EPA
www.epa.gov/research
science in ACTION
INNOVATIVE RESEARCH FOR A SUSTAINABLE FUTURE

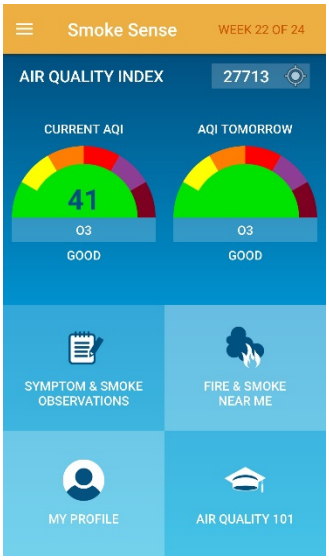
SMOKE SENSE STUDY SUPPORTED BY CITIZEN SCIENTISTS

Citizen Scientists Investigate Effective Health Risk Communication of Wildland Fire Smoke

Overview

Wildland fires produce air pollution that adversely impacts people's health. Exposure to wildland fire smoke increases visits to emergency rooms and clinics for problems related to asthma and other respiratory and cardiovascular diseases. As the incidence and intensity of large wildland fires increase in the United States, more people will be exposed to unsafe levels of particulate matter (PM) and other pollutants from smoke. This public health problem brings forward the need for new and innovative scientific approaches to communicate health risks of exposure to wildland fire smoke to at-risk populations and communities.

Current air pollution health risk communication strategies have solid footing in science and are widely used across communities to protect public health. These strategies include: outreach by EPA on air quality and the Air Quality Index, public health advisories, and educational campaigns. However, it is not known whether these strategies are equally effective in protecting public health during wildland fire smoke episodes. Exposure to wildland fire smoke can be sudden and unexpected, last hours to weeks, and affect communities that may or may not have a public health response plan to reduce the adverse impacts of smoke exposure. EPA is continuing to advance the science and technology required



to understand the impacts of smoke on air quality and public health. Combining science with communication tools can improve delivery and timing of information to inform decision making and health protective behaviors.

Study Using Smoke Sense App

EPA researchers are conducting a citizen science study called Smoke Sense to: 1) determine the extent to which exposure to wildland fire smoke affects health and productivity, and 2) develop health risk communication strategies that protect public health during smoke days. Individuals who want to contribute to science can participate in the study by using the Smoke Sense app, a publicly available mobile application. Citizen scientists will be able to use the app to learn about wildland fires and smoke health risks in their area. They will then be prompted to report their health symptoms during wildland fires, their knowledge about health risks, and the range of actions they are able or willing to take to improve their health condition or lower their exposure. Users will earn badges each week they participate.

The study is the first of its kind known to use a mobile application to evaluate health effects from wildland fires experienced by the people who participate, and to test whether such an app communicates health risks effectively. If successful, data gathered through Smoke Sense will help EPA researchers and communities determine how smoke impacts our health and productivity and gain important insights needed to develop health risk communication methods during smoke days.

The study will occur during the 2017 fire season. At the end of the study, the Smoke Sense app will go offline temporarily for updates.

The Smoke Sense app can be used on Android phones and will be available for use on Apple devices in the future. Smoke Sense app user identities will be anonymous and non-identifiable.
To download the app, go to www.epa.gov/air-research/smoke-sense.

Contact
SmokeSense@epa.gov