# How Change Shapes Our Planet

By Amanda Hackett

Since Earth's existence, systems have interacted to form the planet we know today. Soil and rocks affect the type of run off that enters the hydrosphere and dissolved sediments affect the quality of water. Certain interactions between spheres can have both positive and negative effects. For example, pyrite, when released from undersea vents, provides iron for all living organisms (National Science Foundation). Conversely, pyrite can react with air or water, creating sulfuric acid, which kills fish and dissolves rock (Pacchioli).

Humans gather evidence to monitor changes within Earth's spheres in many ways. Meteorologists monitor atmospheric temperature and weather patterns with satellites. Geologists examine sediment and rock to provide evidence of how mountains were formed and fossils measure the evolution of animals and plants over time. Zoologists tag animals to monitor their behavior and adaptations. Oceanographers monitor sonar, water samples, run off, and the effects of civilizations on bodies of water.

People's lives are affected by changes in Earth's spheres through global warming and depletion of natural resources. Using fossil fuels not only depletes natural resources, but it causes degradation of the ozone layer from excess greenhouse gas emissions in the atmosphere. Global warming is currently melting the Arctic ice caps and increasing air temperatures around the globe, which affects weather patterns and habitat for both humans and animals.

Humans can reduce the impact of these changes to Earth's spheres by conserving natural resources, recycling, and reducing greenhouse gas emissions. Using hydroelectric, wind and solar power reduces humans' dependence on natural resources as well as greenhouse gases in the atmosphere. Recycling steel reduces the amount of ore that is mined. Plastics and non-biodegradable items are recycled to reduce pollution and the need for landfills. Humans can make a difference, but they must act immediately and continuously throughout future generations.

Works Cited

National Science Foundation. "'Fool's Gold' is ocean life's fertilizer: Pyrite nanoparticles from hydrothermal vents are rich source of iron in deep sea." *ScienceDaily*, 10 May 2011. Web. 25 Sep. 2011.

Pacchioli, David. "Sudden Impact." *Research Penn State.*Web. 25 Sept. 2011.