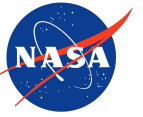




National Aeronautics and
Space Administration



GLOBE

Global Learning & Observations to Benefit the Environment

<https://globe.gov> and <https://observer.globe.gov>

 @NASAGO

GLOBE Data Fundamentals: Training 1

October 31, 2019

Questions? help@globe.gov



THE GLOBE PROGRAM

Training Mission Statement

To increase the use of GLOBE data by scientists for research. This is accomplished through online training that teaches participants how to access, visualize, and analyze GLOBE data.

Welcome to Training 1



Prerequisites

There are no prerequisites.

This training assumes no prior knowledge of GLOBE.

Learning objectives

Training 1 will answers the following:

What is GLOBE?

What data are available?

How do I get the data?

Outline

1. Introduction to GLOBE
2. Data Collection
3. Data Access
4. Data Documentation
5. Summary

1. Introduction to GLOBE



GLOBE Program

Global Learning & Observations to Benefit the Environment (GLOBE)



GLOBE by numbers

Since 1995

121 countries

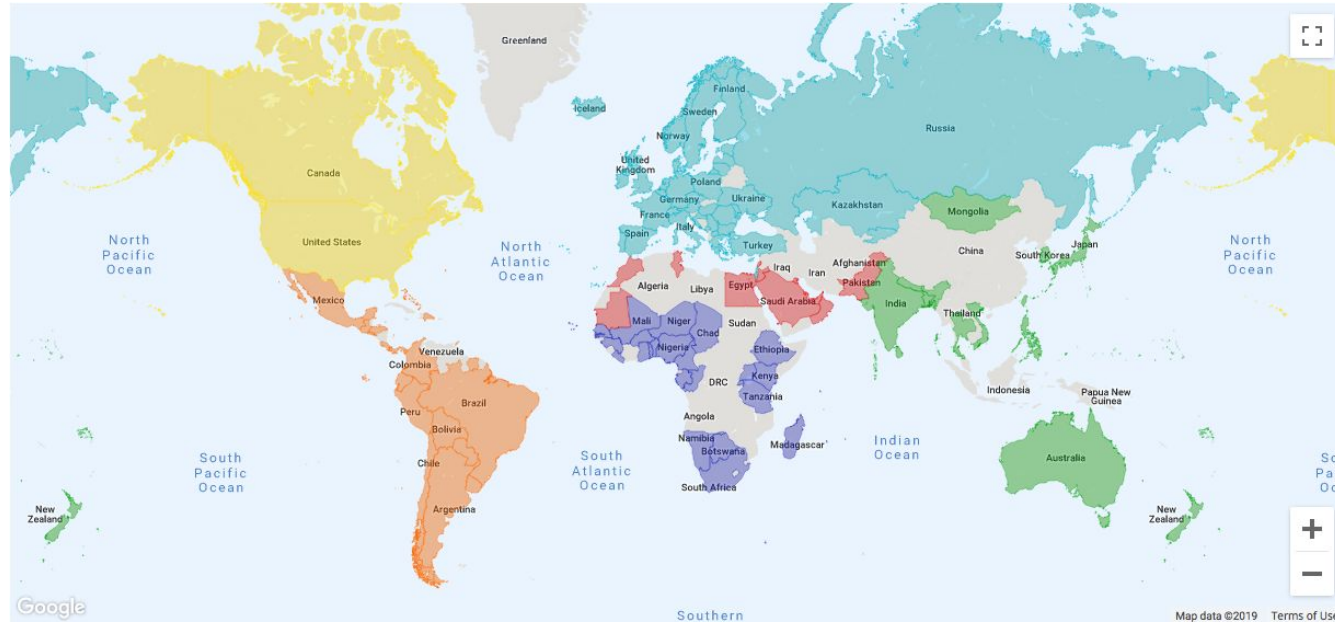
34,000 schools

142,000 citizen scientists



23rd GLOBE Annual Meeting, Detroit, Michigan, USA, July 2019

GLOBE countries



<https://www.globe.gov/globe-community/community-map>

2. Data Collection



Who is collecting data?

Teachers & Students



Citizen Scientists



GLOBE protocols for data collection

Water

Alkalinity
Conductivity
Dissolved Oxygen
Macroinvertebrates
☑ Mosquitoes
Nitrate
pH
Salinity
Temperature
Turbidity



Biosphere

Biometry
☑ Tree Height
Carbon Cycle
Green Up
Green Down
☑ Land Cover
Lilac Phenology
Pheno. Gardens



Soil

Bulk Density
Particle Size Dist.
pH
Soil Characterization
Soil Fertility
Soil Moisture
Temperature



Air

Aerosols
☑ Clouds
Pressure
Precipitation
Relative Humidity
Surf. Temperature
Temperature
Water Vapor



<https://www.globe.gov/en/do-globe/globe-spheres>

How are data collected?

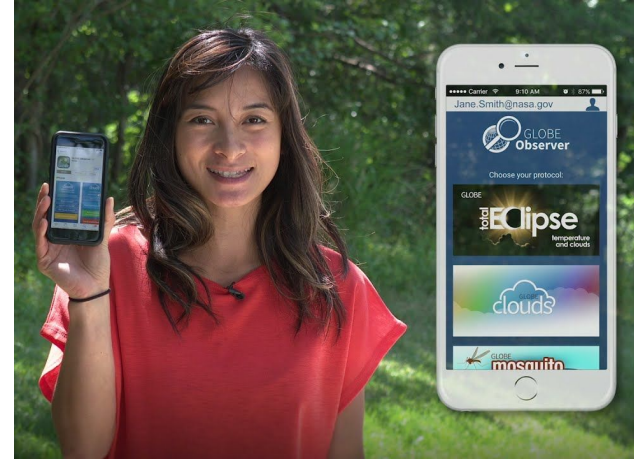
Automated
Weather Station



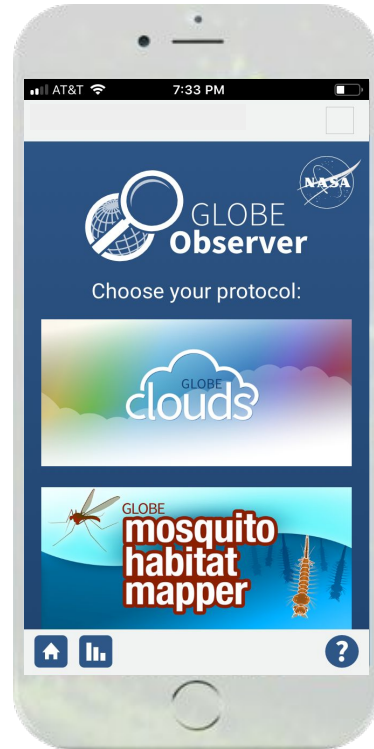
Manual



Mobile app



GLOBE Observer app



Training

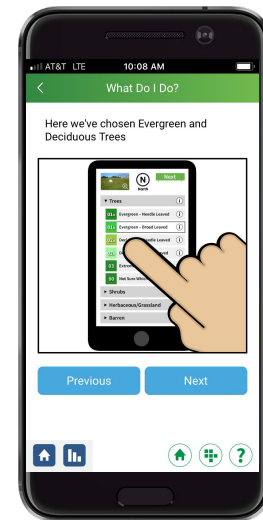
In-Person



Online

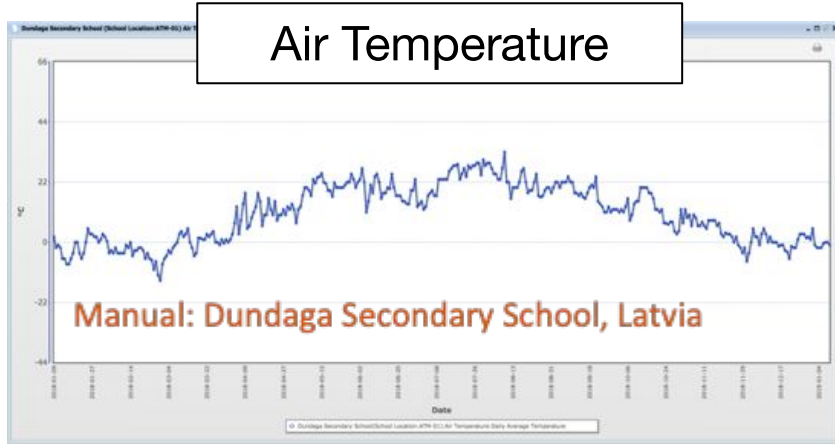


In the app

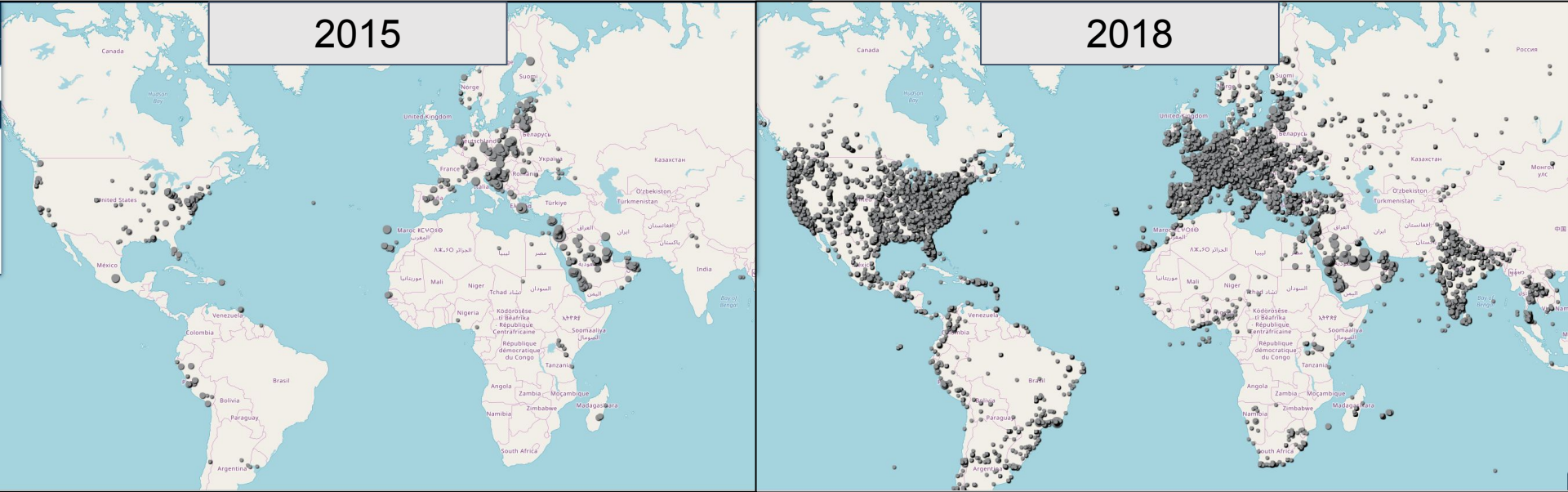


<https://www.globe.gov/get-trained>

What kinds of data are collected?



Impact of mobile app on data coverage



3. Data Access



Accessing GLOBE data

GLOBE data are all made freely available to everyone: globe.gov/globe-data

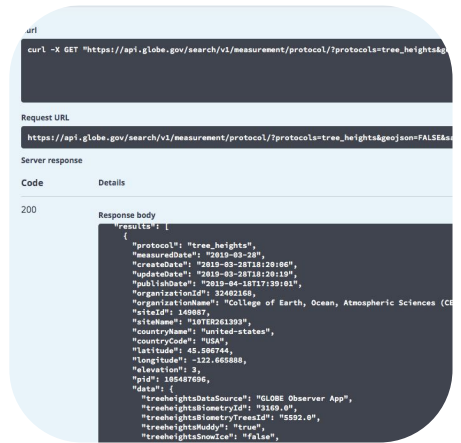
Map It



Spreadsheet

Observer	GLOBE	Is Observer	Site ID	Observed	Observed	Observed	Measurement	Sky Color	Sky Visibility	Total
564061	0	1	112729	48.840559	2.318568	58.4	3/21/18	16.04	obsc.	
566126	0	1	113573	52.322417	21.09668	81.8	3/22/18	16.22	obsc.	
590244	1	1	121150	50.522862	21.861479	151	4/5/18	12.11	obsc.	
591449	1	1	121467	50.562485	21.689002	137	4/6/18	8.51	obsc.	
592883	0	1	121825	31.013026	76.963087	902	4/7/18	8.10	obsc.	
595036	0	1	120847	26.897947	75.177332	366.9	3/27/18	13.21	obsc.	
567284	0	1	113899	39.889464	32.847948	1024.3	3/23/18	4.17	obsc.	
576547	0	1	117443	37.246918	32.075363	60.7	3/28/18	1.95	obsc.	
588642	0	1	120726	22.693209	14.648848	154.4	4/4/18	13.47	obsc.	
188457	1	0	34963	17.09	42.37	169	4/4/18	14.10	obsc.	
590357	1	0	34963	17.09	42.37	169	4/5/18	14.00	obsc.	
600992	1	0	13901	24.672451	46.702981	611	4/6/18	9.00	obsc.	
596215	1	1	36212	34.158084	118.06858	250.5	4/9/18	5.43	obsc.	
600461	1	0	13903	24.672451	46.702981	611	4/10/18	9.00	clear	
583634	1	0	105675	24.588454	39.576727	8.7	3/31/18	12.30	obsc.	
587832	1	1	120583	50.597564	21.688101	142.4	3/31/18	16.46	obsc.	
587900	1	1	120554	50.561717	21.5664	165	4/2/18	12.32	obsc.	
547675	0	1	107132	8.895564	76.744264	48.1	3/15/18	3.15	obsc.	
548016	0	1	107252	12.906846	80.346484	27	3/15/18	11.46	obsc.	
548154	0	1	107322	9.890287	79.909007	-3.2	3/15/18	14.13	obsc.	
548358	0	1	107409	28.410374	77.344773	202.1	3/15/18	18.09	obsc.	
548899	0	1	107546	26.672588	88.457179	110.8	3/16/18	2.95	obsc.	
548951	0	1	107547	26.672588	88.465174	309.7	3/16/18	2.17	obsc.	
548903	0	1	107550	26.670875	88.441114	110.2	3/16/18	2.39	obsc.	
549140	1	0	35089	25.240089	45.257046	737	3/17/18	8.00	obsc.	
550209	1	0	11866	26.3331	50.1483	44	3/17/18	8.00	obsc.	
592533	1	0	12494	26.3313	50.1553	57	3/17/18	8.00	obsc.	
550863	0	1	106262	29.204111	48.002554	2.9	3/17/18	10.39	obsc.	
552119	1	0	11866	26.3331	50.1483	44	3/18/18	8.00	obsc.	
592537	1	0	12494	26.3313	50.1553	57	3/18/18	9.00	light blue	
7965	1	0	12521	24.493356	39.606942	604.7	3/18/18	9.00	obsc.	

API



4. Data Documentation



Citation

Global Learning and Observations to Benefit the Environment (GLOBE) Program,
Date Data was Accessed, <https://www.globe.gov/globe-data>

User Guide

The purpose of the GLOBE Data User Guide is to help scientists and researchers understand, access, and use available GLOBE data.

PDF available at globe.gov/globe-data/globe-data-user-guide

Reporting issues in the data

Users are encouraged to report errors or inconsistencies they discover in GLOBE data. Please report issues to help@globe.gov and include the following information in your email:

- Your name
- Your organization
- Your contact information
- Brief description of how you are using GLOBE data
- Date (approximate) issue was discovered
- Description of the issue

5. Summary



Summary

GLOBE is a worldwide community of students, teachers, scientists, and citizen scientists

GLOBE data are all made freely available to everyone

Data are available at globe.gov/globe-data

Download the GLOBE Observer app at observer.globe.gov

Stay connected with GLOBE

Join our listserv for scientists and researchers using GLOBE data

<https://lists.nasa.gov/mailman/listinfo/go-sci>

 [@GLOBEProgram](https://twitter.com/GLOBEProgram) and [@NASAGO](https://twitter.com/NASAGO)

 [@TheGLOBEProgram](https://www.facebook.com/TheGLOBEProgram) and [@nasa.globeobserver](https://www.facebook.com/nasa.globeobserver)