

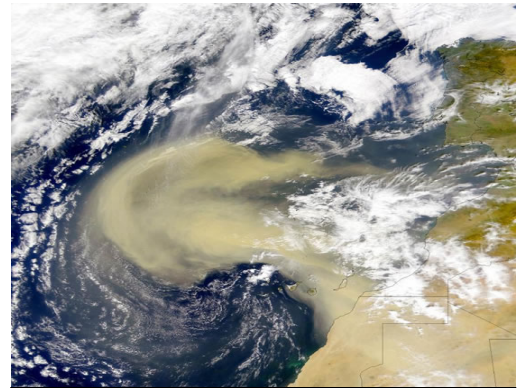
EHC-D Newsletter

August 2008

Sneeze felt around the world...

For centuries, Man has known of the phenomena called 'harmattan'. In the Sahara Desert, hot air mixes with cooler, dryer Sirroco winds from the Sahel region of Africa to produce dust storms in which particles are churned upward into the prevailing Trade Winds. Gigantic, globe traversing dust plumes are formed known as Sahara Dust. Sahara Dust is not a new occurrence, in fact desert dust has been mixing with the Trade Winds for ages. While off the Verde Islands in 1832, Charles Darwin notes "generally the atmosphere is hazy and this is caused by the falling of impalpably fine dust..." These colossal dust plumes can travel thousands of miles around the earth. In the springtime, winds blow Sahara Dust toward Western Europe reaching as far north as the Scandinavian countries. In the summer months, the Trade Winds track more westerly bringing dust plumes to the Southeastern United States, Central America and across the Caribbean. Wintertime brings the winds more southerly carrying Sahara Dust across the Atlantic Ocean to South America and the Amazon Basin. Scientists estimate that the mineral laden quartz particles carried in the Sahara Dust have for centuries replenished more than half of the annual nutrient needs of the abundant, lush vegetation of the Amazon Rainforest. Amazonian soil naturally becomes mineral depleted due to water saturation from the region's heavy, tropical rains.

However, in the last half century, detrimental changes in the quantity and composition of Sahara Dust has made it a topic of global concern. Andrew Goudie, professor of geography at Oxford University, has been studying Sahara Dust since the 1970s. Professor Goudie believes that the detrimental changes observed in Sahara Dust are born out of the destruction of the thin crust of lichen and stone which has always been a protective 'skin' over the desert surface. Beginning with the use of four wheel drive vehicles in the African desert in WWII, the world has seen a tenfold increase in Sahara Dust being released into the atmosphere. Regional overgrazing, excessive plowing, deforestation and drought have also contributed to the estimated 2-3 billion tons of Sahara Dust that is swept annually to Europe and the Americas.



NASA image of Sahara Dust blowing off the African continent.

The dust itself contains particles of quartz smaller than a grain of sand usually containing minerals and carrying microbes; but modernization in the Sahara region has added pesticides, herbicides, fungicides, heavy metals, radioactive particles, toxic black mold and even diseases, such as Foot and Mouth Disease, to the make-up of Sahara Dust. The increasingly dense plumes of Sahara Dust are thought to be reflecting solar heat back into the upper atmosphere contributing to global warming and may even be a factor in the decline of the coral reefs and to the prevalence of toxic red tides. "Blood rains" are experienced in Britain as springtime rains wash blood-colored African dust out of the atmosphere and pilots have observed a reddish/yellow film on the snow of the Alps. Even the Caribbean island of Puerto Rico, despite its constant flow of ocean breeze, is now issuing summer-time pollution alerts. Sahara Dust is thought to be responsible for the increasing number of cases of asthma and allergies throughout the regions to which it travels.

Once just a noteworthy phenomena amusing sailors, scientists and Darwin himself, Sahara Dust is fast becoming an everyday global concern for its increasingly caustic impact on human and environmental health.