the Thar Desert, spans across the states of Rajasthan, Gujarat, Punjab, and Haryana, covering an area of around 200,000 square kilometers. It is one of the largest arid regions in the world, characterized by sand dunes, rocky terrains, and sparse vegetation. Despite the challenging environment, the desert hosts a fascinating array of flora and fauna.

Flora: Resilient Survivors

The vegetation of the Thar Desert is a testament to the resilience and adaptability of nature. The flora is dominated by xerophytic plants—those that can withstand prolonged periods of drought. Common plant species include the hardy Khejri (*Prosopis cineraria*), which is not only crucial for the ecosystem but also has significant cultural and medicinal value. Other notable plants are Cactus, Acacia, and various types of grasses that provide fodder for the desert's herbivores.



White Desert: Kachchh

Fauna: Adaptations in Action

When it comes to wildlife, the Thar Desert does not disappoint. It is home to several species uniquely adapted to the desert's arid climate. Among the most iconic inhabitants is the Great Indian Bustard, a critically endangered bird that relies on the open grasslands of the desert for its survival. Other notable species include the Blackbuck, Chinkara (Indian Gazelle), Desert Fox, and various reptiles and insects that have evolved to thrive in the harsh conditions.

Human Interaction: A Delicate Balance

Humans have inhabited the Thar Desert for millennia, developing sustainable ways to live in harmony with their environment. Traditional water conservation techniques such as the use of Kunds (underground water tanks) and Johads (small earthen check dams) have been pivotal in sustaining life in this arid region. However, modern challenges such as overgrazing, deforestation, and climate change pose significant threats to the delicate balance of this ecosystem.

Conservation: A Call to Action

Protecting the unique ecology of the Indian Desert requires a concerted effort from all stakeholders. Conservation initiatives aimed at protecting endangered species, promoting sustainable agricultural practices, and restoring degraded habitats are crucial. Public awareness and community involvement play a vital role in ensuring the survival of this remarkable ecosystem for future generations.

As we marvel at the beauty of the Indian Desert, let us also remember our responsibility to protect and preserve this hidden gem. The desert's unique flora and fauna, and the age-old human traditions that sustain them, are not only a testament to the resilience of life but also a reminder of the intricate interconnectedness of our natural world.

This editorial message can serve as a reminder of the importance of preserving the unique and often overlooked ecosystems like the Indian Desert. Let's ensure that the Thar's rich biodiversity continues to thrive for generations to come.

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THE FASCINATING RELATIONSHIP BETWEEN DESERTS AND PLANTS

Prof. Dr. Himanshu Pandya

Deserts are often portrayed as barren, lifeless places with extreme temperatures, scorching sun, and a lack of water. Yet, despite their seemingly inhospitable conditions, deserts are home to a remarkable variety of plant life. These resilient organisms have adapted in ingenious ways to survive the harsh realities of desert life, and understanding how desert plants thrive in such extreme environments can provide insights into the complex balance of nature.



<https://www.villagesquare.in/khejri-the-wonder-tree-of-thar-desert/>

The Role of Desert Plants in the Ecosystem

Desert plants do more than simply survive in harsh environments – they play a critical role in maintaining the balance of desert ecosystems. These plants provide food and shelter for a variety of animals, including insects, rodents, reptiles, and birds. Some desert plants even provide resources for humans, whether through medicinal uses or food production.

Moreover, the roots of desert plants help to stabilize the soil, preventing erosion and maintaining the integrity of the desert landscape. When it rains, desert plants also help to absorb and retain water, reducing the risk of flash floods.

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ECOLOGY OF THE INDIAN DESERT: SOIL TYPES

Prof. Dr. Bharat maitreya



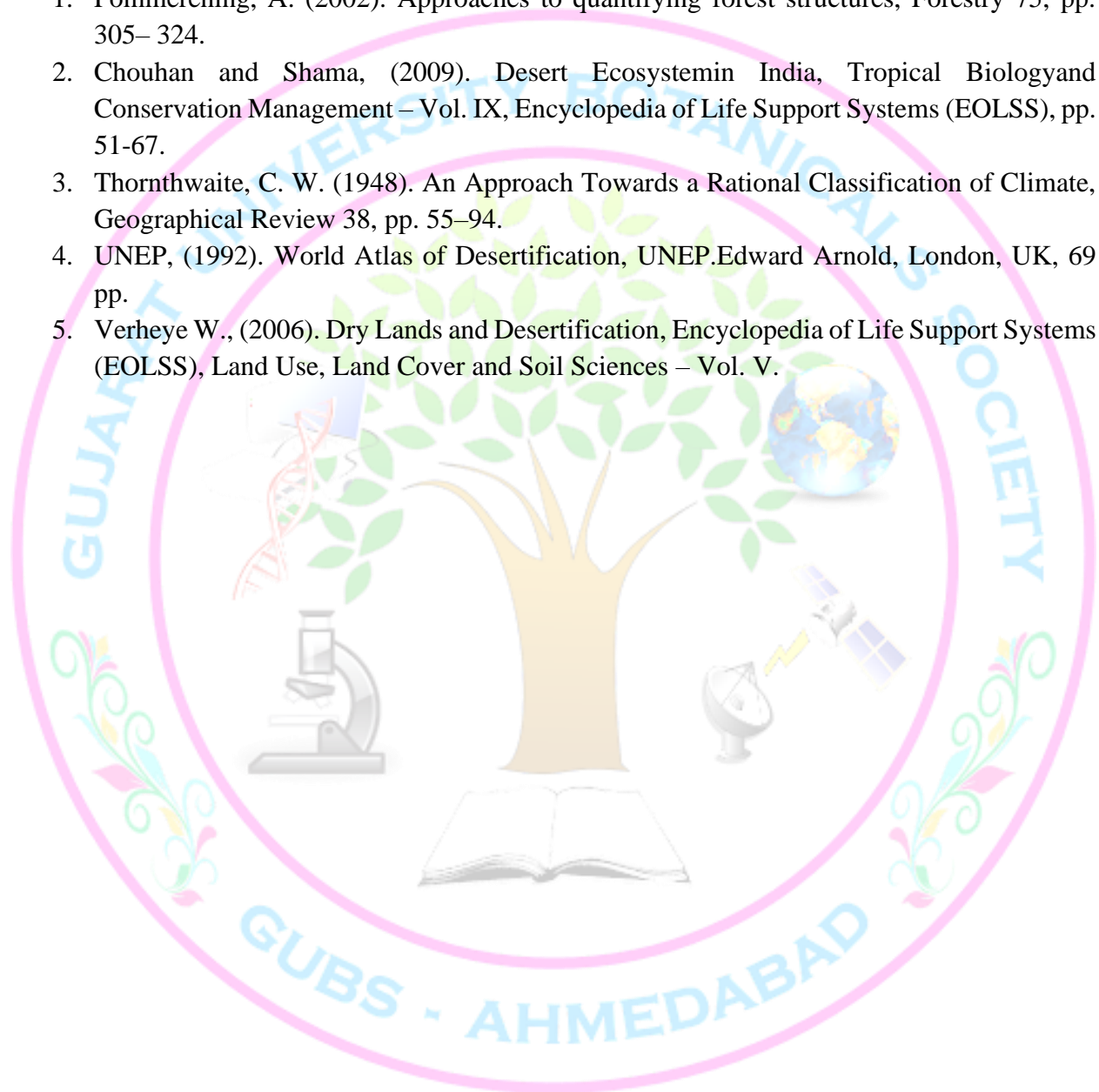
Courtesy: <https://www.google.com/maps>

The desert is characterized by a variety of habitats and biodiversity habits., Its ecology includes: Soil types in Desert areas. To a certain extent, stand structure determines habitat and species diversity and can be quantified to assess habitat quality for conservation purposes (Pommerening, 2002; Skov and Svenning, 2003). Spatial patterns of plants also are important characteristics of vegetation, and it can play a significant role in ecological However, many factors play important roles in determining the spatial patterns of tree species distribution in a plant community. Abiotic factors may influence the distribution of species, and potentially control their abundance and promote coexistence (Zhang et al., 2010). Soil biodiversity has an important influence on soil properties and processes that affect plant productivity and environment regulator functions .The edaphic factors often so prominent in arid zones operate almost always by modification of the regime., The soil acts as a temporary store for the precipitation input, its use by organisms; a regulator controlling the partition of this input the major outflows: runoff, drainage, evaporation, and uptake transpiration, Most of the water input . Surface storage for more than a few hours occurs in deserts only in low sites receiving runoff, with low-permeability soils. The infiltration input at any point may be much lower or higher than precipitation, depending on position in the landscape, surface properties, and vegetation. Substantial drainage and groundwater recharge flows occur mostly in run-on areas. Major Shaping Force like Chemical and physical

Water erosion, Water deposition, Water erosion, Wind erosion and deposition to forms Soils like Sandy loam to loamy sand, Clay loam, Coarse sand, Clay loam, Fine sand.

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ECOLOGY OF INDIAN DESERT

Dr. Nainesh Modi

- **Introduction**

An ecosystem is a self-sustaining natural entity that includes both abiotic (non-living) and biotic (living) components. Each creature has a significant job or niche to perform in an ecosystem. There are two main types of natural ecosystems: terrestrial and aquatic. Deserts are one type of terrestrial ecosystem. Desert ecosystem is defined by an imbalance between precipitation and evapotranspiration, resulting in a dry environment. Deserts frequently experience drought because of a lack of rainfall, which prevents plants from growing and animals from surviving.

The location, temperature, and climate of Indian deserts influence their ecosystems, and landforms play a unique role in those environments. The primary issues facing arid areas are extensive deforestation and unregulated groundwater usage. Desert regions have degraded due to frequent clearing of vegetation for farming, leading to increased aridity. Because of overuse of synthetic fertilizers and pesticides has led to a loss of fertility of the soil. The groundwater table has reached a critical level, indicating that additional extraction might have severe consequences. Human interaction leads to increased salinity and alkalinity. The majority of arid locations have no perennial water supplies. In certain dry places, surface water availability has led to water logging issues.

- **The ecology of the Indian desert is characterized by:**

The climate of the desert is influenced by landforms, location, and temperature. The average annual rainfall in the desert is less than 150 mm. The soil in the desert is prone to wind erosion and is always dry. Due to a lack of water and unfavorable weather, there is little vegetation in the desert. Plants that thrive in the desert are either xerophytes or short-lived annuals. Many birds, reptiles, and wild animals have evolved to live in severe desert circumstances. The Luni River is the greatest of the ephemeral rivers in the desert. Some streams merge with lakes or playas and disappear into the sand. One of the main sources of salt generation in the desert is the brackish water found in the lakes and playas.

The Indian desert is an undulating sandy plain covered with sand dunes. It is located in the north-western part of the Indian subcontinent. The Indian desert is bordered by the Aravali Range to the east, the Rann of Kutch to the south, and the Indo-Gangetic Plain to the north, west, and northeast.

The desert soil has a diverse range of microbes, including Gram-positive bacteria, Actinobacteria, and Firmicutes. The Scarabaeidae (Coprinae), one of the biggest families of beetles in the world, are found in the desert. These insects convert animal feces into balls, which they roll into tunnels to decompose. In addition to increasing soil fertility, this technique eliminates many pests' larval homes. Plants that can survive in arid deserts are called xerophytes. These plants can close their stomata during the day and open

them again at night. The Indian desert has low vegetation cover. However, it has a rich floral diversity with about 628 species, 352 genera, and 87 families of vascular plants. Deforestation, excessive use of chemical fertilizers and pesticides, uncontrolled groundwater usage, and high-speed winds that create shifting sand dunes are the main threats to the desert's ecosystems.

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PLANT ANIMAL INTERACTION AFFECT ON REVEGETATION OF DESERT OR RANGELAND

Mr. Hitesh Kumarkhaniya

Ecology is a study of interaction between environment and organism. Desert is waterless land which have minimum diversity of flora and fauna. An awareness of the dynamic interaction between plant and heterotrophs maintains the structure and function of ecosystem. Desert ecosystem also depends on the interaction of plant and animal in such a way like pollination of flowering, microbial association, seed dispersal, seed germination and grazing also play vital role in ecosystem.



The success of restoration of desert or rangeland is enhanced by the more and more interaction of living organism. Some desert plants like Cactus, Ziziphus, Salvadora, Yucca, Encelia and larrea and animal such as rat, squirrel, finches, lizard, ship, got and other animals are maintaining the desert ecosystem. In desert area microbes are essential for plant growth, they are initiator of succession and therefore we can see the beauty of desert plants. Animals like bat, sunbird and bees pollinating the flowering which is vital for fruit development. Seed dispersal possible through cattle, ship, got and squirrels. Some seed have hard seedcoat which is break in stomach of animal and germination is possible. Weblike structure of interaction responsible for restoration of plant in desert areas. Desert is one of the most essential ecosystems for survival. Flora and fauna diversity vary in accordance to desert type.

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DESERTS OF INDIA: HARSH BEAUTY WITH RESILIENT LIFE

Mr. Parth Desai

Deserts, also known as sand seas, cover about one-seventh of the earth's land surface and host diverse ecosystems, including stunning oases that attract tourists. Despite their harsh conditions, deserts are home to many resilient plants and animals that have adapted to thrive in extreme environments.

Three Distinct Deserts of India

- 1) **Trans-Himalayan Cold Desert [Ladakh and Spiti]**
The cold desert Biosphere Reserve is rich in biodiversity, featuring over 500 plant species, including 118 medicinal varieties like *Aconitum rotundifolium* and *Ferula jaeschkeana*. This region is also home to critically endangered species such as the snow leopard and Tibetan antelope.
- 2) **The White Salt Desert of Kutch**
The rann of Kutch uniquely blends desert and coastal ecosystems. During the monsoon, it becomes a vital breeding ground for the flamingoes and other wildlife, including the Indian wild ass and various exotic bird species.
- 3) **Sandy Thar Desert in Rajasthan**
The sandy Thar desert in Rajasthan features xerophilous vegetation adapted to arid conditions, including grasses and low trees such as Acacia, Prosopis, Tamarix and Zizyphus. These plants possess small, waxy leaves to minimize water loss. The desert is rich in wildlife, hosting species like the great Indian bustard, desert fox, striped hyena and blackbuck. Conservation initiatives, including afforestation aim to restore the landscape and protect its unique species, with significant protected areas like the Desert National Park and Tal Chhapar Sanctuary.

These deserts exemplify the ecological diversity of arid regions and highlight the importance of conservation to protect their unique habitats.

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MAY 2024: UNVEILING THE ECOLOGICAL WONDERS OF THE INDIAN DESERT

Ms. Bhavyaben Radadiya

Mainly India has three deserts: Thar, Trans-Himalayan and Kutch

Thar Desert: A dry area of undulating sand dunes on the Indian subcontinent is known as the Thar Desert. It is located in the provinces of Punjab and Sindh (Sind), in eastern Pakistan, and in the state of Rajasthan, in northwestern India. Rajasthan, India: vegetation of the Thar Desert shrub vegetation in western Rajasthan, India's Thar (Great Indian) Desert. Approximately 77,000 square miles (200,000 square kilometers) make up the Thar Desert. The Punjab plain to the north and northeast, the irrigated Indus River plain to the west, the Aravalli range to the southeast, and the Rann of Kachchh to the south all border it. There, sustained high pressure and subsidence at that latitude give rise to a subtropical desert climate. The Thar to the east is typically avoided by the dominant southwest monsoon winds that bring summertime rains to a large portion of the subcontinent. The word "thul" which refers to the sand dunes in the area, is the source of the name Thar.

Trans-Himalayas: In the southern portion of China's Tibet Autonomous Region, the easternmost mountains of the Himalayas continue eastward. It is made up of an ill-defined mountain region that is roughly 1,000 km (600 miles) long and 140 km (225 miles) wide in the middle, with the width narrowing to 20 km (32 miles) at the eastern and western ends. The Trans-Himalayas are bordered to the south by the Brahmaputra (Yarlung Zangbo) River and to the west by the mountain ranges of the Kailas, Nganglun Kangri, and Nyainqentanglha. The Trans-Himalayas are primarily made up of granites and volcanic rocks that date back between 2.6 million and 66 million years. The mountains lack a clear alignment and are not split by significant river gorges like the main Himalayas. The highest pass is Chagoding Pass (19,308 feet) with an average height of 17,500 feet. Sven Hedin, a Swedish explorer, made the first known European sighting of the mountains in 1906.

Rann of Kachchh: Large saline mudflats known as the Rann of Kachchh are found in southern Pakistan and west-central India. The Great Rann and the Little Rann comprise it. "Desert" is what the Hindi word Rann signifies. The local folktale that the regions map, when flipped over, resembles the Sanskrit word for "tortoise", Kachchh, is the source of the word Kachchh.

The Rann is roughly 90 miles (150 km) long from north to south and 190 miles (300 km) long from east to west. The Kachchh Highland divides it into the Great Rann in the north and Little Rann in the southeast. The Great Rann is located nearly entirely in the Indian state of Gujarat, close to the Pakistani border, and spans an area of roughly 7,000 square miles. Stretching northeastward from the Gulf of Kachchh the Little Rann of Kachchh encompasses around 2,000 square miles within the state of Gujarat.

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INDIAN DESERTS: A HARSH YET RESILIENT ECOSYSTEM

Ms. Minal Patel

The Indian deserts, primarily the Thar Desert in Rajasthan and the Kutch Desert in Gujarat, are characterized by their arid climate, extreme temperatures, and sparse vegetation. Despite these harsh conditions, these deserts have evolved unique ecosystems that have adapted to survive in such inhospitable environments. The Indian deserts receive minimal rainfall, leading to low levels of soil moisture. This aridity has resulted in the development of xerophytic plants, which are adapted to survive in dry conditions. These plants have evolved various strategies to conserve water, such as having thick, waxy cuticles to reduce water loss, deep root systems to reach groundwater, and succulent leaves or stems to store water. Examples of xerophytic plants found in the Indian deserts include cacti, euphorbias, and acacia trees. The desert ecosystem is also home to a diverse range of animal species that have adapted to the arid conditions. These animals have developed various strategies to survive, including nocturnal activity to avoid the heat of the day, burrowing to escape the extreme temperatures, and efficient water conservation mechanisms. Common desert animals include camels, foxes, snakes, lizards, and various bird species.

The Indian deserts play a crucial role in the region's ecology. They act as windbreaks, preventing soil erosion and protecting coastal areas from storms. They also serve as important habitats for a variety of plant and animal species. However, the Indian deserts are facing numerous threats, including overgrazing, deforestation, and climate change. These threats are leading to habitat loss, biodiversity decline, and desertification. To protect the Indian deserts and their unique ecosystems, it is essential to implement sustainable land management practices, reduce human activities that contribute to desertification, and promote conservation efforts. This includes protecting key habitats, promoting sustainable tourism, and raising awareness about the importance of preserving the desert ecosystem. By taking these steps, we can ensure the long-term survival of the Indian deserts and the diverse species that inhabit them.

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ECOLOGY OF INDIAN DESERT

Ms. Aanal Maitreya

A desert is a region of extreme aridity, limited flora, and extremely high or low temperatures. Depending on the climate, there can be hot or cold deserts. People live in these arid low water lands to practice agriculture.

The enormous and arid Thar desert, also known as The Great Indian Desert, is located in the northwest corner of the Indian subcontinent. It covers an area of roughly 200,000 km² and acts as a natural boundary between India and Pakistan. About 85% of Thar desert is shared by India and Pakistan. An undulating sandy plain is covered in sand dunes. The area receives very little precipitation- less than 150 mm annually, has a dry climate, little vegetation and streams emerge during the rainy season but quickly disappear into the sand because they don't have enough water to reach the sea. Barchans, or crescent shaped dunes, are more common than longitudinal dunes and are more noticeable near the Indo-Pak border.

Some of the case studies regarding ecology of the Indian desert are described below:

In the desert region of Western Rajasthan, excessively the removal of certain tree species for fuel and other purposes, and the cultivation of marginal lands like sand dunes, among other activities, lead to a number of ecological changes that eventually cause desertification. These changes make the entire tract vulnerable to erosion hazards.

With a 280,000 km² size that makes up 61% of the state's total land area, The Great Indian Desert is the biogeographic easternmost boundary of the Saharan-Arabian Desert zone. Despite being one of the world's smallest deserts, the great Indian desert is rich in biodiversity and a diverse range of habitats. Xerophytes such as; *Prosopis cineraria*, *Capparis deciduas*, *Calotropis procera*, *Salvadora oleoides* and *Lasiurus scindicus* make up the majority of the vegetation in this region. The fauna of the great Indian desert, which is primarily of Palaearctic and Oriental origin and has an amazing diversity of habitats, is quiet rich in wildlife.

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URBAN FORESTRY: THE SMART ECOSYSTEM OF THE SMART CITIES!

Ms. Riddhi S Rathore

With the fast life, the cities are rapidly converting into smart cities. With such rapid evolution of cities, there is a need for greener architecture for sustainable development. Greenhouse gases emissions, global waste and natural resource consumption are major challenges faced by evolving cities. To overcome these challenges, we need to bring down the unfortunate consequences such as generating waste, producing carbon dioxide emissions, etc. The smart city concept is basically all about the idea of a sustainable city concept. Green architecture is crucial for plasticity. Smart cities have become a global solution for the existing developmental challenges. Urban vegetation provides many advantages to the urbanites such as alleviating temperatures, carbon sequestration, and flood damage control, controlling air pollution, adorning the urban structure, clean energy utilization and urban flexibility. The green architecture of smart cities opens a window for renewable energy applications. Therefore, developing a green architecture is a boost for reducing emissions and providing energy to urbanites. Studies have also been carried out and have concluded that green systems of urban spaces are not only sustainable but are also economically beneficial. Hence, it proves that the smart city concept has a lot of constructive effects.

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NUBA VALLEY: A COLD DESERT ECOSYSTEM OF RICH BIODIVERSITY

Ms. Dhruva Jani

A desert ecosystem is a type of terrestrial environment characterised by significant day-to-night temperature swings, little precipitation, and arid conditions. Rainfall is often scarce in desert regions, which limits plant growth and variety. The Great Indian Desert, which spans the Indian states of Rajasthan, Haryana, and Gujarat, is located there. Besides this, India has a lesser-known icy desert located in the Himalayan range (Fig 1). Nubra Valley is one such cold desert located in the northern part of Ladakh between the Ladakh and Karakoram Mountain ranges, the valley has exceptional ecological diversity. The valley's topography is made of sand dunes, wetlands, mountains, glaciers, and perennial snowfields (Fig 2). Along with agricultural fields and orchards, the valley is characterised by lush thickets of wild rose (*Rosa* species) and seabuckthorn (*Hippophae* species) (Joshi *et.al.*, 2006).

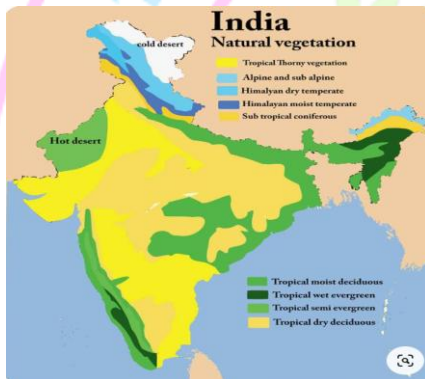


Fig 1: Map of Vegetation type in India

<https://shorturl.at/WvRtG>



Fig 2: Mountain ranges of Nubra valley

<https://shorturl.at/nhVJt>

Nubra Valley is known for faunal diversity and home to a variety of large carnivores, such as snow leopard (*Panthera uncia*), Himalayan grey wolf (*Canis lupus laniger*), and lynx (*Lynx lynx isabellina*). Numerous bird species breed in the valley, which serves as a crucial stopover for migratory birds on their route from Central Asia to the Indian subcontinent (Joshi *et.al.*, 2006). As a result, Nubra Valley is a representation of a Desert ecosystem with distinctive biological traits, a wide variety of biodiversity.

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VITAL ROLE OF FLORA AND FAUNA IN DESERT ECOLOGY

KM Bhavna Singh

Desert is a dry and sandy region with minute vegetation, which received less than 25 cm precipitation. Many types of deserts in India. Desert can be cold or hot depending on the geography of that area. Some plants and animals are maintaining the desert cycle. Cactus, *Salvadora*, *Ziziphus* etc. and animals like squirrel, scorpion, bat, camel and many birds are playing a vital role in desert.



Desert tortoise and kangaroo rats help in aeration of soil and create the habitat for other small insects. Animals like birds, insect and bat also help in pollination and seed dispersal. Plants help in soil stabilization and overcome the leaching of nutrients and stop the erosion of soil. Plant roots also provide the signal for microflora which help in production of secondary metabolites. Secondary metabolites help in enhancing of pollination. Plants also provide the food and shelter for animals. Desert plants like cactus and succulent are important in water conservation in their tissues. This type of conserve water helpful in dry condition for animal as crucial resources.

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THE IMPACTS OF RENEWABLE ENERGY ON DESERTS AND THEIR ALTERNATIVES

Mr. Trupesh Revad

Future energy should be derived from renewable sources. The production of renewable energy sources is expanding more quickly than of conventional fossil fuels, signaling a significant shift in the global energy landscape. Biodiversity benefits from renewable energy's reduction of greenhouse gas emissions and climate protection. Nevertheless, even it helps the environment, it upsets the natural order.

Impacts: As a means of combating climate change, some nations are working to cut back on their consumption of gas and oil. Coal, for example, appears to be nearing the end of its useful life. Due to its layout and construction, energy production has an impact on biodiversity through things like habitat loss, wildlife extinction, and land damage. One common negative effect of renewable energy is the devastation of wildlife and plant life.

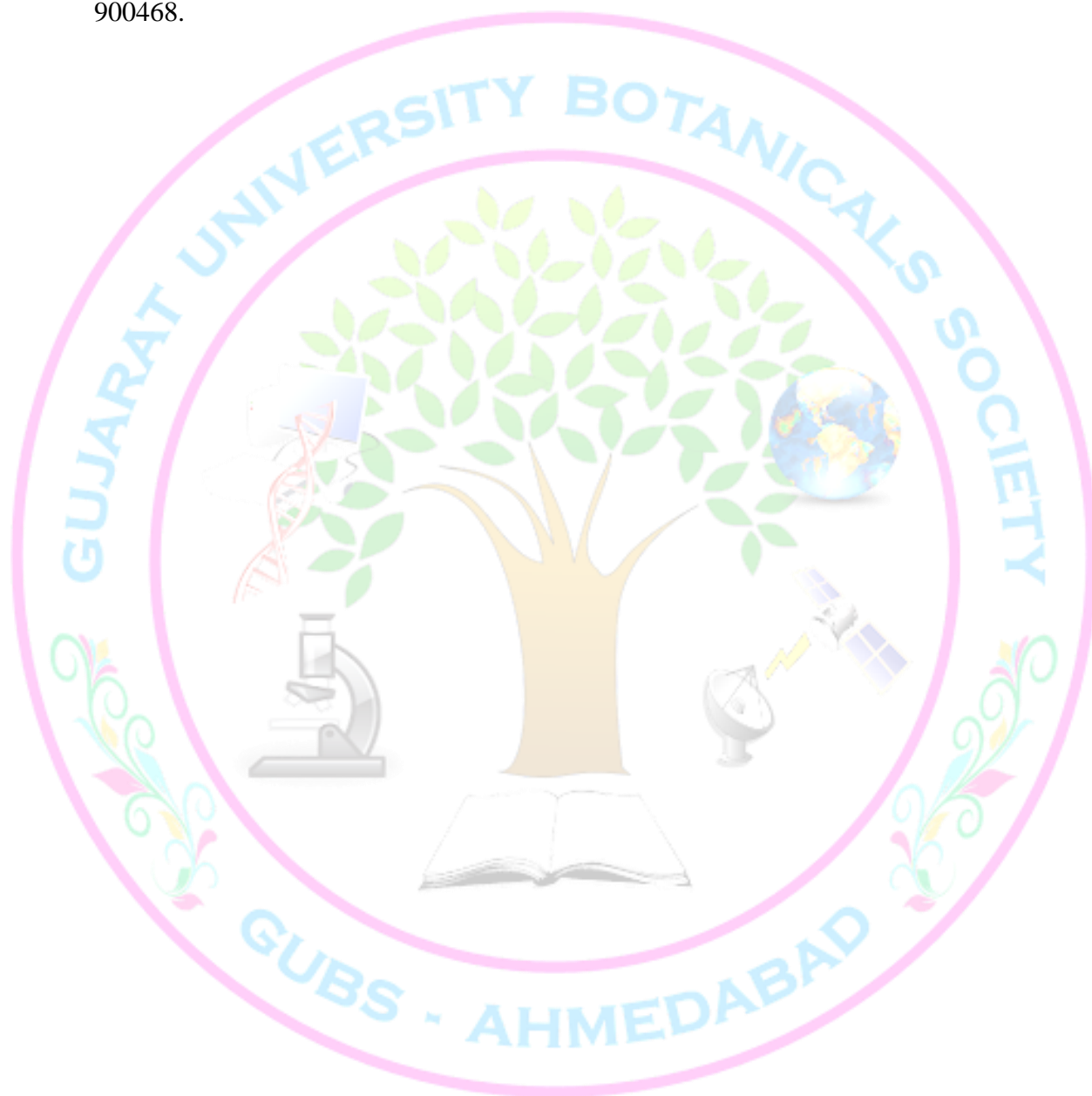
Alternatives: Although wind and solar energy are plentiful, quiet, and environmentally friendly, they are also renewable energy sources. Wind turbines and other renewable energy sources take up less room and make more space available for open space. The deserts are the best sites to gather solar energy. The deserts' size and the average amount of solar energy they get each year can be used to determine their solar energy potential. Renewable energy sources like solar and wind power are rising to the top among other energy sources and are gradually finding their way into a wide range of applications. With the expansion of these renewable sources, it will become increasingly crucial to find strategies to lessen their influence on natural ecosystems.



Photo from- <https://www.earth.com/news/environmental-impacts-solar-wind-energy/>

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GLIMPSES OF ACTIVITIES OF GUJARAT UNIVERSITY BOTANICAL SOCIETY

