Become a Volunteer with GLOBE Observer

Collect Data to Support Earth System Science

The GLOBE Program welcomes individual volunteers of all ages to participate in GLOBE by collecting environmental data in support of Earth System Science through the GLOBE Observer app. Volunteer observations:

► Help monitor the conditions of clouds, water (especially as a habitat for mosquitoes), plants (trees and other land cover), and see change over time.

► Can be used to help interpret NASA and other satellite data.

► Are available for anyone to view and explore, including fellow volunteers and professional and student researchers.

To participate as a volunteer, download the free GLOBE Observer app from Google Play or the Apple App Store, register with an active email address, and take the in-app training. No prior experience or additional equipment is required. Anyone in a GLOBE country with a compatible mobile device can use GLOBE Observer. You can participate as an individual, at a GLOBE school, as GLOBE alumni, with your family, at an afterschool club or summer camp, at the local library, and more! You can even form a virtual GLOBE team to combine your observations with others, near or far. By sharing observations through the GLOBE Observer app, volunteers become part of the international GLOBE network of volunteers citizen scientists, students, teachers, and scientists while learning more about our shared environment.

Getting Started with GLOBE Observer

The GLOBE Observer app contains four protocols: Clouds, Mosquito Habitat Mapper, Land Cover, and Trees.

During eclipses, a fifth Eclipse protocol is added to extend cloud observations. Each protocol provides step-by-step directions for data collection

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GLOBE Clouds Protocol

With GLOBE Clouds, volunteers provide their location and report on overall cloud cover and surface conditions that can impact satellite observations. Optionally, volunteers can also identify cloud types using the in-app key, cloud opacity, sky conditions and visibility, and then take photos of the sky. Clouds are a major component of the Earth's system that reflect, absorb, and scatter sunlight and infrared emissions from Earth. This affects how energy passes through the atmosphere. Different types of clouds have different effects, and the amount of cloud cover is also important. Clouds can change rapidly, so frequent observations are useful to track these changes. Such observations are able to see change over time and help with interpretation of satellite cloud data.

GLOBE Mosquito Habitat Mapper Protocol

GLOBE Mosquito Habitat Mapper helps volunteers document mosquito habitats and identify mosquito types. Volunteers photograph possible mosquito breeding habitats (standing water or somewhere water could collect), and report if there are mosquito larvae in the water. Optionally, volunteers can sample and count the larvae and try to identify the mosquito type using the in-app key, both of which will require additional equipment. If possible, volunteers eliminate the mosquito breeding habitat. Mosquitoes are a serious health risk: millions of people die each year from mosquito-borne disease. While climate and weather conditions can suggest to scientists where to expect spikes in mosquito populations during the year, observations on the ground help confirm mosquito distributions. By reporting possible mosquito habitats through the app, GLOBE Observers are able to augment broad scale satellite and model-based research with highly targeted local ground-based observations.

GLOBE Land Cover Protocol

Using GLOBE Land Cover, volunteers report on current surface conditions, then take photographs in all four cardinal directions, up and down. Optionally, volunteers can classify the land cover in the photographs, for example, indicating if the area is grassland, a forest or an urban area, as well as compare their classification to a satellite-based land cover map and note any differences. Land cover, or what is on the land, is a base measurement for many areas of critical science, including hazard analysis for floods, fires and landslides, mapping wildlife habitat, and tracking the impacts of climate change. Because land cover can influence the atmosphere (clouds), mosquito habitats, and defines the broader ecosystem for trees, it is helpful if a land cover observation is taken alongside observations of mosquito habitats, trees, or clouds.

GLOBE Trees Protocol

GLOBE Trees helps volunteers estimate tree height. Volunteers select a tree and then use their device's camera to record the angles to the bottom and the top of the tree. The volunteer then walks to the tree counting their steps to estimate distance to the tree. The app will use that information to calculate an estimate of the tree's height. Optional steps are taking a photograph of the tree and measuring the circumference of the tree. Tree height is the most widely used indicator of an ecosystem's ability to grow trees. Observing tree height allows scientists to understand the gain or loss of biomass which can inform calculations of the carbon that trees and forests either take in from or release into the atmosphere.

GLOBE Observer Data

All data submitted through GLOBE Observer enter the GLOBE database. Everyone can access data in the GLOBE data and information system by visiting www.globe.gov. The data support student and scientific research or may be used for community science. Publications by scientists using the data and student research reports can be found at www.globe.gov. Individual volunteers and educators using the GLOBE Observer app can find additional information about taking observations, science, videos, books, activities, and more at observer.globe.gov.

Everyone can access GLOBE data in the GLOBE Data and Information System by visiting www.globe.gov. If you have questions about how to become a GLOBE educator, simply contact the GLOBE Community Support Team at globehelp@ucar.edu.