

**ENVIRONMENT AND ECONOMY**

**THE BIG POISON: 2010 BP OIL SPILL**—The laughing gulls on the Louisiana coast are definitely not laughing today about the 2010 BP oil spill. These birds, along with the brown pelicans, dead fish that washed ashore, and sea turtles, are only a fraction of the visible fallen victims to man's latest act. The tragedy continues to unfold like scenes from a Shakespearean play. As of June 9, 2010, over one million gallons of dispersants have been poured into the ocean water of the Gulf. Combine those chemicals with the millions of gallons of unprocessed oils spilling from the ocean floor and we have a formula for disaster.

We are at war, man against animal and man against nature. But keep in mind that nature is not going to stand idly by. We may scrape the surface clean after we plug the bleeding hole, but the poison will continue to seep into our blood for generations to come. We are, after all, chemical beings. We are one. The fish are the plants and microbes they eat, and we are the fish that we eat. Nature may have attacked man through storms like Katrina, but man's attacks on nature are far worse. With a single diamond-tipped drill, we can unleash hell on earth.

Humans have used oil as fuel since ancient times; but the increased usage of this energy source began during the industrial revolution. Along with the other two fossil fuels—coal and natural gas—oil forms the backbone of the industrialized world. Tens of thousands of production facilities around the globe tap oil and gas reserves on land and at sea. Production of oil worldwide is estimated to be roughly four million tons per year. At our current rate of consumption, we have less than half a century before the remaining supplies run out.

Oil is an important fuel, heat source, and raw material for the chemical industry. Before oil can be transformed into usable energy, it must be refined. For example, sulfur must be removed. The resulting oil is then further separated through distillation to produce gasoline, diesel, heating oil, and tar. Tar, as we presently see washing ashore of the Gulf coast, is a dark, oily, viscous material consisting mainly of hydrocarbons. The presence of tar and the increased presence of sulfur in our ocean water, as well as our shores, is having, and will continue to have, a large environmental impact.

The elemental sulfur is non-toxic, but sulfur dioxide, carbon disulfide, hydrogen sulfide, and carbon disulfide are extremely toxic. Sulfur dioxide, for example, reacts with atmospheric water and oxygen to produce sulfuric acid. Sulfuric acid, a component of acid rain, lowers the pH of soil and freshwater bodies. Sulfuric acid may harm the lungs, eyes, and other soft tissues. In organisms without lungs, such as insects or plants, this acid prevents respiration. At present, there are no quantitative measures to tell us how much of these and other harmful chemicals will arise from the chemicals that we poured into the water to control the byproducts of the oil spill. But one thing that we know for sure: the legacy of man's last major toxic accident—the 1989 Exxon Valdez spill—still coat the Alaskan shoreline. This time, the danger is much closer to home.

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