The Economist commissioned a study of particulate pollution in China, using estimates based on satellite data. The results are predictably grim:

> World Health Organisation guidelines suggest that PM2.5 levels above ten micrograms per cubic metre are unsafe. The boffins have found (as the map shows) that almost every Chinese province has levels above that. Indeed, much of the country's population endures air so foul that it registers above 30 on the PM2.5 scale, with Shandong and Henan provinces topping 50. Because these readings reflect the average pollution that a typical resident in a province is likely to endure during a given year, they underplay the sharp spikes in pollution that are seen on particularly dirty days, when spot readings go much higher. That is why Beijingers should take little comfort from the fact that the capital's pollution measures only 35.

For comparison purposes, the U.S. standard for average annual emissions 15, and the U.S. standard for 24 hour spikes is 35 µg/mg3. Thus, much of the Chinese population experiences average daily pollution over twice what the U.S. allows, and at or above a level that the U.S. considers acceptable only for exceptional brief spikes. The spikes in China are presumably much worse.

PM 2.5 has serious health effects, including "increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, for example; decreased lung function; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease."

Here is the map: