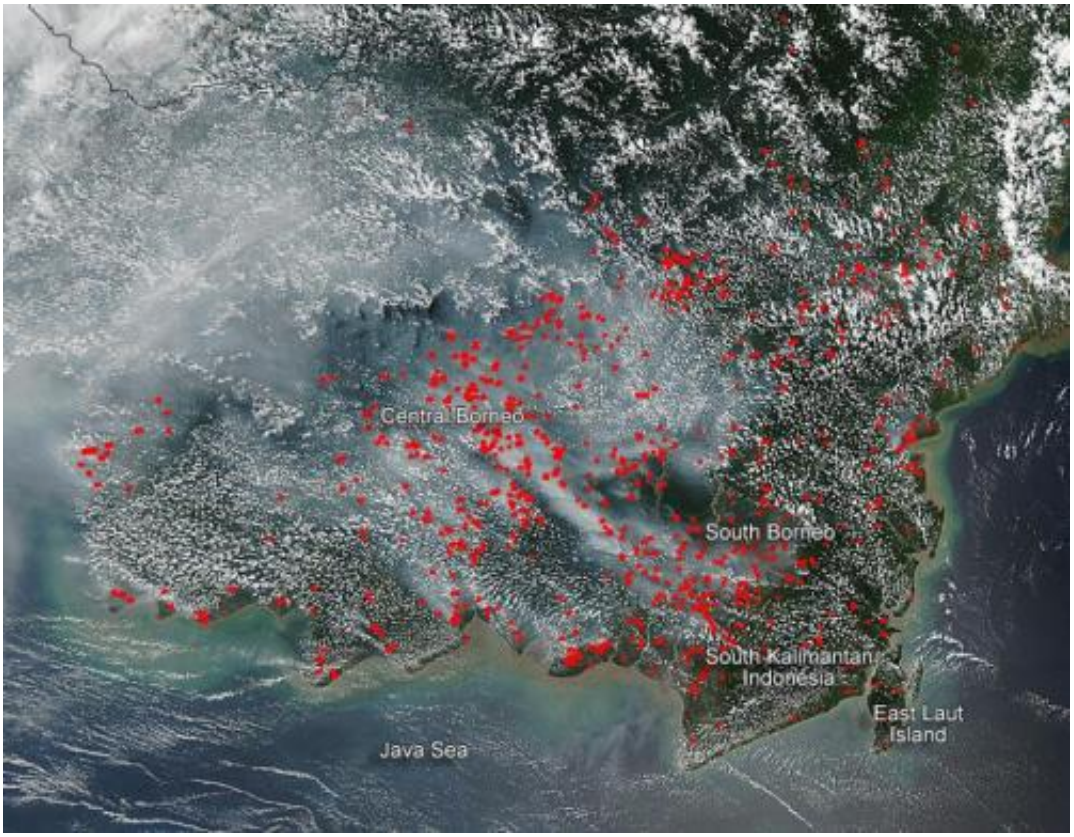
Agricultural fires blaze in Borneo

September 26 2014



The skies over Indonesian Borneo were filled with the smoke from hundreds of fires set deliberately to clear farmland. A shroud of thick, gray smoke hung over the area when the Aqua satellite captured this image on Sept. 25, 2014. The Moderate Resolution Imaging Spectroradiometer (MODIS) instrument aboard the Aqua satellite detected dozens of fires (locations outlined in red) across the entire region from Central Borneo to South Borneo and even on East Laut Island. Credit: Jeff Schmaltz, MODIS Rapid Response Team.

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Widespread burning in lowland forests on Borneo is an annual, manmade occurrence. People use fires to manage and create agricultural lands, including large palm tree plantations that supply palm oil for biodiesel fuel; others are set accidentally during activities like logging. Lowland tropical forests are underlain by a swampy layer of peat that can be up to 20 meters (66 feet) thick. During the rainy season, when the peat is waterlogged, leaves and other organic matter in the soil don't decay; when the peat dries out, it becomes flammable. Burning peat generates huge amounts of smoke as evidenced in this satellite image.

These fires can contribute significantly to annual greenhouse gas emissions. In addition, the smoke released by any type of fire (forest, brush, crop, structure, tires, waste or wood burning) is a mixture of particles and chemicals produced by incomplete burning of carbon-containing materials. All smoke contains carbon monoxide, carbon dioxide and particulate matter (PM or soot). Smoke can contain many different chemicals, including aldehydes, acid gases, sulfur dioxide, nitrogen oxides, polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, styrene, metals and dioxins. Exposure to smoke should be limited as it can cause severe respiratory ailments.

Provided by NASA's Goddard Space Flight Center