Desertification

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1st hour
Definition

- Desertification is the degradation of land in arid, semi-arid and sub-humid areas.
- It turns productive desert into non-productive desert.
- Desertification mainly occurs due to poor land management.
Brief Background

- Desertification is caused by: Overgrazing, Cultivation on bad farm land, Destruction of vegetation, Over-cutting of wood, and incorrect irrigation practices.
- When drought occurs, the effects worsen.
- Term became well known in the 1930’s, during the “Dust Bowl” in the U.S.
Regular stock movement helped prevent desertification, but fencing has prevented the animals' movement.

Man made waterholes and windmills have also prevented animal movement, and cause over-grazing.

The large human population, and high poverty level also causes people to overuse their environment.
Significance

- Desertification reduces the ability of land to support life.
- Desertification reduces plant cover, which leads to soil erosion. The reduced cover also causes more frequent and severe flooding, and sand storms.
- Loss of soil nutrients, and vegetation undermines food production, and can contribute to famine.
- Can increase temperatures in the regions due to greenhouse gas emissions.
Reduces regional precipitation.

Less topsoil can lessen the availability of water.

Can cause a drought.

Less plant cover can reduce the amount of Carbon Dioxide removed.
The Sahara Desert

- The Sahara Desert is advancing 5-10 km a year.
- The desert has winds up to 100 km/h and has a hottest temperature of 135 degrees F.
- The desert receives less than 25mm a year.
- The high winds cause the sand dunes to move great distances, and disrupts the Sahel and the farms of the area.
- The animals developed mechanisms to conserve water due to the extreme aridity, and have very little food.
- The decimation of vegetation cause widespread hunger in the surrounding areas.
The Dust Bowl

- In the 1930’s, the U.S. experienced great desertification in the Great Plains.
- This was due to drought and poor farming methods.
- The soil became dust, and blew across the region in large dust storms.
- The storms were later accompanied by dirt storms and massive flooding.
- Millions of people had to abandon homes, because food and water were scarce.
Worldwide desertification is making 12 million hectares useless for cultivation = 87% of cultivated lands in the country
61%+ of all productive dry lands are moderately-severely desertified.
Global warming will increase areas of desert climates by 17%
Outcomes

- Once started, desertification is impossible to reverse.
- 4.5 billion dollars will have to be spent every year for 20 years to prevent it.
- Desertification is relatively stabilized in the U.S., but it is spreading in other countries.
- Unchecked, desertification can cause more farm land to become unusable, and leave people with very little food and water.
- It will also increase the number of arid regions in the world if it continues.
Possible Solutions

- Reduce the numbers of animals on the land - allows plants to re-grow
- Cover sand dunes with large boulders or petroleum - wind barrier
- Use sand fences or straw grids which decrease wind velocity
- Plant tree fences or grass belts - stops sand
- Become more efficient in our use of water resources
Personnel Suggestions

- Farmers should be educated about the effects of Desertification and control their animals grazing.
- People in general should be more informed on the problem.
- Citizens should write to their local congressmen to suggest a water control bill.
- New irrigation systems should be researched for the arid regions in the world.


