Air & Water Monitoring – EPA Resources

Air Sensor Toolbox
Air sensor monitors that are lower in cost, portable and generally easier to operate than regulatory-grade monitors are widely used in the U.S. to understand air quality conditions. This website provides the latest science on the performance, operation and use of air sensor monitoring systems for technology developers, air quality managers, citizen scientists and the public. Access the Air Sensor Toolbox.

Air Sensor Loan Programs
EPA has established air sensor loan programs through various collaborations with community groups, schools, libraries, tribes, and others to enable the public to learn about air quality in their communities. These programs bring new air sensor technology advances to the public for educational purposes. Learn more about the Air Sensor Loan Program.

Educational Resources Related to Air Sensor Technology
Air sensor technologies provide many opportunities for educational enrichment on the sensors themselves as well as air quality, human health, the environment, and other related topics. Educational activities and curriculum developed by EPA and with collaborators are available for use by the public. These resources are ideal for use in the classroom, community workshops, or other educational settings. Learn more about EPA's educational resources related to air sensor technology.

Air Sensor Performance Targets & Testing Protocols for $PM_{2.5}$ & Ozone
Lack of consistent testing protocols to evaluate the performance of air sensors makes it difficult to understand how air sensor data compares to that of regulatory air monitors. EPA has published reports to provide a consistent set of testing protocols, metrics, and target values to evaluate the performance of air sensors. Learn more and read the reports.

There is also an upcoming EPA Tools & Resources Webinar on this subject on Wednesday, March 24. Register for the Air Sensor Performance Targets Webinar.

EPA's U.S.-Wide Correction Equation to Improve Accuracy of $PM_{2.5}$ Air Sensors
EPA developed a series of quality control checks and a U.S.-wide correction equation to make the data from air sensors more comparable to data from regulatory-grade monitors before incorporating it onto the Fire and Smoke Map. This makes it easier for users to compare sensor data and permanent and temporary monitor data side by side. Learn more about the technical approaches for the sensor data on the AirNow Fire and Smoke Map.

Smoke Sense Study – A Citizen Science Project Using a Mobile App
The Smoke Sense app is designed to pilot a citizen science study about the impacts of wildfire smoke exposure on health. Citizen scientists can use the app to learn about wildland fires and smoke health risks in their area. They can report their health symptoms, and the range of actions they are able or willing to take to improve their health condition or lower their exposure. Learn more and access the Smoke Sense app.

Village Blue

EPA and the U.S. Geological Survey initiated the Village Blue project to increase public awareness about local water quality in the Baltimore Harbor and the Chesapeake Bay. Village Blue sensors provide real-time water quality monitoring data. A new Village Blue site is currently under development in New Orleans to help communities better understand Lake Pontchartrain's water quality and its connection to the Mississippi River. Learn more about the Village Blue projects.

Cyanobacteria Assessment Network Mobile Application (CyAN app)

The CyAN app provides an easy to use, customizable interface to scan fresh and coastal U.S. water bodies for changes in cyanobacteria occurrence. The app can be used to quickly inform decisions regarding recreational and drinking water safety. It's free and available for download on Google Play™ – it is currently being designed as a web app that will be available on most devices. Learn more and access the CyAN app.