Final Report

Title: BIODIVERSITY and IT'S ROLE

As a Field work for course

Environmental Studies(CHE 110)

By

Sr. No.	Registration No	Name of Students	Roll No	Total Marks	Mark obtained	Signature
1	12403737	Pritish Kumar	64			
2	12406834	Dhanush	65			
3	12410534	Sherin James	66			

Submitted To:

Lovely Professional University

Jalandhar, Punjab, India.

Delivered by:	**Received by:**
Name of the student: Pritish Kumar Reg. No.: 12403737 Signature:	Name of faculty: UID: Signature:

Role of each team member

Member1

Name:	**Pritish Kumar**
Reg No.:	**12403737**
Roll No.:	**64**
Section:	**K24AN**
Role of the Member in the current work:	**Developing web**
Signature with date:	

Member2

Name:	**Dhanush**
Reg No.:	**12406864**
Roll No.:	**65**
Section:	**K24AN**
Role of the Member In the current work	**Research on content**
Signature with date:	

Member3

Name:	**Sherin James**
Reg No.:	**12410534**
Roll No.:	**66**
Section:	**K24AN**
Role of the member In the current work	**Content Writing**
Signature with date:	

Code:

(HTML)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  <link rel="stylesheet" href="homepage.css">
  <header>
    <h1>Welcome to the Biodiversity Homepage</h1>
    <nav>
      <a href="#introduction">Introduction</a>
      <a href="#topics">Key Topics</a>
      <a href="#resources">Resources</a>
    </nav>
  </header>

  <section id="introduction">
    <h2>Introduction</h2>
    <p>Biodiversity refers to the variety of life on Earth, encompassing the diversity of species, ecosystems, and genetic variations. It is crucial for ecosystem health and human survival.

      The term biodiversity was coined in 1985. It is important in natural as well as artificial ecosystems. It deals with nature’s variety, the biosphere. It refers to variabilities among plants, animals and microorganism species.

      Biodiversity includes the number of different organisms and their relative frequencies in an ecosystem. It also reflects the organization of organisms at different levels.

Biodiversity holds ecological and economic significance. It provides us with nourishment, housing, fuel, clothing and several other resources. It also extracts monetary benefits through tourism. Therefore, it is very important to have a good knowledge of biodiversity for a sustainable livelihood.
    </p>
  </section>
  <img src="https://infinitylearn.com/surge/wp-content/uploads/2023/03/Conservation-ofbiodiversity.jpg?v=1686142509">

  <section id="topics">
    <h2>Key Topics</h2>
```


Importance of Biodiversity:

Biodiversity and its maintenance are very important for sustaining life on earth. A few of the reasons explaining the importance of biodiversity are:

Ecological Stability

Every species has a specific role in an ecosystem. They capture and store energy and also produce and decompose organic matter. The ecosystem supports the services without which humans cannot survive. A diverse ecosystem is more productive and can withstand environmental stress.

Economic Importance:

Biodiversity is a reservoir of resources for the manufacture of food, cosmetic products and pharmaceuticals.

Crops livestock, fishery, and forests are a rich sources of food.

Wild plants such as Cinchona and Foxglove plant are used for medicinal purposes.

Wood, fibres, perfumes, lubricants, rubber, resins, poison and cork are all derived from different plant species.

The national parks and sanctuaries are a source of tourism. They are a source of beauty and joy for many people.

Ethical Importance:

All species have a right to exist. Humans should not cause their voluntary extinction. Biodiversity preserves different cultures and spiritual heritage. Therefore, it is very important to conserve biodiversity.

Biodiversity in India

India is one of the most diverse nations in the world. It ranks ninth in terms of plant species richness. Two of the world's 25 biodiversity hotspots are found in India. It is the origin of important crop species such as pigeon pea, eggplant, cucumber, cotton and sesame. India is also a centre of various domesticated species such as millets, cereals, legumes, vegetables, medicinal and aromatic crops, etc.

India is equally diverse in its faunal wealth. There are about 91000 animal species found here.

However, diversity is depleting at a drastic rate and various programmes on biodiversity conservation are being launched to conserve nature.

Threats to Biodiversity:

1. Climate Change

Climate change refers to the long term and irreversible change that occurs in the Earth's climate. This increase in the atmosphere's temperature has major effects on the environment such as the seasons, rising sea levels, and glacial retreats.

<img src="https://www.bioexplorer.net/file/biodiversity-threat-climate-change.avif">

Organisms' biodiversity is affected by their population, distribution, level of the ecosystem, and even the individuals' morphology and function.

Because of the increase in temperature, organisms have already adapted by expanding their ranges in latitudes. Because of this behaviour, many species' populations have declined. Aside from this, many animals have exhibited changes in the timings of their physiological functions. These include the birds and insects migrating and mating earlier than usual, resulting in some failure in the breeding and production of young.

Regarding ecosystems, studies revealed that climate change has expanded many desert ecosystems and thus affected the function and services that the ecosystem can provide.

For humans, the rapidly increasing rate of climate change imposes great threats to human security as natural resources are becoming more and more limited. Global warming and climate change already have irreversible impacts on biodiversity. And these effects, if not mitigated, can lead to more significant threats in the future.

2. Habitat Loss and Degradation

<img src="https://www.bioexplorer.net/file/threat-to-biodiversity-habitat-loss.avif">

Habitat Loss refers to changes in the environment that result to the rendering of a specific habitat to be functionally valuable. The habitat can no longer accommodate and support the life of the organisms present, thereby declining their population.

Natural events like natural calamities, geological events, or anthropogenic activities like deforestation and man-induced climate change may cause Habitat loss.

In habitat degradation, the organisms that were once living in a particular area or region are displaced and forced to relocate; thus resulting in biodiversity reduction.

Indeed, man-made efforts are the prime reasons for habitat loss. Currently, clearing out ecosystems for agriculture conversion and industrial expansion continues to displace organisms of their natural habitat. Other activities include logging and mining.

3. Pollution

<img src="https://www.bioexplorer.net/file/threat-to-biodiversity-pollution.avif">

Be it water, air, or land pollution, all forms of pollution[6] appear to be a threat to all life forms on Earth. However, it poses a major threat to biodiversity regarding the nutrient loading of nitrogen and phosphorus elements.

Acid rain[7], as its name suggests, is rain that is composed of harmful acids (i.e., nitric and sulfuric acid). This rain is usually a result of pollution from the excessive burning of fossil fuels.

Some types of pollution, like the depletion of the ozone layer, can be reversible. However, this shall only happen when humans stop or limit the use of various chemicals contributing to its destruction.

4. Invasive Species

<img src="https://www.bioexplorer.net/file/threat-to-biodiversity-invasive-species.avif">

An exotic or unnatural species can be any organism that has been introduced to a foreign habitat. This introduction can cause major threats to the native species as they often become subject to great competition for resources, disease, and predation. When these species have successfully colonized the area, they are already called “invasive” ones.

Next to habitat loss, invasive species are ranked as the second biggest threat to biodiversity.

The greatest threat that invasive species[8] can bring is their capability to change an entire habitat. These species are highly adaptable and can easily dominate a certain area. Because many natural species survive only in a particular environment, they tend to be displaced or perish.
Invasive Species Examples

Brown Tree Snake

Brown Tree Snake

Hawaiian Duck Vs. North American Mallard

Hawaiian Duck Vs. North American Mallard

5. Overexploitation

<img src="https://www.bioexplorer.net/file/threat-to-biodiversity-overexploitation.avif">

Overexploitation refers to the act of overharvesting species and natural resources at rates faster than they can sustain themselves in the wild. Because of this, the species population is put at great risk of reduction.

If the act of overexploitation continues, it can ultimately bring extinction to many species, even if they still exist in the wild.

6. Other Potential Threats

Pathogens (Ebola)

Aside from the five threats above, there are still a lot of drivers that may either directly or indirectly contribute to the loss of biodiversity. One good example is wildlife epidemics and infectious diseases like Ebola, infectious bursal disease, and flu. This phenomenon does not only affect wildlife but also human health as well.

Aside from this, human-induced activities, including economic, technological, scientific, cultural, and demographic factors, also impact biodiversity. The desiccation of wetlands and soils due to the excessive pumping of water tables often contributes to the death of organisms living in these environments.

Overusing natural parks and watersheds as tourist destinations and recreational spots also threaten biodiversity because humans cause too much noise and perturbations that disrupt the animals' normal activities.

Conservation Efforts:

conserve forest

Prevent deforestation

Maintain soil organic matter

Halt species extinction

Reduce overfishing

Mitigate climate change

The conservation movement is a political, environmental, and social movement that seeks to manage and protect natural resources, including animal, fungus, and plant species as well as their habitat for the future

Endangered Species:

Here is a list of some endangered species1:

Sperm Whale

Tiger

Northern White Rhinoceros

Orangutan

African Wild Dog

Asian Elephant

According to the IUCN Red List of Threatened Species, more than 42,100 species are threatened with extinction. This includes amphibians, mammals, conifers, birds, sharks & rays, reef corals, selected crustaceans, reptiles, and cycads.

Restoration Ecology:

Restoration Ecology facilitates interdisciplinary advances in ecological restoration from regional to global scales. Our journal is paving the way to a crucial shift in restoration ecology, by publishing original papers on the full range of experimental, theoretical, technical, practical, policy, governance, and strategic research and applications across all terrestrial and aquatic ecosystems and taxa. Restoration Ecology is the journal of the Society for Ecological Restoration.

</section>

<section id="resources">

<h2>Resources</h2>

```
      <p>Explore the following resources to learn more about biodiversity:</p>
      <ul>
        <li><a href="https://www.biologicaldiversity.org/" target="_blank">Center for Biological Diversity</a></li>
        <li><a href="http://www.istl.org/12-fall/internet.html" target="_blank">Biodiversity Resources Guide</a></li>
      </ul>
    </section>

    <footer>
      <p>&copy; 2024 Biodiversity Initiative</p>
    </footer>

</body>
</html>
```

(CSS) body

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margin: 0;     padding: 0;
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color: #004d40;
}
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#00796b;     color: white;
padding: 20px;     text-align:
center;
}
img{     align-items:
center; }
```

```
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15px;     text-decoration:
none;     color: #004d40;
}
section {
padding: 20px;
}
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white;     position: relative;
bottom: 0;     width: 100%;
}
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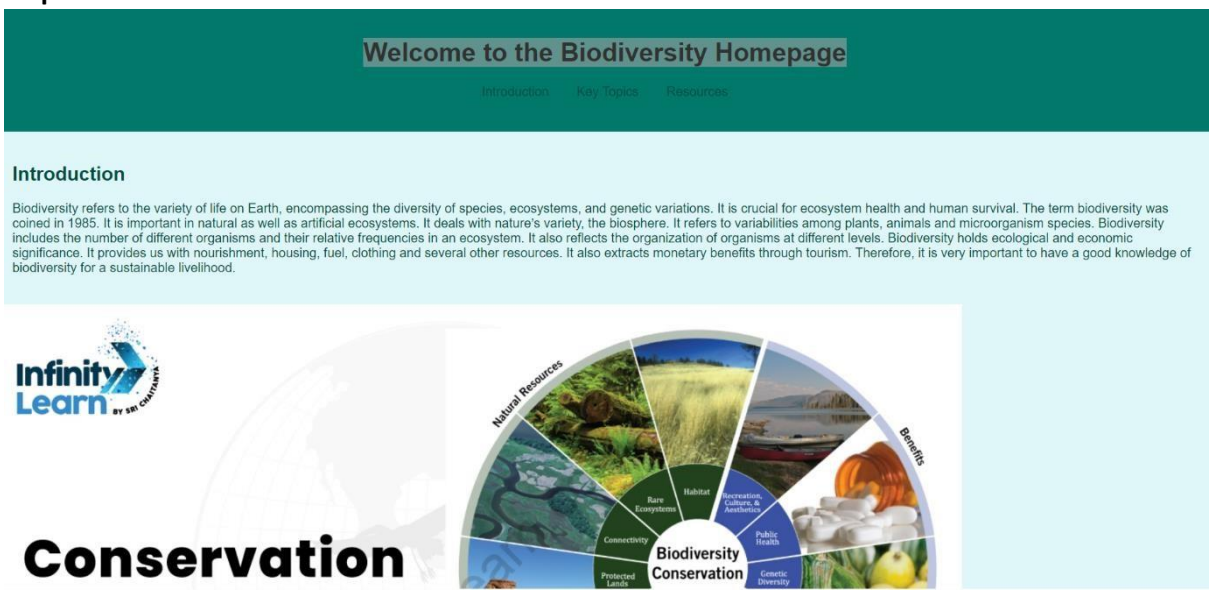
Output:



Conservation of Biodiversity

Key Topics

- Importance of Biodiversity:
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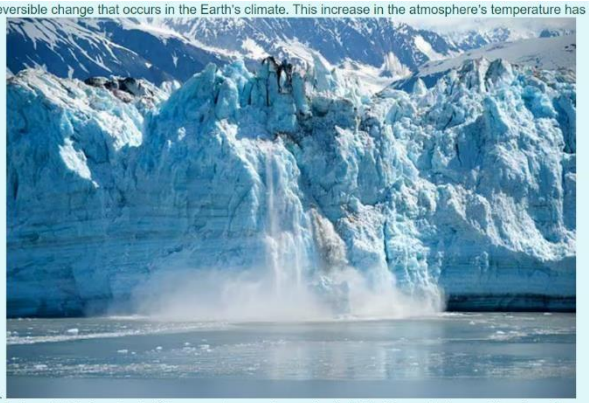

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