



## Connect your GLOBE Data with NASA Satellite Missions

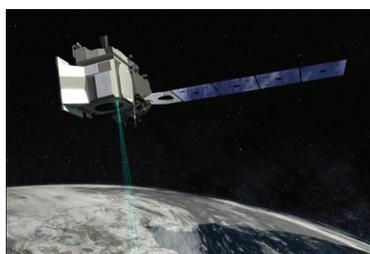
### Help Monitor Earth's Environment

Monitoring Earth's environment is one of the primary activities of The GLOBE Program. Students from all over the world have been involved in hands-on in situ data collection since 1995. Researchers use ground measurement data, like GLOBE collected data, alongside remotely sensed satellite data, to validate and calibrate satellite instruments. NASA satellite missions like the Global Precipitation Measurement (GPM) mission, Ice Cloud and Land Elevation Satellite-2 (ICESat2) Mission, and the Soil Moisture Active Passive (SMAP) mission collect worldwide environmental data that aligns with data collected via GLOBE protocols. This is just a subset of NASA missions that align with the GLOBE. For more information, visit the Collaborating Satellite Missions webpage on [GLOBE.gov](https://GLOBE.gov).



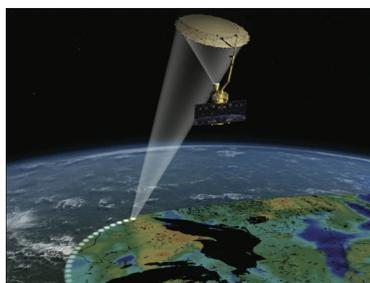
### Global Precipitation Measurement (GPM) Mission

**The GPM mission** uses a Microwave Imager to provide data on precipitation, ranging from light to heavy rain to falling snow, and two radar frequencies that view precipitation in 3D throughout an atmospheric column. This allows researchers to see the size of precipitation and how they are distributed from the clouds to the ground. GLOBE users who collect precipitation data via GLOBE Atmosphere protocols may choose to compare GPM data to their GLOBE data to explore questions about local and global climate changes.



### Ice, Cloud and Elevation Satellite-2 (ICESat-2) Mission

**The ICESat-2 mission** allows researchers to measure the shifting heights of ice sheets, sea ice, trees, bodies of water and mountains. The satellite also measures Earth's temperate and tropical regions, documenting the vegetation height in forests worldwide. GLOBE users who collect tree height data via GLOBE Biosphere protocols may compare their data with ICESat-2 measurements to better understand vegetation changes over time.



### Soil Moisture Active Passive (SMAP) Mission

**The SMAP mission** provides high-resolution global mapping of soil moisture and the freeze/thaw state of soil. SMAP observations aid in the accuracy of models used in weather prediction and climate projections, flood assessment and drought monitoring, and in identifying unknown values in global carbon calculations. GLOBE users who collect soil data via the GLOBE Pedosphere protocols may explore gravimetric soil moisture and characteristic data that supplement observations made by the SMAP mission.

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