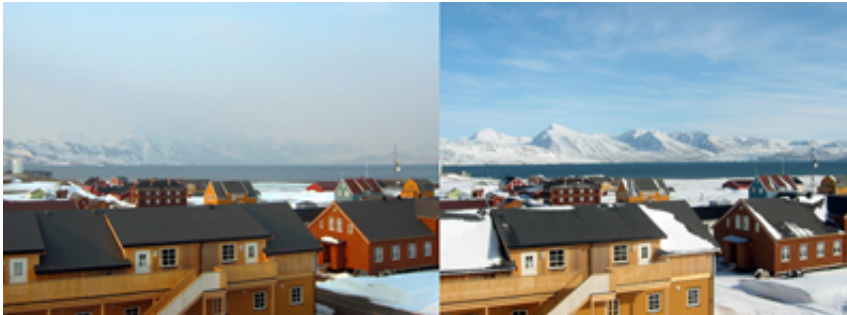


Record air pollution above the Arctic

May 11 2006



Arctic haze above Svalbard. On the left (May 2nd, 2006), orange brown dust is clearly visible. On the right (May, 8.), the dust has disappeared. Photo: Juergen Graeser, Alfred-Wegener-Institut.

Last week Scientists of the Alfred Wegener Institute for Polar and Marine Research observed the highest air pollution on record since measurements began in Ny-Ålesund on Svalbard. Monitoring instruments displayed significantly increased aerosol concentrations compared to those generally found. Aerosols from eastern Europe have been transported into the Arctic atmosphere due to a particular large-scale weather situation.

Usually the air is pure and clear above the French-German AWIPEV-Research base in Ny-Ålesund at the western coast of Svalbard. However, at the beginning of May it turned to a deep orange-brown. Confirming the observations of the German team, Swedish scientists of the Department of Applied Environmental Science at Stockholm University

(ITM) measured up to fifty micrograms aerosol per cubic metre air in Ny-Ålesund. Such values are usually measured during rush hour in cities. In addition, the Norwegian Institute for Air Research (NILU) found extremely high concentrations of ozone above ground. With more than 160 micrograms ozone per cubic metre, these values are the highest measured since the foundation of the research base in 1989.

A specific weather condition has caused the record high air pollution. Large amounts of aerosols from eastern Europe were driven into the arctic atmosphere. Increased aerosol concentrations had already been measured at springtime of recent years. However, this "Arctic Haze" has never been as pronounced before.

Aerosols constitute small particles in the atmosphere. They can be liquid or solid and serve as condensation nuclei during cloud formation. It is these properties that lead to aerosols influencing the climate system. "The present air pollution is more than 2.5 fold higher than values measured in spring 2000. As a consequence, we expect significantly increase warming ", explains Dr. Andreas Herber of the Alfred Wegener Institute in Bremerhaven.

Scientists of the Alfred Wegener Institute have been measuring the aerosol content of the atmosphere above Svalbard since 1991. Measurements made via the institute's aeroplanes serve the ongoing investigation of the impact of aerosols on the climate. "It is still difficult to estimate, whether this year's data constitute the beginning of a common trend", says Andreas Herber. "We need continued measurements in the course of subsequent years". Moreover, the scientists expect the detailed examination of the origin and chemical composition of the aerosols to yield further understanding for the current observations.

The AWIPEV research base in Ny-Ålesund is a joint station of the

German Alfred Wegener Institute and the French Institut Polaire Paul Emile Victor (IPEV). It comprises the German Koldewey and the French Rabot research stations.

Source: Alfred Wegener Institut fuer Polar und Meeresforschung

Citation: Record air pollution above the Arctic (2006, May 11) retrieved 25 April 2024 from <https://phys.org/news/2006-05-air-pollution-arctic.html>

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