



**GREEN LEAGUE**  
Sport Alliance for the Environment

# Characteristics of Ecosystems

Aquatic and terrestrial ecosystems By

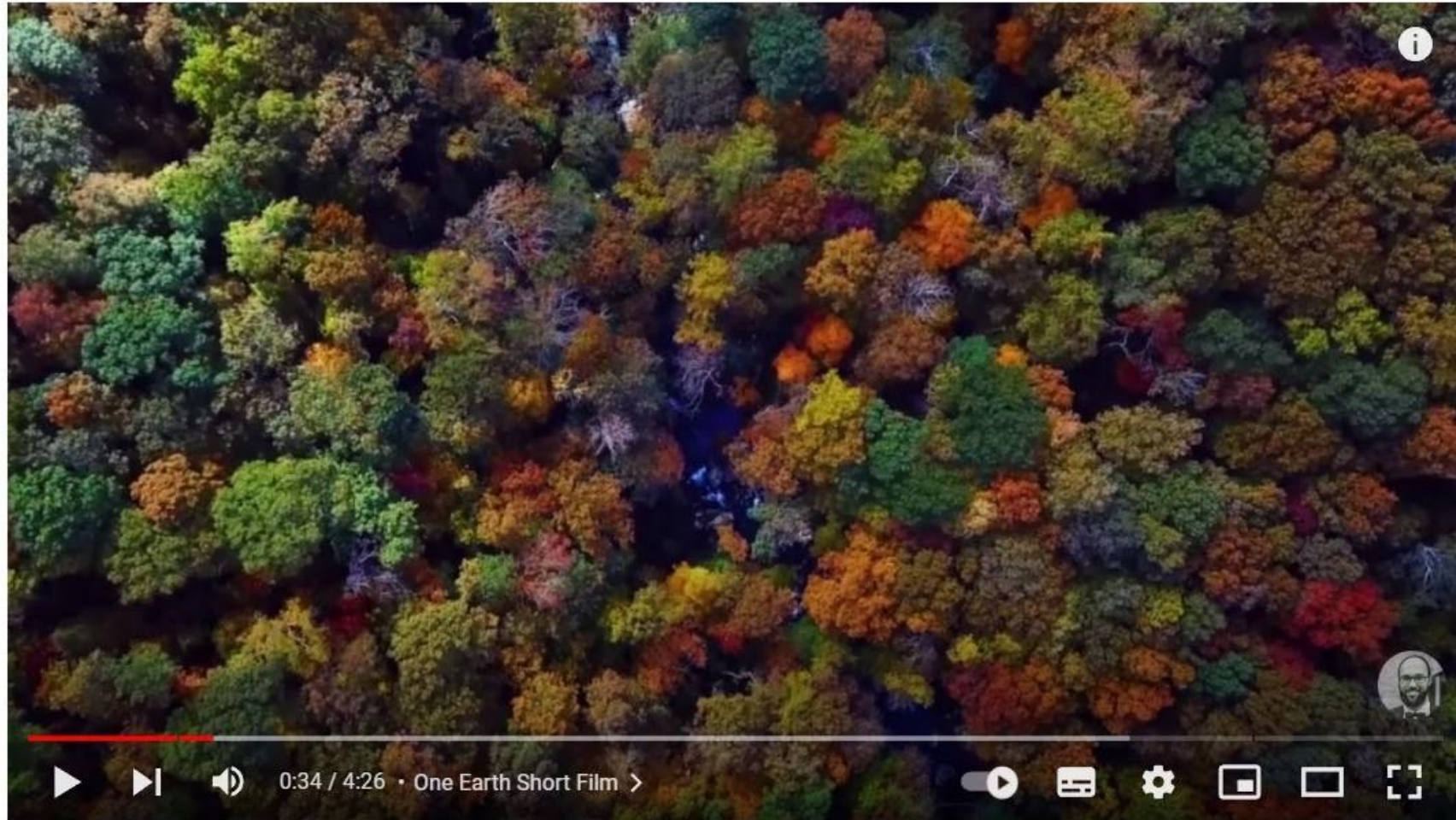


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# Ecosystems

<https://www.youtube.com/watch?v=QQYgCxu988s>



One Earth - Environmental Short Film



Which ecosystems have you  
seen?

Which risks for each ecosystem?

# Ecosystems



Saltwater ecosystems



Freshwater ecosystems



Mountain ecosystems



Forest ecosystems



## Wetlands

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- **Coastal wetlands** such as lagoons, natural or artificial salt marshes, dune systems and Posidonia meadows act as natural barriers against extreme marine events
- **Inland wetlands** such as floodplains, rivers, lakes and marshes, on the other hand, have the capacity to absorb water, store excess rainfall and mitigate the impacts of flooding.

# Wetlands

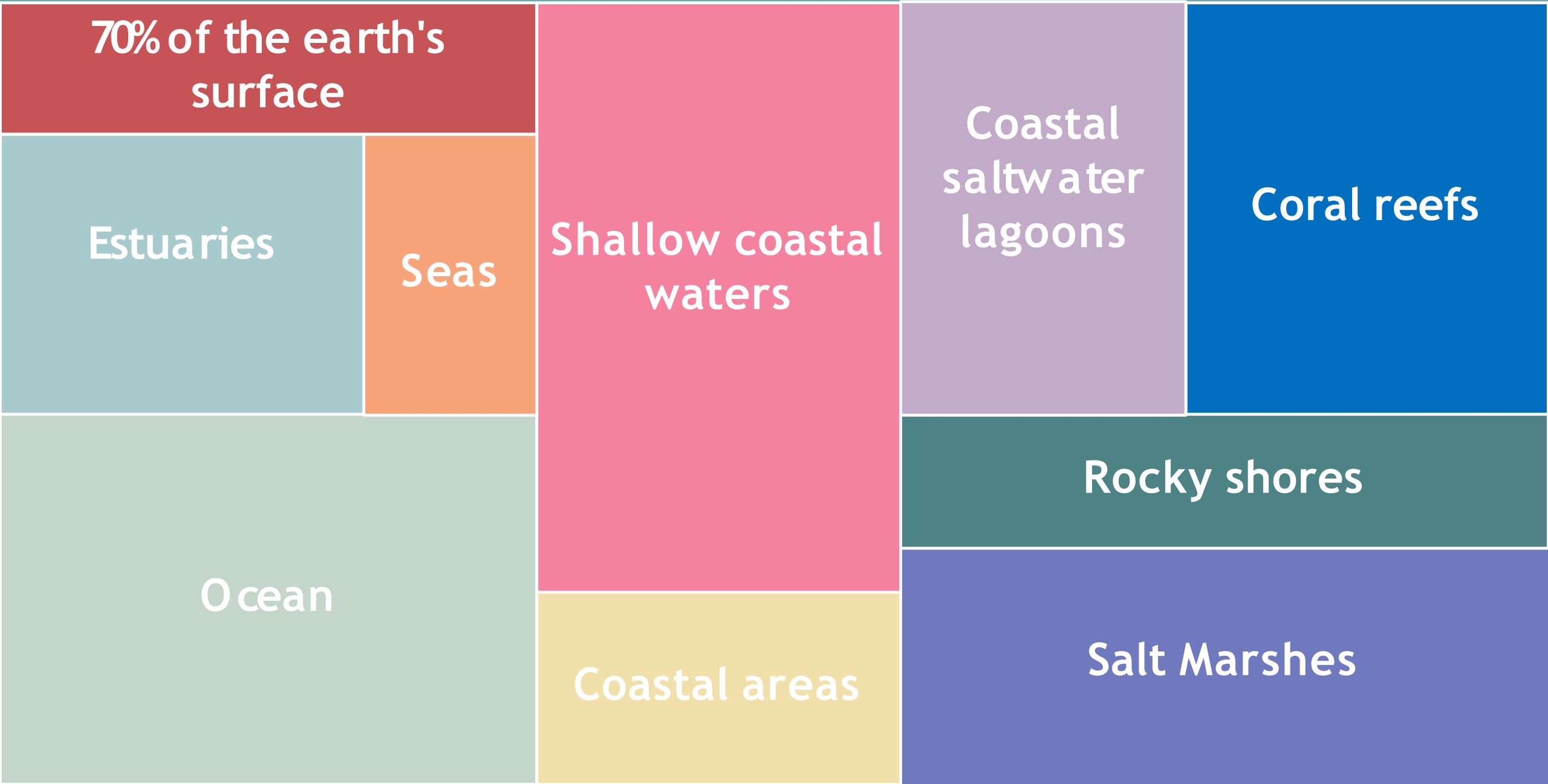
- Stored water
- Drinkable water
- Filter and absorb harmful fertilisers and pesticides, as well as heavy metals and toxins of industrial origin
- Food
- Crop irrigation
- Biodiversity
- Shock absorbers of extreme natural events (river flooding, of drought)
- Mitigation of the impact of climate change and limit the erosion of coastal areas



Source: Ramsar Convention, 1971 -

[https://www.changeclimatechange.it/site/assets/files/6165/2021\\_ecosistemi\\_acquatici.pdf](https://www.changeclimatechange.it/site/assets/files/6165/2021_ecosistemi_acquatici.pdf)

# Saltwater ecosystems



# Natural protection elements



- **Mangrove trees:** habitat - buffer storms – filter



- **Estuaries habitat -** nesting grounds - filter



- **Coral reefs:** fragile - source of food – protection - nursery



**What's the percentage of freshwater?**





# Fresh water ecosystem

- **Less than 3% !**
- → The half that is available as a liquid (the rest is ice)
- Freshwater ecosystems naturally share resources between habitats.
  - **River and stream** ecosystems bring salts and nutrients from the mountains to the ocean, and salmon bring these nutrients from the ocean to the mountain.
  - **Lakes and ponds** can exchange nutrients from the bottom to the surface and back again

# Risks for the aquatic ecosystem

## ***Climate change***

- extreme weather events
- the impact on the earth's water cycle

## ***Pollution***

## ***Invasive species***

→ imbalances to biodiversity.

## ***(Over) Fishing***

## ***Cementing rivers***

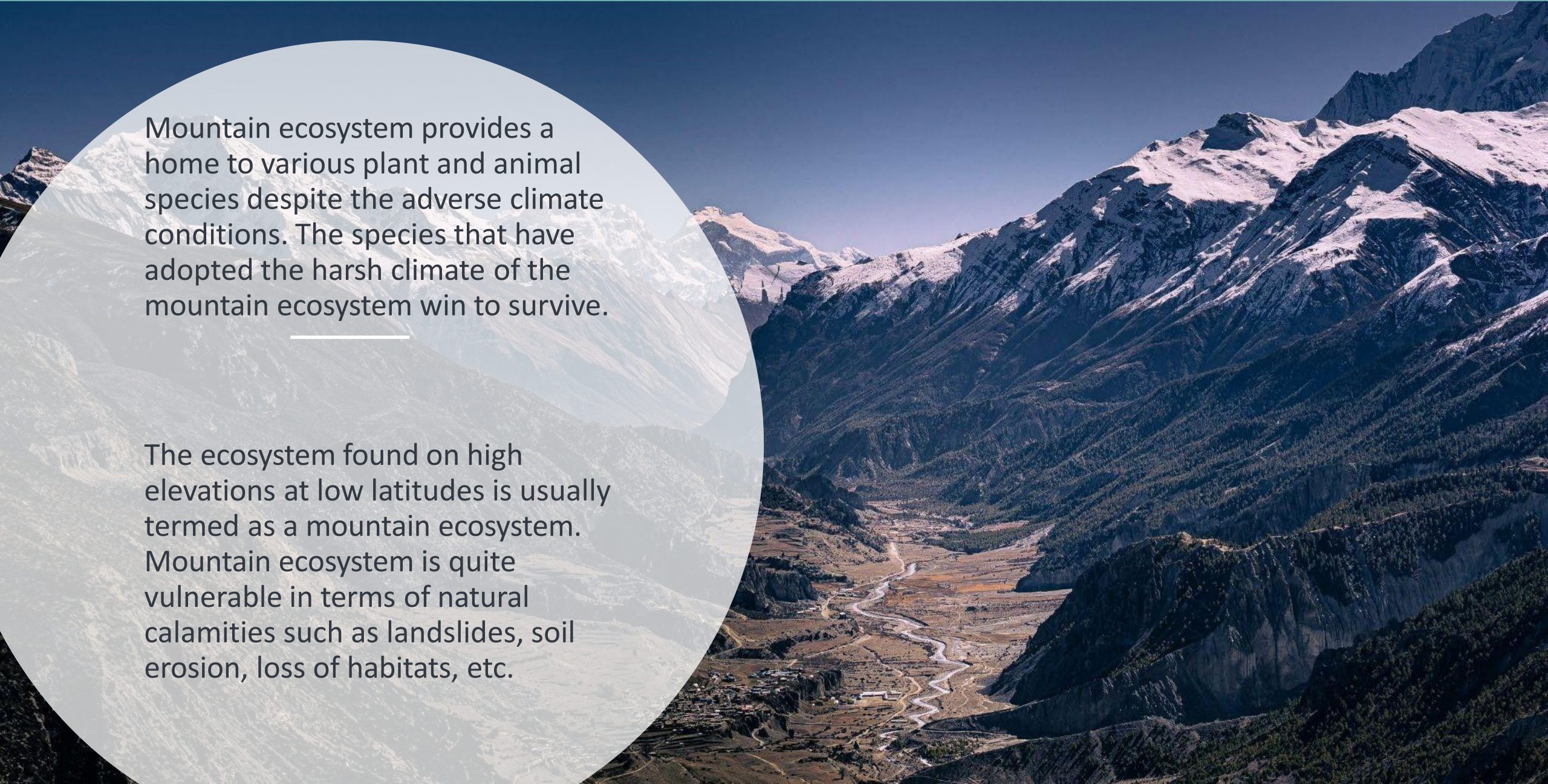


# Mountain ecosystems

Mountain ecosystem provides a home to various plant and animal species despite the adverse climate conditions. The species that have adopted the harsh climate of the mountain ecosystem win to survive.

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The ecosystem found on high elevations at low latitudes is usually termed as a mountain ecosystem. Mountain ecosystem is quite vulnerable in terms of natural calamities such as landslides, soil erosion, loss of habitats, etc.



**What's the percentage mountains?**



# The role of mountain ecosystems

Around 20% !

The Mountain ecosystem is fundamental to life since it acts as a primary source of freshwater.

Approximately 80% of worlds freshwater is originated from mountains in the form of melting mountain ranges and submerged into rivers and lakes.

Mountain ecosystem supports the lives of various plants and animal species despite its fragile features

To know

The fluctuation in the climate becomes more as you go higher on high altitudes. It takes just a moment to change the weather from a thunderstorm to a bright sunny sky or from warm weather to a below freezing point.

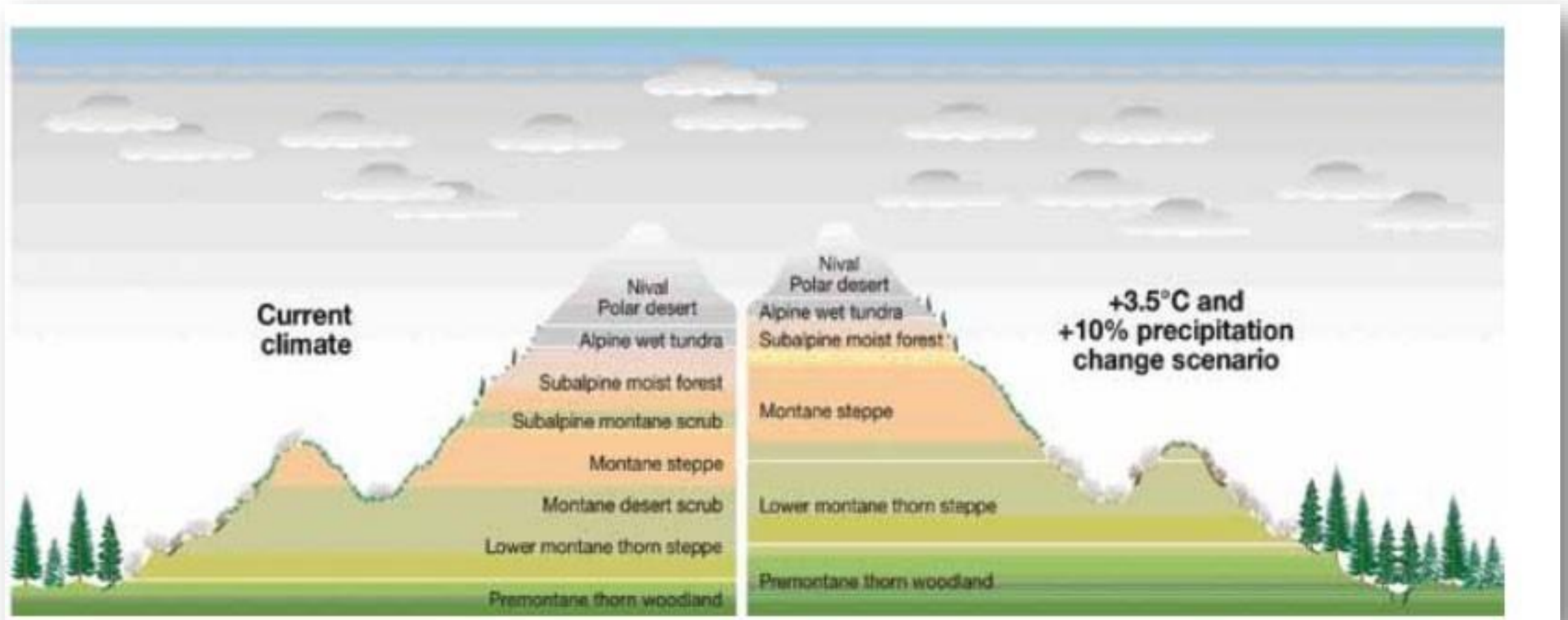


# Risks for mountain ecosystems

- Melting glaciers
- Glacial lake outburst floods
- Reduced snow cover
- Avalanches
- Heavy snow and cold extremes
- Floods and flash floods
- Windfires



# What will happen with the climate change?



Impact on mountain vegetation zones" by GRID-Arendal, [www.grida.no/resources/6475](http://www.grida.no/resources/6475) - CC BY-NC-SA 2.0

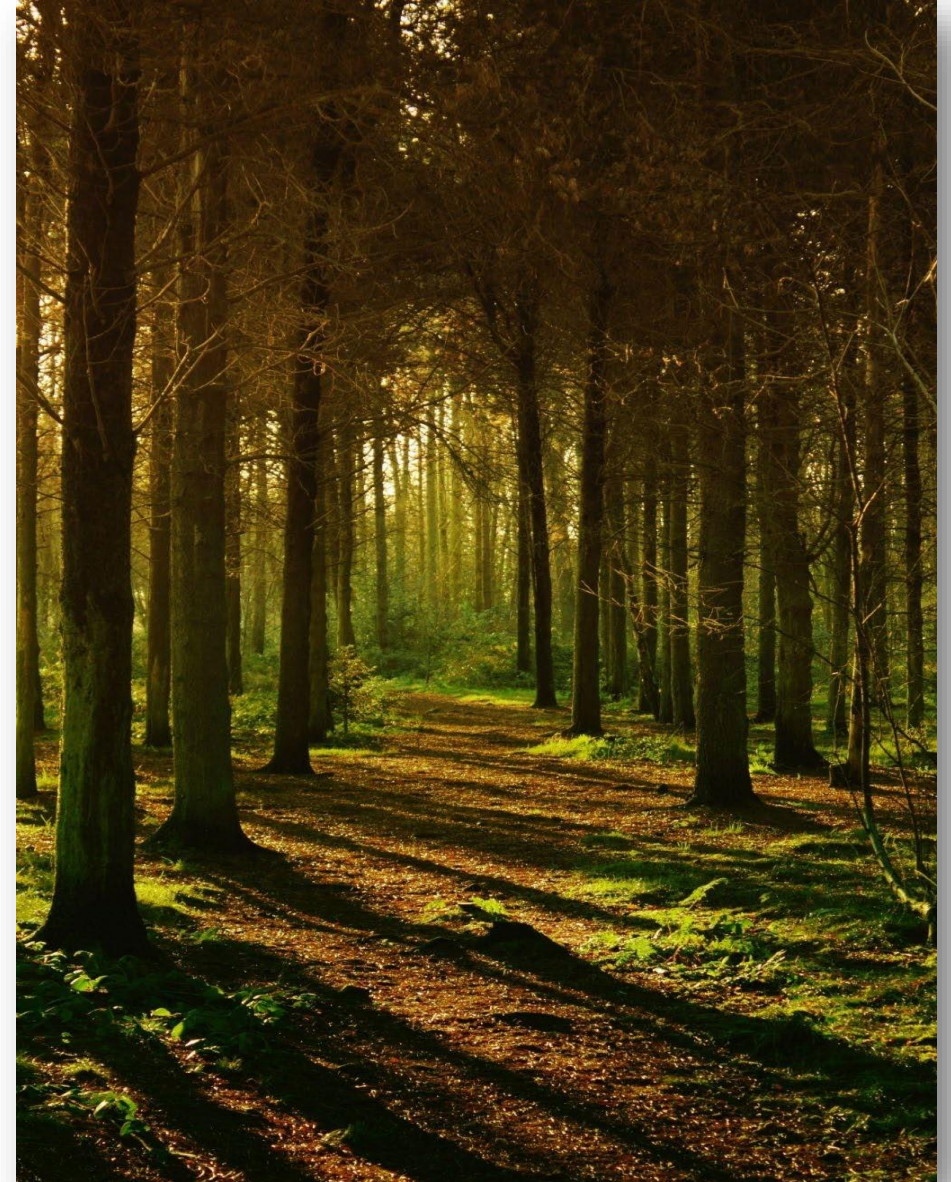


# Forest ecosystems

The forest is a plant association consisting of trees, shrubs, bushes.

It consists of plants, animals, fungi, bacteria, which interweave complex relationships with each other. The forest is a reservoir of biodiversity.

Trophic networks are established among producers, consumers and decomposers. The more intertwined and species-rich these are, the more stable the 'forest' system will be, in balance with the environment and an expression of healthy biodiversity.



# Role of forest ecosystems

... **help provide your water**,  
by regulating quantity and  
quality of supply

... **protect you** against natural  
hazards like avalanches,  
flooding or rock-falls

... **support people's  
livelihoods**, by providing  
employment and income

... **help to mitigate our changing  
climate**, by storing carbon in forests  
and in wood-based products

... **heat your house and  
power your car** via  
biofuels and bioenergy

... **provide shelter for wildlife  
and biodiversity**, by offering  
favourable habitats and  
microclimates

... **allow you to build and  
furnish your home** with wood,  
cork and wood-based products

... **moderate your local climate**,  
helping regulate wind,  
humidity and temperature

... **offer sustainable alternatives** to  
non-renewable, fossil-based materials used in  
construction, textiles, packaging and other  
products, originating from wood and cork

... **offer an inspirational  
setting** for leisure, recreation,  
adventure and hunting

... **bring good cheer** with products  
like resins, tanins, decorative  
materials, Christmas trees

... **keep you healthy** with natural  
medicinal products and space for  
mental well-being

... **nourish your body** with  
berries, mushrooms, fruits and  
nuts, honey and game meat

... **feed your soul**,  
offering spiritual inspiration  
in a haven of nature



# Risks for the forest



***Pollution***

***Climate change and global warming***

***Fires***

***Anthropic pressure***

- Deforestation
- Loss of biodiversity
- Waste of excavation



# 10 8 years to heal the planet

<https://www.youtube.com/watch?v=LIPMERHaLKM&t=58s>



The video player shows a forest fire with thick smoke rising from the trees. In the top right corner, the UN Environment Programme logo is visible. A large text overlay in the center reads: "In order to meet the Sustainable Development Goals, ecosystem degradation must be stopped and restoration undertaken on a massive scale." The video player interface includes a play button, a progress bar at 0:00 / 1:00, and various control icons like volume, settings, and full screen. A "SUBSCRIBE" button is located in the bottom right corner of the video frame.

UN  
environment  
programme

In order to meet the Sustainable Development Goals, ecosystem degradation must be stopped and restoration undertaken on a massive scale.

0:00 / 1:00

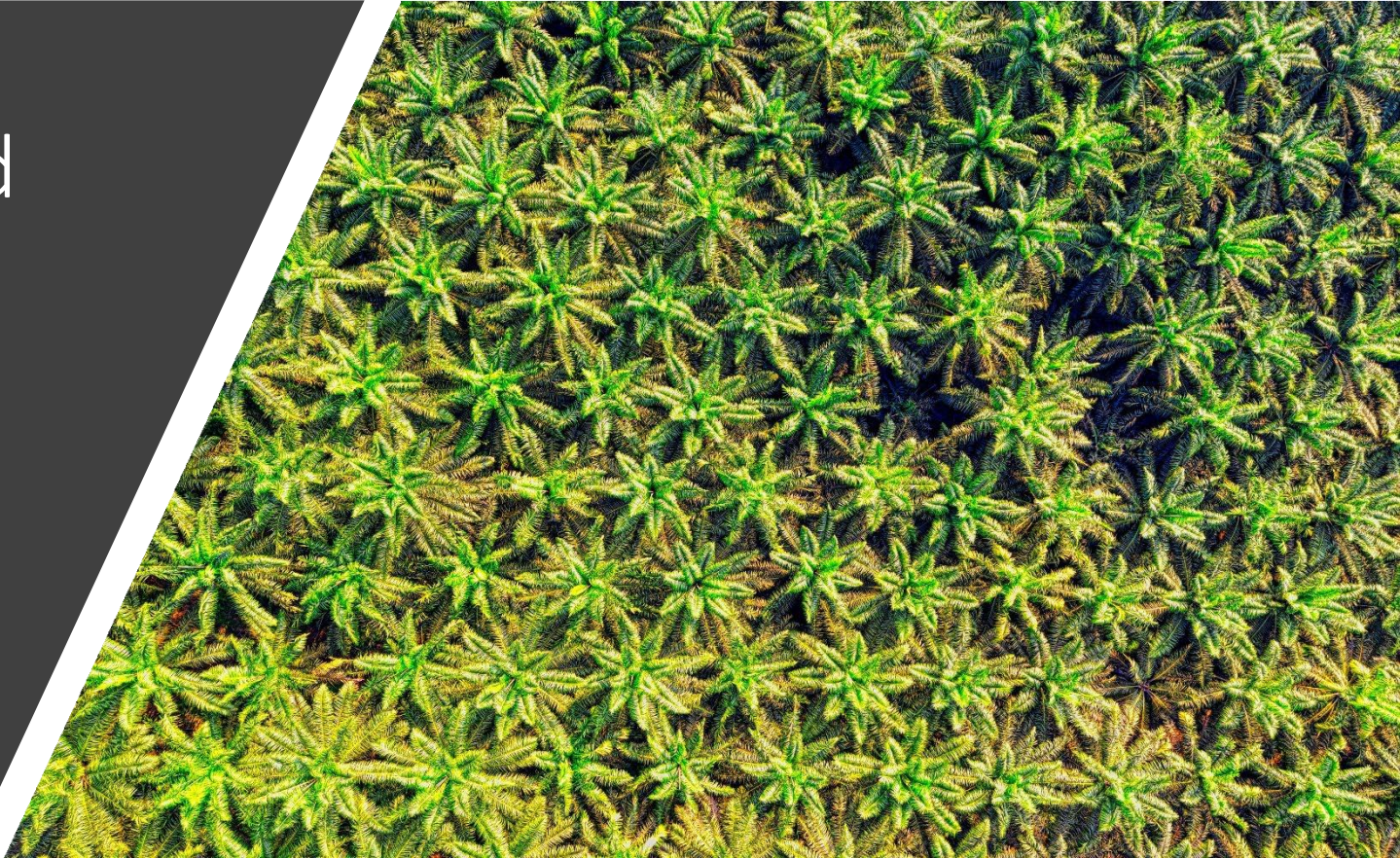
SUBSCRIBE

UN Decade on Ecosystem Restoration: 10 years to heal the planet



# Not all that glitters is gold

- **What could be the risk of these practices?**
- Planting trees
- Buying exotic fruits
- Feeding wild animals
- Building dams
- Crops





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