

## Human impact on Ecology & Resources Study Guide

- The population then experiences exponential growth, which is a pattern of growth in which population grows faster as it increases in size.
- The number of organisms that any given environment can support is its carrying capacity.
- Environmental factors that do not depend on population size, such as storms and fires, are density-independent factors.
- Environmental factors that depend on population size, such as disease, predators, and competition for food are called density-dependent factors.
- All organisms use resources to maintain their existence. The use of the resources has an impact on the environment.
- As populations increase, the demand for resources increases. Because resources are limited, populations will stop growing when they reach carrying capacity.
- Populations grow exponentially at early stages. Earth is currently experiencing a human population explosion.
- In the U.S., the Surface Mining Control and Reclamation Act of 1977 requires mining companies to restore land to its original contours to replant vegetation in a process called reclamation.
- In parts of the world, the clearing of forested land results in deforestation, which is the removal of trees from a forested area without adequate replanting.
- Chemicals applied to farm fields to control weeds, insects, and fungi are called pesticides.
- Bioremediation is the use of organisms to clean up or break down toxic wastes.
- This haze is a type of air pollution, called photochemical smog that forms mainly from automobile exhaust in the presence of sunlight.
- Research continues to reveal an extremely thin area over Antarctica, called an ozone hole, which is a seasonal decrease in ozone over Earth's Polar Regions.
- Acid precipitation forms when sulfur dioxide and nitrogen oxides combine with atmospheric moisture to create sulfuric acid and nitric acid.
- Point sources originate from a single point of origin, such as a sewage treatment plant or an industrial site while nonpoint sources generate pollution from widespread areas.
- Leaking chemical storage, barrels, underground gasoline tanks, landfills, road salts, nitrates from fertilizers, sewage from septic systems can seep in to the ground and pollute the drinking water supplies. Once groundwater is contaminated, it will be difficult to remove pollutants.
- Pollution in the oceans, 50% of USA lives near coastlines. Pollutants from such cities often end up in estuaries and other near shore regions.
- Pollution of near shore zones can affect organisms because many depend on estuaries for breeding and raising young.
- Another common ocean pollutant is mercury. Mercury released into the air and water from burning coal and manufacturing is ingested by fish. The fish are then eaten by larger predators and the mercury is passed along the food chain.
- Two major laws have been passed in the U.S. to combat water pollution: the Safe Drinking Water Act and the Clean Water Act.
- The Safe Drinking Water Act ensures that everyone in the U.S. has access to safe drinking water.
- The goal of the Safe Drinking Water Act is to reduce this number to less than 5 percent.
- The 2 main goals of the Clean Water Act are to eliminate discharge of pollutants into rivers, streams, lakes, and wetlands, and to restore water quality to levels that allow recreational uses of waters, including fishing and swimming.
- Humans use water to irrigate crops, for industry, cooking, bathing, and drinking.
- Other factors such as solar variations and volcanic eruptions can also cause global temperatures to change.
- Agriculture, poor forestry practices, and urban development can cause habitat loss, increased erosion, and soil and water pollution.
- CFCs are a major cause of ozone depletion.