

Desertification



Caitlin Huston

5/25/07

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.

Background Cont.



- ▶ 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

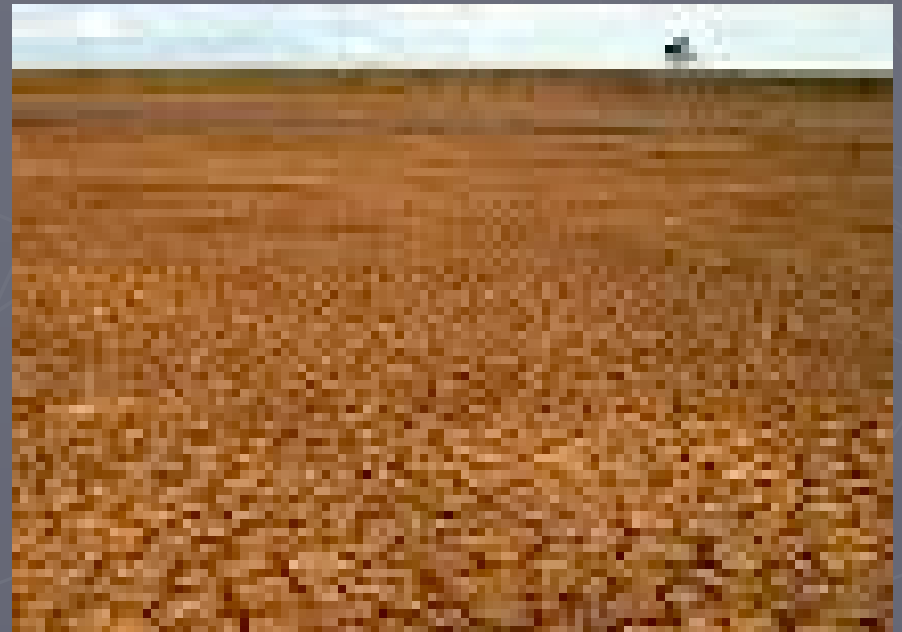
Significance

- ▶ 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.



Significance Cont.

- 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.

Statistics

- ▶ 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.

Citations

- ▶ Bonnefield, Paul. "1930's Dust Bowl." 1930's Dust Bowl. 26 May 2007 <<http://www.ptsi.net/user/museum/dustbowl.html>>.
- ▶ "Desertification." Desertification. 22 May 2007 <<http://www.botany.uwc.ac.za/Envfacts/facts/desertification>>.
- ▶ "Desertification- A threat to the Sahel." Eden Foundation. Aug. 1994. 26 May 2007 <<http://www.Eden-foundatoin.org/project/desertif.html>>.
- ▶ "Desertification." Wikipedia. 22 May 2007 <www.wikipedia.org/wiki/desertification>.
- ▶ "Desertification." Fact Sheet. 24 May 2007 <http://www.yptenc.org.uk/docs/factsheets/env_facts/desertification.html>.
- ▶ Olsson, Lennart. "Do human's cause deserts?" The Geographical Review 1 July 2003.