

National Aeronautics and
Space Administration



EXPLORE SCIENCE

Two Years of the Trees Around the GLOBE Student Research Campaign: 2018 - 2020
Brian A. Campbell, NASA Earth Science Education Collaborative (NESEC)/GSFC WFF
31 August 2020

Two Years* of the Trees Around the GLOBE Student Research Campaign: 2018 - 2020

The Trees Around the GLOBE Student Research Campaign commenced on September 15, 2018, in conjunction with NASA's Ice, Cloud, and land Elevation Satellite-2 or ICESat-2 satellite launch on the same date at 6:02am PDT.

The campaign brings together student research, online tools (Open Altimetry, Collect Earth, Google Earth Engine, NASA WorldView) and datasets for data analysis, comparisons to satellite data, and the development of student research projects. Even though this campaign is focused on tree height, it also focuses on how land cover, greenings, and carbon cycle measurements complement and align to tree height observations.

Why Tree Height?

Tree height is not just a measurement - it is a gateway to understanding many things about the environment and is the main indicator of how well an ecosystem can grow trees. The structure of tree canopies, the 3D arrangement of individual trees, has a huge effect on how ecosystems function and cycle through carbon, water, and nutrients. Tree height plays a vital role in land cover, greenings, and the carbon cycle.

Metrics – since 15 Sept 2018

20,297 Tree Height Measurements from 9,859 sites
 15,391 Land Cover Measurements from 10,747 sites
 11,801 Greenings Measurements from 488 sites



NASA GLOBE Observer Trees Tool



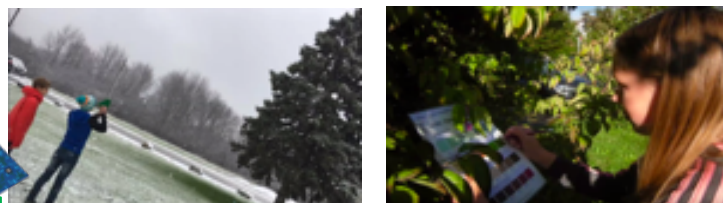
On March 26, 2019, NASA and the GLOBE Program released the NASA GLOBE Observer Trees Tool. This tool allows citizen scientists and campaign participants to observe and measure the height of trees using just their mobile device. Students can compare the Trees Tool tree height data with their hand-held clinometer tree height data and tree height data from ICESat-2

Trees Around the GLOBE Student Research Campaign Team

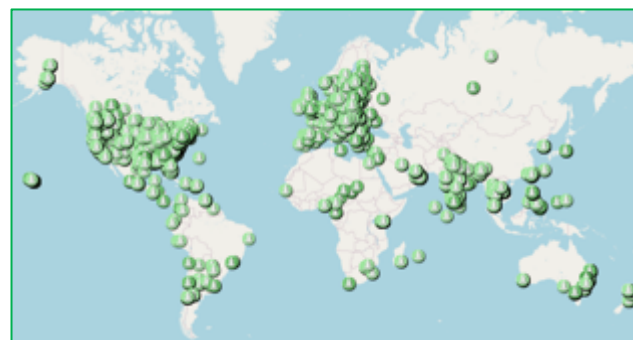


Peder Nelson (OSU), Dorian Jqnnney (NASA GSFC), Peter Falcon (NASA JPL), Christopher Shuman (NASA GSFC), and Brian Campbell (Lead, NASA WFF)

Students in the Field

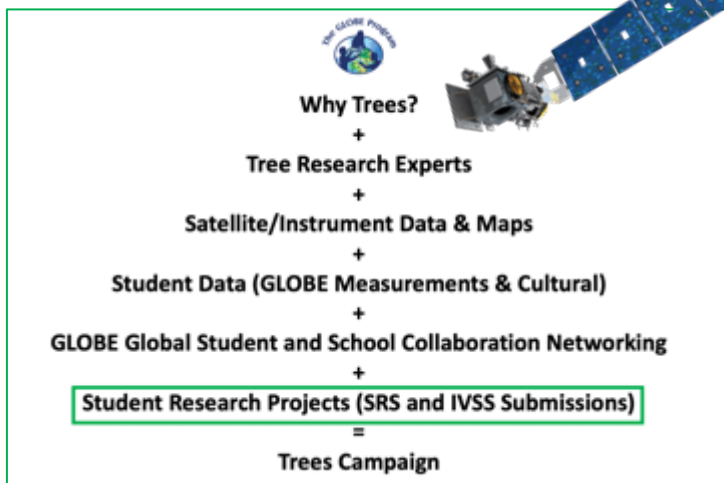


(Left) Middle school students in Michigan, USA taking tree height measurements and (right) high school student in Switzerland taking greening observations for the campaign. These students have also presented their research during live campaign webinars.



Locations of GLOBE Tree Height Measurements since 15 Sept 2020

*Note: Year 3 of the campaign commenced on 1 September 2020



Trees Around the GLOBE Student Research Campaign Structure for Years 1 and 2