

# Using the GLOBE Visualization System



THE GLOBE PROGRAM

A Worldwide Science and Education Program

SEARCH SIGN IN ENGLISH

- About
- Join
- Get Trained
- Do GLOBE
- GLOBE Data
- Community
- News & Events
- Support



### Registration for the 2018 GLE/22nd Annual Meeting is Now Open!

The GLOBE Implementation Office is excited to announce that registration for the 2018 GLOBE Learning Expedition (GLE) and the 22nd Annual Meeting in Ireland is now open! Takes place 1 - 6 July 2018!

[More >](#)

See GLOBE in your Country or Region:

United States of America

Go

## RECENT MEASUREMENTS

[Haines School, United States, Clouds, Measured on: 2018-03-01](#) [Haines School, United States, Multi](#)

Enter Data

Visualize Data

Recent Measurements: Last 7 Days

Hold the mouse over the **GLOBE Data** menu, then click on **Visualize Data**. Or, use the quick link shown below.

The screenshot shows the homepage of THE GLOBE PROGRAM. The header includes the logo and the text 'THE GLOBE PROGRAM' and 'A Worldwide Science and Education Program'. The navigation menu has items: About, Join, Get Trained, Do GLOBE, GLOBE Data, Community, News & Events, and Support. The 'GLOBE Data' menu is open, showing options: Data Entry, Visualize Data, Retrieve Data, and Science Honor Roll. A red arrow points from the text above to the 'Visualize Data' option in the menu. Below the navigation is a large banner image of a castle and students in a field. A white box on the banner contains text about the 2018 GLE/22nd Annual Meeting. Below the banner is a search bar with 'United States of America' and a 'Go' button. At the bottom, there is a 'RECENT MEASUREMENTS' section with a breadcrumb trail: '< / Junior High School, United States, Clouds, Measured on: 2018-03-01 | Haines School, United State > ||'. A blue button labeled 'Visualize Data' is highlighted with a red arrow pointing to it from the text above. Other buttons include 'Enter Data' and 'Go'.

THE GLOBE PROGRAM  
A Worldwide Science and Education Program

Search SIGN IN ENGLISH

About Join Get Trained Do GLOBE GLOBE Data Community News & Events Support

Data Entry  
Visualize Data  
Retrieve Data  
Science Honor Roll

Registration for the 2018 GLE/22nd Annual Meeting is Now Open!  
The GLOBE Implementation Office is excited to announce that registration for the 2018 GLOBE Learning Expedition (GLE) and the 22nd Annual Meeting in Ireland is now open! Takes place 1 - 6 July 2018!  
[More >](#)

See GLOBE in your Country or Region: United States of America Go

RECENT MEASUREMENTS  
< / Junior High School, United States, Clouds, Measured on: 2018-03-01 | Haines School, United State > ||  
Enter Data  
Visualize Data

Recent Measurements: Last 7 Days

Click on [Enter the Visualization System](#) link. This page also contains a link to this tutorial.



Home > GLOBE Data > Visualize Data

Share

### GLOBE Data

[Data Entry](#)

[Visualize Data](#)

[Retrieve Data](#)

[Science Honor Roll](#)

## Visualization System

GLOBE provides the ability to view and interact with data measured across the world. Select the [visualization tool](#) to map, graph, filter and export data that have been measured across GLOBE protocols since 1995. Currently the GLOBE Data Visualization Tool supports a subset of protocols. Additional Features and capabilities are continually being added.

[Enter the Visualization System](#)

### Tutorials on Using the Visualization System

[PDF version](#)

[PowerPoint version](#)

### Long-term Data

Long-term air temperature and precipitation data from the Global Historical Climatology Network (GHCN) version 3 dataset (air temperature) and version 2 dataset (precipitation) managed by the National Climatic Data Center (NCDC). More information about this dataset is available through NCDC at: <http://www.ncdc.noaa.gov/ghcnm>

This data is provided as a [Google Earth KML](#) file, which displays reporting stations of long-term air temperature and precipitation data from the National Climatic Data Center (NCDC).

Download the KML data and use [Google Earth](#) to locate a long-term data record.

From the popup balloons for each city within [Google Earth](#) you can download and view the long-term air temperature and precipitation data record in CSV (comma separated value) format for use in a spreadsheet program. The data are available in monthly or yearly intervals, so if you choose to calculate the yearly averages, you will want to download monthly data to start. Regional averages can be performed on either the monthly or yearly data.

For guidance refer to the [Google Earth Instruction Guide](#) for more detailed instructions on using [Google Earth](#) and the [Viewing Long-term Air Temperature and Precipitation Data Guide](#) for more information about the data format.

This is the GLOBE Visualization Landing Page. The help tab is the default tab when you first come to Vis. There are getting started steps, links to quick demonstrations and this complete tutorial. Check the 'Don't show again' to default to the layer screen for future visits.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

Welcome Cornell Lewis Sign Out

2018-04-19

>Welcome!

**Getting Started:**

Three steps to visualizing your data:

1. Select the protocol data you would like to visualize.
2. Select the date
3. Click a measurement to retrieve the data

[See a 20 second demonstration](#)

[See a quick demonstration of additional features](#)

Don't Show Again

Show My  
 Sites  Measurements

Filter Sets: [Share](#) [Load](#) [Save](#)

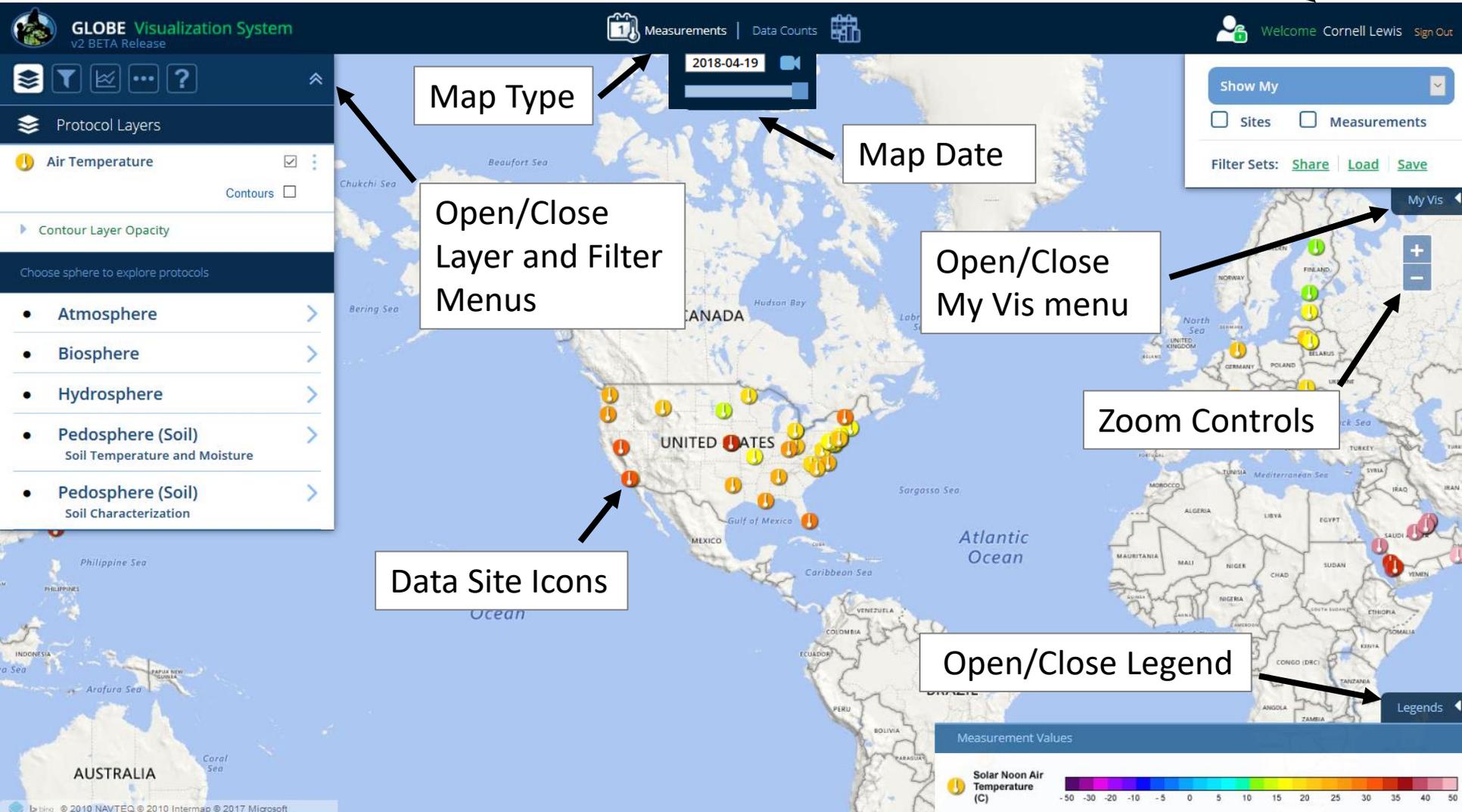
My Vis  
+  
-

Legends

© 2010 NAVTEQ © 2010 Intermap © 2017 Microsoft

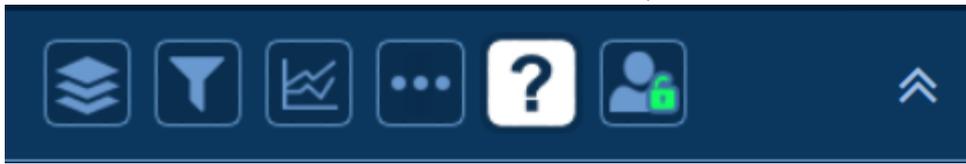
# Overview of the Visualization Window Features (Desktop view)

Sign-in / Sign-out



# Layer and Filter Menu Icons

My Vis / Sign-in and out  
(on phone and small tablets)



↑  
Layers

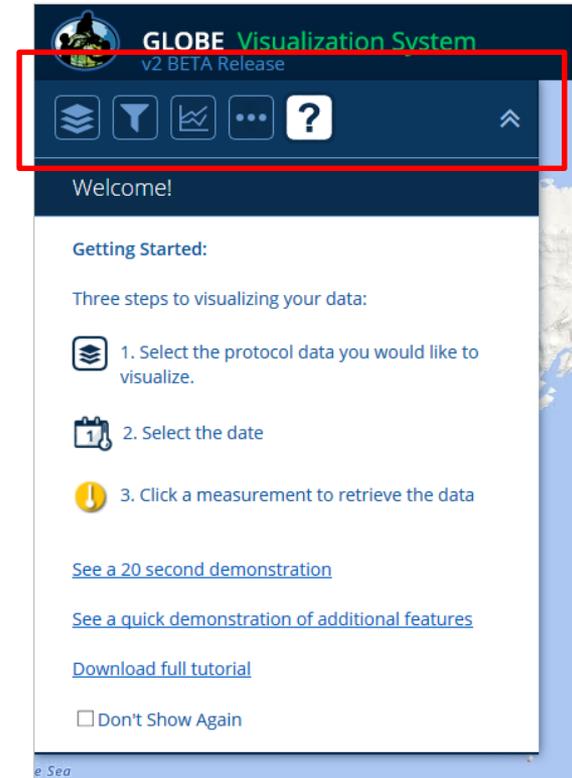
↑  
Filters

↑  
Multi-Site  
Plots

↑  
Base Map, Language and  
Map Grid Controls

↑  
Welcome and  
Tutorials

↑  
Open/close  
menu



# The Basics of the Visualization System

## Three Steps to Visualize your Data:

1. Select the type of data you want to see (Add Layers)
2. Select the Date you want to see the data for
3. Click on a data point on the map to receive table and graph information

First, make sure you're on the 'Measurements' map (the measurements icon and text should be white). If not, select it.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2018-04-19

Protocol Layers

Choose a Sphere below to see protocols. From there, open each protocol to see the available data layers that can be added to the map.

Choose sphere to explore protocols

- Atmosphere >
- Biosphere >
- Hydrosphere >
- Pedosphere (Soil) >  
Soil Temperature and Moisture
- Pedosphere (Soil) >  
Soil Characterization

Beaufort Sea, Chukchi Sea, Gulf of Alaska, CANADA, Hudson Bay, Labrador Sea, UNITED STATES, Gulf of Mexico, MEXICO, CUBA, Philippine Sea, Caribbean Sea, Sargasso Sea

Next, click the Protocol Layers icon and then a sphere category. For this tutorial, select Atmosphere.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2018-04-19

**Protocol Layers**

Choose a Sphere below to see protocols. From there, open each protocol to see the available data layers that can be added to the map.

Choose sphere to explore protocols

- **Atmosphere**
- Biosphere
- Hydrosphere
- Pedosphere (Soil)  
Soil Temperature and Moisture
- Pedosphere (Soil)  
Soil Characterization

Beaufort Sea, Hudson Bay, Gulf of Mexico, CANADA, UNITED STATES, MEXICO, Caribbean Sea, Philippine Sea, Labrador Sea, Sargasso Sea, Gulf of Alaska, Chukchi Sea, Philippine Sea

Select the protocol layer(s) to add to the map (you can add multiple layers). For the tutorial, select Max Daily Temp and 'Submit'.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes icons for 'Measurements' (with a '1' notification), 'Data Counts', and a grid icon. A date selector shows '2018-04-19' with a play button and a progress bar. The left sidebar contains a 'Protocol Layers' section with a list of protocols. The 'Air Temperature Dailies' section is expanded, showing three options: 'Solar Noon Temperature Dailies' (unchecked), 'Maximum Daily Temperature' (checked and circled in red), and 'Minimum Daily Temperature' (unchecked). A green 'SUBMIT' button is highlighted with a red box. The main map area shows a topographic view of North America, with labels for 'CANADA', 'UNITED STATES', 'MEXICO', 'VENEZUELA', and 'COLOMBIA'. Various seas and oceans are also labeled, including the Beaufort Sea, Gulf of Alaska, Hudson Bay, Labrador Sea, Sargasso Sea, Gulf of Mexico, Caribbean Sea, and Pacific Ocean.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2018-04-19

Protocol Layers

Choose a Sphere below to see protocols. From there, open each protocol to see the available data layers that can be added to the map.

Check to select Protocols **SUBMIT**

- ▼ Air Temperature Dailies
  - Solar Noon Temperature Dailies
  - Maximum Daily Temperature
  - Minimum Daily Temperature
- ▶ Air Temperature Monthlies
- ▶ Air Temperature Noons
- ▶ Air Temperature
- ▶ Aerosols
- ▶ Barometric Pressure Noons
- ▶ Barometric Pressures
- ▶ Clouds Noons

CANADA

UNITED STATES

MEXICO

VENEZUELA

COLOMBIA

Beaufort Sea

Hudson Bay

Labrador Sea

Gulf of Alaska

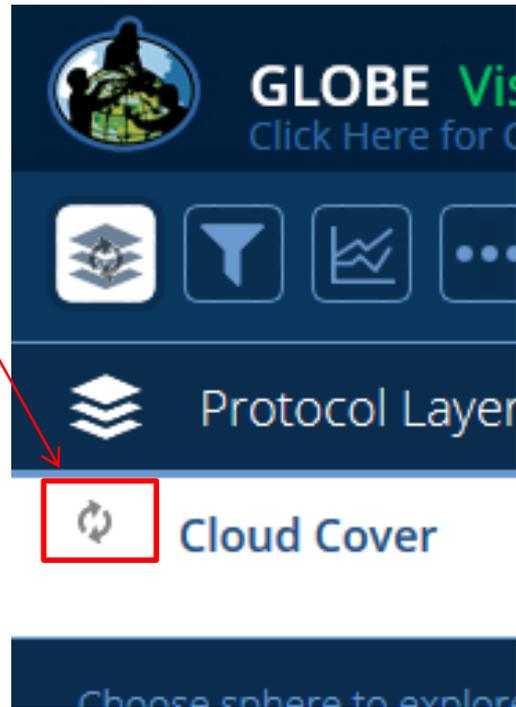
Gulf of Mexico

Caribbean Sea

Pacific Ocean

Sargasso Sea

If there's a lot of data, you may get an in-progress icon. Please wait until the system finishes before clicking or performing additional operations.



The Max Daily Temperature layer is added to the map. The map shows sites that have maximum air temperature measurements for the current day.

The screenshot shows the GLOBE Visualization System v2 BETA Release interface. At the top, there are navigation icons for 'Measurements' and 'Data Counts', and a date selector set to '2017-08-30'. The left sidebar contains a 'Protocol Layers' menu where 'Maximum Daily Temperature' is selected and circled in red. Below this menu, there are options to explore protocols by sphere: Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The main map area shows a world map with several orange and yellow pins indicating measurement sites. The pins are concentrated in the eastern United States and parts of Europe. The map also shows geographical labels for various regions and oceans.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2017-08-30

Protocol Layers

**Maximum Daily Temperature**

Choose sphere to explore protocols

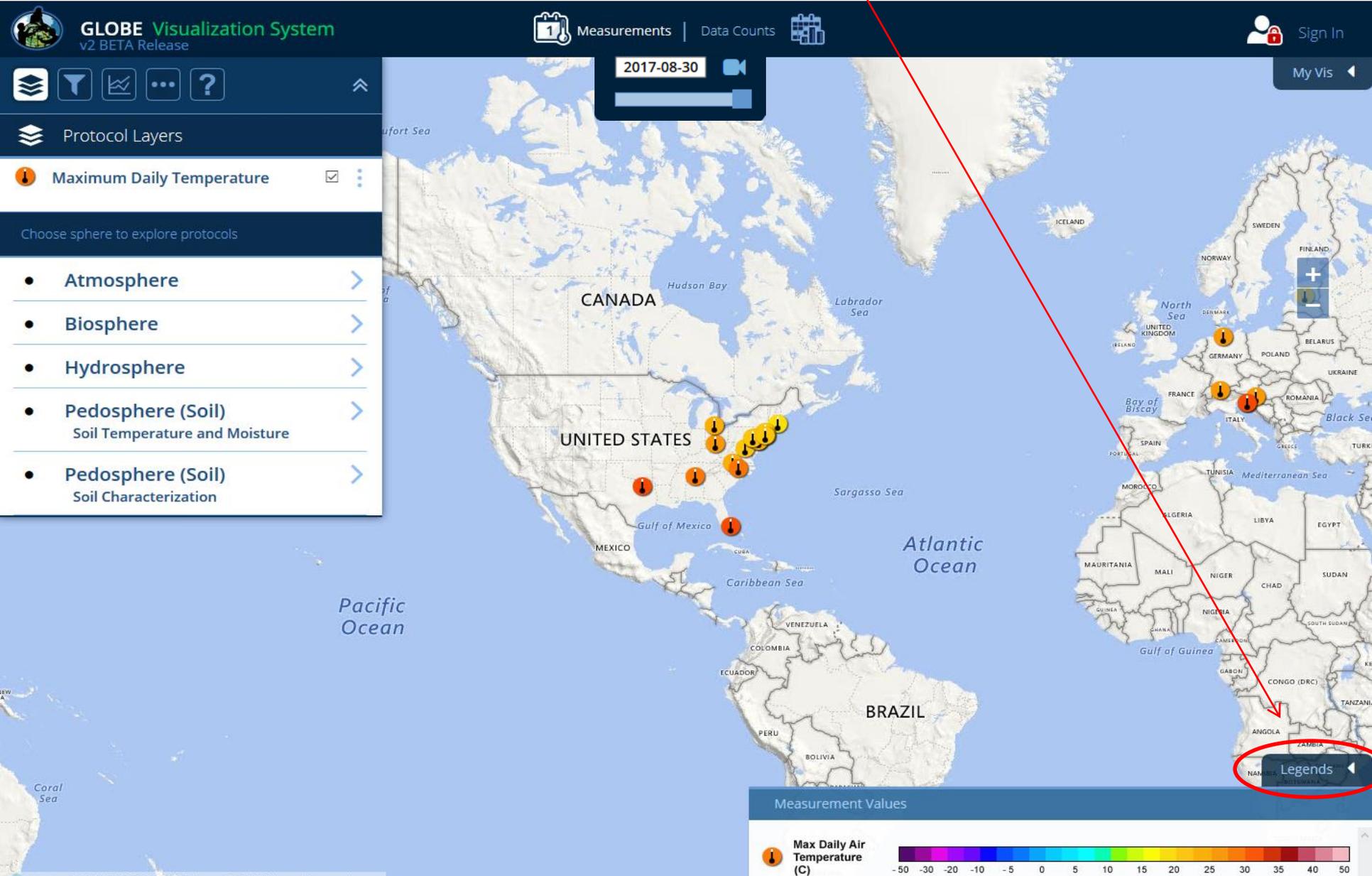
- Atmosphere
- Biosphere
- Hydrosphere
- Pedosphere (Soil)  
Soil Temperature and Moisture
- Pedosphere (Soil)  
Soil Characterization

Map Labels: CANADA, UNITED STATES, MEXICO, BRAZIL, ATLANTIC OCEAN, PACIFIC OCEAN, GULF OF MEXICO, CARIBBEAN SEA, GULF OF GUINEA, MEDITERRANEAN SEA, NORTH SEA, BAY OF BISCAY, SARGASSO SEA, HUDSON BAY, LABRADOR SEA, GULF OF GUINEA, SOUTH AFRICA, SOUTH AMERICA, AFRICA, EUROPE, ASIA, AUSTRALIA.

Map Pins: Multiple orange and yellow pins indicating measurement sites across North America and Europe.

Footer: © 2010 NAVTEQ © 2010 Intermap © 2017 Microsoft Corporation

Open the legend to see the measurement values of the site icons. The colors in the scale correspond to the possible data values for that data type.



Click on the date window to change the map date. For the tutorial, change the date to April 4, 2013.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

Sign In

My Vis

Protocol Layers

- Maximum Daily Temperature

Choose sphere to explore protocols

- Atmosphere
- Biosphere
- Hydrosphere
- Pedosphere (Soil)  
Soil Temperature and Moisture
- Pedosphere (Soil)  
Soil Characterization

Calendar: Apr 2013

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Icons indicate the actual measurement date

Geographic Labels: Beaufort Sea, Gulf of Alaska, Gulf of Mexico, Caribbean Sea, Atlantic Ocean, Pacific Ocean, Sargasso Sea, North Sea, Bay of Biscay, Mediterranean Sea, Gulf of Guinea, Coral Sea.

Country Labels: UNITED STATES, MEXICO, BRAZIL, CANADA, ICELAND, SWEDEN, NORWAY, DENMARK, UNITED KINGDOM, IRELAND, FRANCE, ROMANIA, UKRAINE, PORTUGAL, MOROCCO, ALGERIA, LIBYA, EGYPT, MAURITANIA, MALI, NIGER, CHAD, SUDAN, GUINEA, NIGERIA, CAMEROON, SOUTH SUDAN, GABON, CONGO (DRC), ANGOLA, ZAMBIA, NAMIBIA, BOTSWANA, ZIMBABWE, MOZAMBIQUE.

Footer: © 2010 NAV/TEQ © 2010 Intermap © 2017 Microsoft Corporation

A small protocol icon will appear on the calendar indicating which day has measurements. In this example, a max daily temperature measurement occurred everyday in April.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes a calendar icon, 'Measurements', 'Data Counts', and a 'Sign In' button. The left sidebar features a 'Protocol Layers' section with a checked box for 'Maximum Daily Temperature' and a list of spheres: Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The main area shows a world map with various colored pins. A calendar for April 2013 is overlaid, with a red circle highlighting the 2nd. A tooltip above the calendar shows the date '2013-04-03'. A legend at the bottom right is partially visible.

2013-04-03

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Icons indicate the actual measurement date

Legend

Zoom in to the U.S. and then click on the measurement icon in the state of Oregon

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

Protocol Layers

Maximum Daily Temperature

Choose sphere to explore protocols

- Atmosphere
- Biosphere
- Hydrosphere
- Pedosphere (Soil)  
Soil Temperature and Moisture
- Pedosphere (Soil)  
Soil Characterization

Pacific Ocean

Atlantic Ocean

bing © 2010 NAVTEQ © 2017 Microsoft Corporation

The site information window will open showing the measurement data at this site. Note: The layer/filter menu closes but you can open it by clicking on the menu arrow icon at the top left.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

**School:** Lourdes Public Charter School  
**Site:** School Site:ATM-02

Measurements | Data Counts | School Info | Site Info | Photos

**Atmosphere**

Air Temperature Dailies

Solar Noon Temperature Dailies  
 Maximum Daily Temperature  
 Minimum Daily Temperature

Data Date Range: 2009-12-31 to 2017-08-30

Measured At: 2013-04-03 20:14:00  
Solar Measured At: 2013-04-03 12:03:00  
Solar Noon At: 2013-04-03 20:13:00  
Daily Average Temperature: 14.1 °C  
Minimum Daily Temperature: 5.4 °C  
Maximum Daily Temperature: 18.7 °C  
Comments: air temp subday rollup  
Elevation: 188.30 m

30 Days | 1 Year | Custom

UNITED STATES

© 2010 NAVTEQ © 2017 Microsoft Corporation

Legends

# Measurements Site Info Window:

Click this icon to view data tables for all of your data

Click this icon to go to the school page

Click this icon to view the plot data in a table

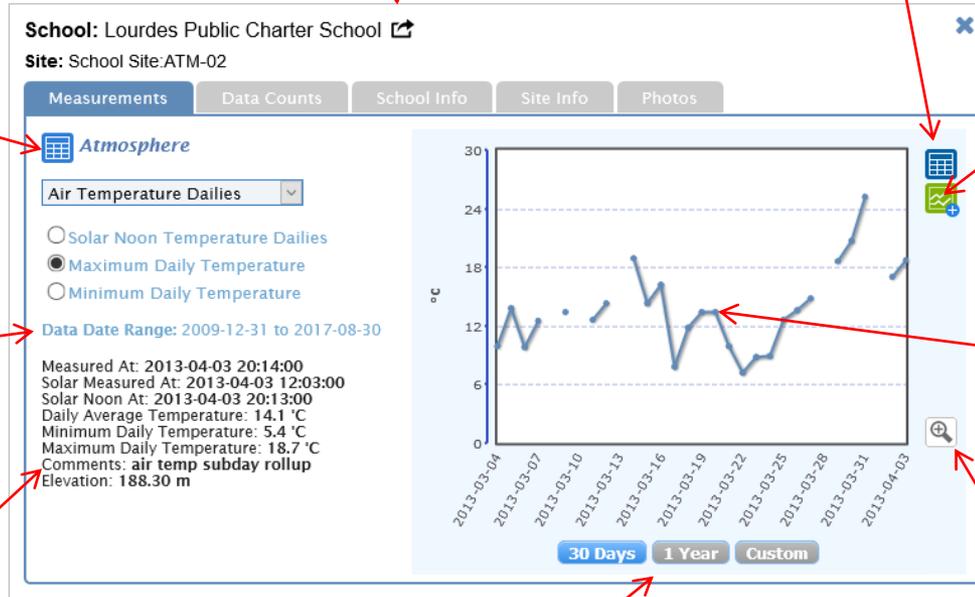
Data at this site can be found in this date range

Click this icon to add the site to a multi-site time series plot

Roll-over a plot point to see measurement value and date

Measurement info for the selected data type

Click the zoom icon for a larger plot view



Change plot time range

You can look at any measurement data at this site by selecting a data type in the drop-down menu.

The screenshot displays the GLOBE Visualization System interface. At the top, the header includes the GLOBE logo, the text "GLOBE Visualization System v2 BETA Release", and navigation links for "Measurements" and "Data Counts". A date selector shows "2013-04-03". The main content area features a map of Alaska with a pop-up window for "School: Lourdes Public Charter School" and "Site: School Site:ATM-02". The pop-up window has tabs for "Measurements", "Data Counts", "School Info", "Site Info", and "Photos". Under the "Measurements" tab, a dropdown menu is open, listing various data types under the "Atmosphere" category. A red box highlights this menu, and a red arrow points to the "Air Temperature Dailies" option. To the right of the menu is a line graph showing temperature data from 2013-03-04 to 2013-04-03. The graph's y-axis is labeled "°C" and ranges from 0 to 30. Below the graph are buttons for "30 Days", "1 Year", and "Custom".

**Measurements** | Data Counts | School Info | Site Info | Photos

**Atmosphere**

- Air Temperature Dailies
- Air Temperature Monthlys
- Air Temperature Noons
- Air Temperature
- Barometric Pressure Noons
- Barometric Pressures
- Precipitation
- Precipitation Monthlys
- Relative Humidities Noons
- Relative Humidities Monthlys
- Relative Humidities

Comments: air temp Sunday 10:00  
Elevation: 180.96 m

30 Days | 1 Year | Custom

Click on the table icon next to the Atmosphere title. You can either view data tables for the selected data type (Air Temperature Dailies) or all of the Atmosphere data. Select Air Temperature Dailies.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

**School:** Lourdes Public Charter School

**Site:** School Site:ATM-02

Measurements | Data Counts | School Info | Site Info | Photos

**Atmosphere**

Air Temperature Dailies Data  
 All Atmosphere Data  
 Maximum Daily Temperature  
 Minimum Daily Temperature

**Data Date Range:** 2009-12-31 to 2017-08-30

Measured At: 2013-04-03 20:14:00  
Solar Measured At: 2013-04-03 12:03:00  
Solar Noon At: 2013-04-03 20:13:00  
Daily Average Temperature: 14.1 °C  
Minimum Daily Temperature: 5.4 °C  
Maximum Daily Temperature: 18.7 °C  
Comments: air temp subday rollup  
Elevation: 188.30 m

30 Days | 1 Year | Custom

Note that this table gives values for local solar noon and minimum and maximum daily temperature. Clicking the button at the bottom will export the data in a comma delimited format. Close this window.

**GLOBE Visualization System**  
[Click Here for Classic Version](#)

Measurements | Data Counts

Sign In

**Lourdes Public Charter School : School Site:ATM-02 Data Table**

School Name	Site Name	Userid	Latitude	Longitude	Elevation	Measured At	Solar Measured At	Solar Noon At	Current Temp	Min Temp	Maximum Temp
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-29 20:15:36	2017-04-29 12:08:00	2017-04-29 20:08:00	15.6	1.7	16.8	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-28 19:59:56	2017-04-28 11:52:00	2017-04-28 20:08:00	12.6	2.3	11.9	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-27 20:15:33	2017-04-27 12:07:00	2017-04-27 20:08:00	8	5.7	11.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-26 20:15:56	2017-04-26 12:07:00	2017-04-26 20:08:00	9.6	7	13.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-25 20:15:51	2017-04-25 12:07:00	2017-04-25 20:08:00	10.8	6.3	12.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-24 20:16:00	2017-04-24 12:07:00	2017-04-24 20:08:00	9.3	5.7	11.5	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-23 20:15:57	2017-04-23 12:07:00	2017-04-23 20:09:00	10.3	7.6	15.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-22 20:15:30	2017-04-22 12:06:00	2017-04-22 20:09:00	13.1	8.7	20	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-21 20:15:56	2017-04-21 12:06:00	2017-04-21 20:09:00	16	2.5	16.3	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-20 20:15:54	2017-04-20 12:06:00	2017-04-20 20:09:00	12.5	6.3	15.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-19 20:15:49	2017-04-19 12:06:00	2017-04-19 20:09:00	15.1	6.2	16.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-18 20:15:54	2017-04-18 12:05:00	2017-04-18 20:10:00	14	9	15.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-17 20:15:53	2017-04-17 12:05:00	2017-04-17 20:10:00	10.9	6.8	16.2	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-16 20:15:53	2017-04-16 12:05:00	2017-04-16 20:10:00	14.6	3.8	15.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-15 20:15:28	2017-04-15 12:04:00	2017-04-15 20:10:00	13.3	0.6	14.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-14 20:16:13	2017-04-14 12:05:00	2017-04-14 20:10:00	9	4.6	10.1	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-13 20:15:50	2017-04-13 12:04:00	2017-04-13 20:11:00	9.8	4.6	17.2	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-12 20:15:30	2017-04-12 12:03:00	2017-04-12 20:11:00	15.5	8.2	15.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-11 20:16:06	2017-04-11 12:04:00	2017-04-11 20:11:00	10.3	2.1	13.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-10 20:16:08	2017-04-10 12:03:00	2017-04-10 20:12:00	11.1	4.8	14.8	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-04 20:15:46	2017-04-04 12:01:00	2017-04-04 20:13:00	15.5	3.8	15.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-03 20:15:32	2017-04-03 12:00:00	2017-04-03 20:13:00	11.4	-0.6	14.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-02 20:15:32	2017-04-02 12:00:00	2017-04-02 20:14:00	13.4	3.2	15	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-04-01 20:16:00	2017-04-01 12:00:00	2017-04-01 20:14:00	9.3	4.6	15.2	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-31 20:15:35	2017-03-31 11:59:00	2017-03-31 20:14:00	13	0.4	13	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-30 20:15:53	2017-03-30 11:59:00	2017-03-30 20:15:00	8.7	5.3	11.8	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-29 20:15:57	2017-03-29 11:59:00	2017-03-29 20:15:00	10.2	7.9	15.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-28 20:15:55	2017-03-28 11:58:00	2017-03-28 20:15:00	14	6.2	14	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-27 20:15:59	2017-03-27 11:58:00	2017-03-27 20:16:00	9.7	5.4	9.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-26 20:15:52	2017-03-26 11:58:00	2017-03-26 20:16:00	8.8	4.8	11.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-25 20:15:49	2017-03-25 11:57:00	2017-03-25 20:16:00	10	5.8	11.5	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-24 20:15:56	2017-03-24 11:57:00	2017-03-24 20:16:00	11.1	6.7	16	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-23 20:15:38	2017-03-23 11:56:00	2017-03-23 20:17:00	14.2	2.9	15.4	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-22 20:15:34	2017-03-22 11:56:00	2017-03-22 20:17:00	9.2	7.6	18.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-21 20:15:23	2017-03-21 11:55:00	2017-03-21 20:17:00	17.1	5.9	17.1	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-20 20:15:49	2017-03-20 11:56:00	2017-03-20 20:18:00	8.9	4.2	13.6	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-19 20:15:50	2017-03-19 11:55:00	2017-03-19 20:18:00	11.2	-0.9	11.2	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-18 20:15:47	2017-03-18 11:55:00	2017-03-18 20:18:00	7.1	6.5	16.1	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-17 20:15:23	2017-03-17 11:54:00	2017-03-17 20:19:00	10.7	1.9	12.5	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-16 20:15:36	2017-03-16 11:54:00	2017-03-16 20:19:00	9.7	4.9	12.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-15 20:15:42	2017-03-15 11:54:00	2017-03-15 20:19:00	11.2	9.8	13.7	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-14 20:15:29	2017-03-14 11:53:00	2017-03-14 20:19:00	12.9	11	14.8	
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2017-03-13 20:15:25	2017-03-13 11:53:00	2017-03-13 20:20:00	13.1	7.7	20.2	

Export .csv

2009-12-31 to 2017-09-13  
1 - 45 of 1984

1000 km

© 2017 HERE © 2017 Microsoft Corporation

Legends

Next, check the button to see all of the atmosphere data in a table view.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

**School:** Lourdes Public Charter School  
**Site:** School Site:ATM-02

Measurements | Data Counts | School Info | Site Info | Photos

**View Data Table:**

- Air Temperature Dailies Data
- All Atmosphere Data
- Solar Radiation Dailies
- Maximum Daily Temperature
- Minimum Daily Temperature

Data Date Range: 2009-12-31 to 2017-08-30

Measured At: 2013-04-03 20:14:00  
Solar Measured At: 2013-04-03 12:03:00  
Solar Noon At: 2013-04-03 20:13:00  
Daily Average Temperature: 14.1 °C  
Minimum Daily Temperature: 5.4 °C  
Maximum Daily Temperature: 18.7 °C  
Comments: air temp subday rollup  
Elevation: 188.30 m

30 Days | 1 Year | Custom

UNITED STATES

Legends

Now, all of your data is displayed in the table (this may take awhile). If you right click any column header (desktop only), a window will open to allow you to filter the data columns.

The screenshot displays the GLOBE Visualization System interface. At the top, the title bar reads "GLOBE Visualization System" with a "Click Here for Classic Version" link. The main window title is "Lourdes Public Charter School : School Site:ATM-02 Data Table (Data may be a few hours old)".

The data table has the following columns: School Name, Site Name, Latitude, Longitude, Elevation, Measured At, Solar Measured At, and Solar Noon At. The table contains 45 rows of data, with the last row showing values for School Name, Site Name, Latitude, Longitude, Elevation, Measured At, Solar Measured At, Solar Noon At, and three unlabeled columns with values 3.3, 990.4, and 1012.2.

A red box highlights a context menu that appears when a column header is right-clicked. The menu lists the following columns with checkboxes: School Name, Site Name, Latitude, Longitude, Elevation, Measured At, Solar Measured At, Solar Noon At, Current Temp, Pressure, Sea Level Pressure, Pressure Method, Aerosol Optical Thickness, Transmission Percent, Sensor Wavelength Nm, Observed Sky Color, and Observed Sky Clarity. The "School Name" checkbox is checked.

At the bottom of the interface, there is an "Export .csv" button, a date range selector set to "1995-01-01 to 2017-09-13", and a page indicator "1 - 45 of 232137".

To compare this site data to other sites, you can add the site to a multi-site time series plot by clicking on this button. Keep the plot range at 30 days and then select the button

The screenshot shows the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes 'Measurements' (with a '1' notification), 'Data Counts', and a user profile icon with 'Sign In'. The main map area displays 'Beaufort Sea' and 'Amundsen Gulf' with a date selector for '2013-04-03'. A pop-up window for 'School: Lourdes Public Charter School' is open, showing a '30 Days' time series plot for 'Air Temperature Dailies'. The plot shows temperature fluctuations between 6°C and 24°C. A red box highlights a button with a plus sign and a grid icon, which is used to add the site to a multi-site plot. The interface also includes a 'My Vis' button, a 'Legends' button, and a footer with 'bing © 2010 NAVTEQ © 2017 Microsoft Corporation'.

**School:** Lourdes Public Charter School

**Site:** School Site:ATM-02

**Measurements** | Data Counts | School Info | Site Info | Photos

**Atmosphere**

Air Temperature Dailies

- Solar Noon Temperature Dailies
- Maximum Daily Temperature
- Minimum Daily Temperature

Data Date Range: 2009-12-31 to 2017-08-30

Measured At: 2013-04-03 20:14:00  
Solar Measured At: 2013-04-03 12:03:00  
Solar Noon At: 2013-04-03 20:13:00  
Daily Average Temperature: 14.1 °C  
Minimum Daily Temperature: 5.4 °C  
Maximum Daily Temperature: 18.7 °C  
Comments: air temp subday rollup  
Elevation: 188.30 m

30 Days | 1 Year | Custom

The site is added to the Multi-Site Plots list with the date range from the site plot pre-selected. You can change the dates by clicking on the date fields or by using the slider.

The screenshot displays the GLOBE Visualization System interface. The top navigation bar includes 'GLOBE Visualization System', 'Measurements' (with a '1' notification), 'Data Counts', and a user profile icon with 'Sign In' and 'My Vis' options. The left sidebar contains a 'Multi-Site Plots' section with a search bar and a list of sites. The main content area shows a detailed view for the 'Lourdes Public Charter School' site, including a line graph of 'Air Temperature Dailies' and various data fields.

**Multi-Site Plots Configuration:**

- School: Lourdes Public Charter School
- Site: School Site:ATM-02
- Protocol: Air Temperature Dailies
- Plot: Maximum Daily Temperature
- Range: 2009-12-31 to 2018-10-03
- Y-Axis: -50 °C to 50 °C
- Plot Date Range: 2013-03-04 to 2013-04-03
- Options: Single Line Plot, Stacked Plot, Use Auto-Y Axis
- Buttons: Plot All, View Plot Data, Clear List

**Site Details (Lourdes Public Charter School):**

- Measurements | Data Counts | School Info | Site Info | Photos
- Atmosphere
- Air Temperature Dailies (selected)
- Other options: Solar Noon Temperature Dailies, Maximum Daily Temperature, Minimum Daily Temperature
- Data Date Range: 2009-12-31 to 2018-10-03
- Measured At: 2013-04-03 20:14:00
- Solar Measured At: 2013-04-03 12:03:00
- Solar Noon At: 2013-04-03 20:13:00
- Daily Average Temperature: 14.1 °C
- Minimum Daily Temperature: 5.4 °C
- Maximum Daily Temperature: 18.7 °C
- Comments: air temp subday rollup
- Elevation: 188.30 m
- Time Range: 30 Days | 1 Year | Custom

Now let's select another site. Close the site info window of the U.S. site and then select one of the sites in France. Again click on the icon to add the site to the multi-site time series plot.

The screenshot displays the GLOBE Visualization System interface. The top navigation bar includes the GLOBE logo, 'Visualizations System', and navigation icons for 'Measurements', 'Data Counts', and 'Site Info'. A date selector shows '2013-04-03'. The main map area shows a world map with various site markers. A site information window is open for 'School: Lycée Bernard PALISSY' and 'Site: Grande-Cour:ATM-01'. The window has tabs for 'Measurements', 'Data Counts', 'School Info', 'Site Info', and 'Photos'. The 'Measurements' tab is active, showing 'Atmosphere' data. Under 'Air Temperature Dailies', 'Maximum Daily Temperature' is selected. A line graph shows temperature data from 2013-03-04 to 2013-04-03. A red arrow points to a green plus icon in the bottom right corner of the graph area, which is used to add the site to the multi-site time series plot. The window also displays measurement details for 2013-04-03 12:00:00, including a daily average temperature of 13.9 °C and a maximum daily temperature of 14.4 °C. The bottom of the interface shows a scale bar (500 km) and a legend.

The second site is now added. Now click on the 'Plot All' button to view the time series plot.

The screenshot displays the GLOBE Visualization System interface. On the left, a sidebar lists two sites: Lourdes Public Charter School (Site: School Site:ATM-02) and Bernard High School PALISSY (Site: Great Court: ATM-01). The Bernard High School entry is highlighted with a red box. Below the list, a 'Plot Date Range' section shows dates from 2013-03-04 to 2013-04-03. At the bottom of the sidebar, the 'Plot All' button is also highlighted with a red box. The main area features a world map with colored markers for various sites. A detailed data panel for 'Lycée Bernard PALISSY' is open, showing a line graph of 'Air Temperature Dailies' for the date 2013-04-03. The graph shows a temperature range from approximately 3.1°C to 14.4°C. The panel includes tabs for 'Measurements', 'Data Counts', 'School Info', 'Site Info', and 'Photos'. The 'Measurements' tab is active, displaying the selected plot type and a 'Data Date Range' of 2007-11-08 to 2018-09-30. The graph shows a single data point for the selected date, with a value of 13.9°C. The panel also lists 'Measured At: 2013-04-03 12:00:00', 'Solar Measured At: 2013-04-03 12:00:00', 'Daily Average Temperature: 13.9 °C', 'Minimum Daily Temperature: 3.1 °C', 'Maximum Daily Temperature: 14.4 °C', and 'Comments: air temp subday rollup'. The elevation is listed as 50.60 m. The interface includes a top navigation bar with 'Measurements' and 'Data Counts' links, a 'Sign In' button, and a 'My Vis' button. The bottom of the screen shows 'Sites on Map: 189' and a scale bar of 500 km.

**Site List:**

- School: Lourdes Public Charter School  
Site: School Site:ATM-02  
Protocol: Air Temperature Dailies  
Plot: Maximum Daily Temperature  
Range: 2009-12-31 to 2018-10-03  
Y-Axis: -50 °C to 50 °C
- School: **Bernard High School PALISSY**  
Site: **Great Court: ATM-01**  
Protocol: Air Temperature Dailies  
Plot: Maximum Daily Temperature  
Range: 2007-11-08 to 2018-09-30  
Y-Axis: -50 °C to 50 °C

**Plot Date Range:** 2013-03-04 to 2013-04-03

For optimum performance, the maximum recommended date range is 5 years

Single Line Plot  Stacked Plot

Use Auto-Yaxis

**Plot All** | View Plot Data | Clear List

**Site Details: Lycée Bernard PALISSY**

Site: Grande-Cour:ATM-01

Measurements | Data Counts | School Info | Site Info | Photos

Atmosphere

Air Temperature Dailies

Solar Noon Temperature Dailies  
 Maximum Daily Temperature  
 Minimum Daily Temperature

Data Date Range: 2007-11-08 to 2018-09-30

Measured At: 2013-04-03 12:00:00  
Solar Measured At: 2013-04-03 12:00:00  
Daily Average Temperature: 13.9 °C  
Minimum Daily Temperature: 3.1 °C  
Maximum Daily Temperature: 14.4 °C  
Comments: air temp subday rollup  
Elevation: 50.60 m

30 Days | 1 Year | Custom

Here is the result. A maximum of 6 datasets can be added to the plot list and the maximum plot date range recommended is 5 years. Clicking the print button will print out a copy of this graph.



By default, the **use Auto Y-axis** box is checked so the software adjusts the y-axes individually to spread the data vertically on the graph. You can elect to un-check the Auto Y-axis and manually adjust the Y-axis for each site.

Multi-Site Plots

School: **Lourdes Public Charter School**  
Site: **School Site:ATM-02**

Protocol: **Air Temperature Dailies**  
Plot: **Maximum Daily Temperature**  
Range: **2009-12-31 to 2018-10-03**  
Y-Axis: **-50 °C to 50 °C**

School: **Bernard High School PALISSY**  
Site: **Great Court: ATM-01**

Protocol: **Air Temperature Dailies**  
Plot: **Maximum Daily Temperature**  
Range: **2007-11-08 to 2018-09-30**  
Y-Axis: **-50 °C to 50 °C**

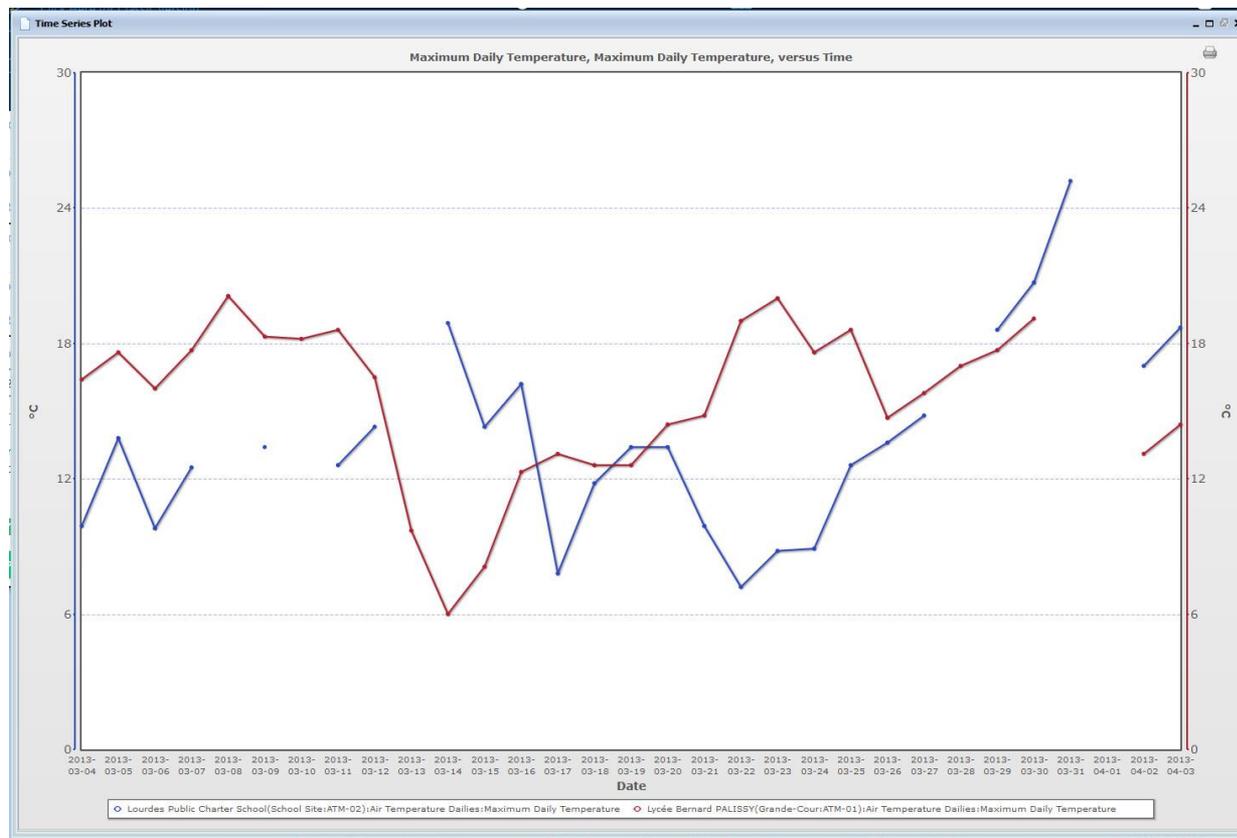
Plot Date Range:  
2013-03-04 to 2013-04-03

For optimum performance, the maximum recommended date range is 5 years

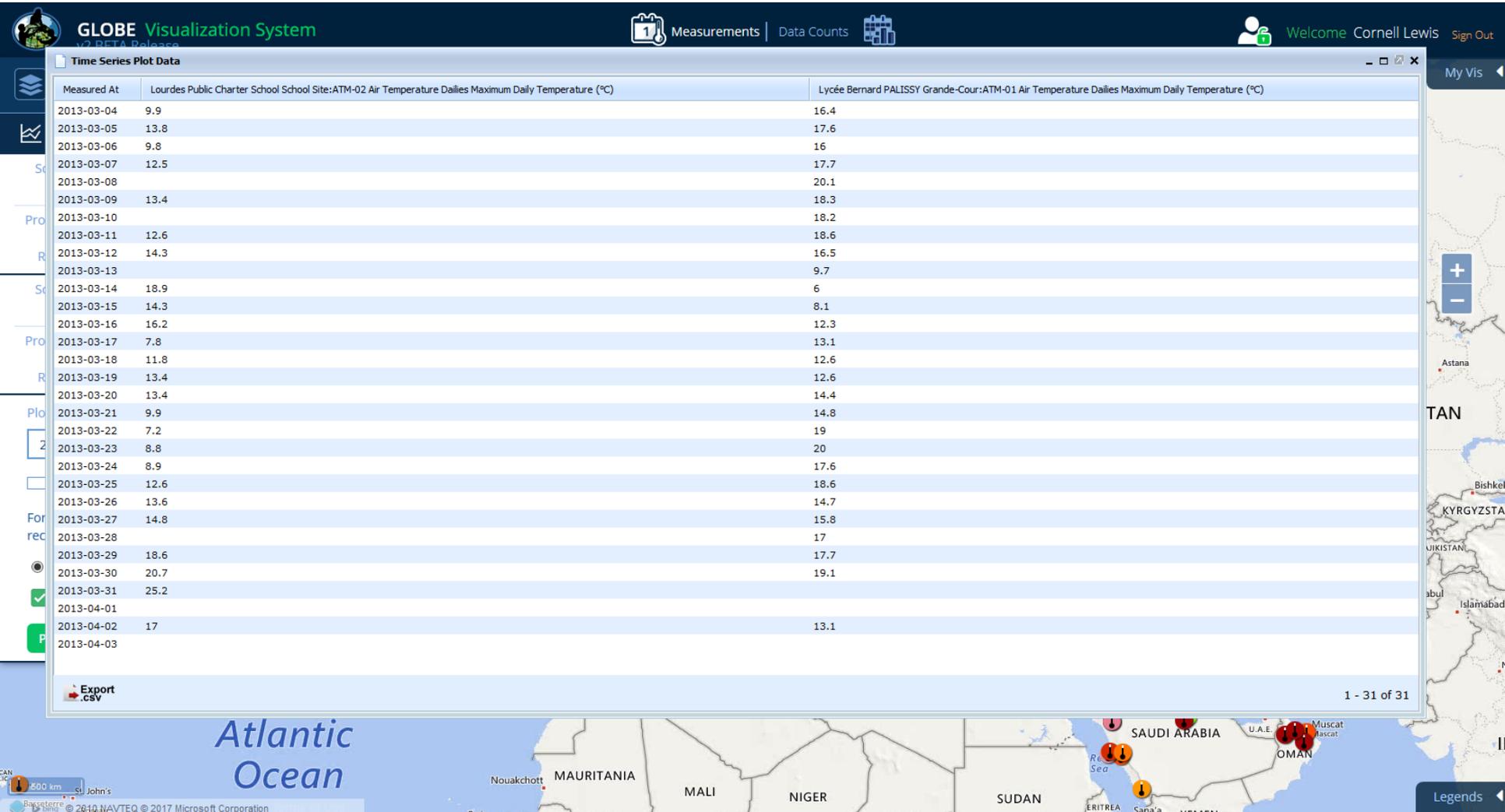
**Single Line Plot**  Stacked Plot

Use Auto-Y Axis

**Plot All** **View Plot Data** **Clear List**



Here is the data table showing the two sites.



# Click 'Stacked Plot' to plot the two sites on separate graphs

Multi-Site Plots

School: [IES Itaca](#)  
Site: [Atmosphere Site 07:ATM-07](#)

Protocol: Air Temperature Dailies  
Plot: Maximum Daily Temperature  
Range: 2005-04-06 to 2017-05-31

School: [Lycée Bernard PALISSY](#)  
Site: [Grande-Cour:ATM-01](#)

Protocol: Air Temperature Dailies  
Plot: Maximum Daily Temperature  
Range: 2007-11-08 to 2017-07-06

Plot Date Range:  
2013-03-04 to 2013-04-03

For optimum performance, the maximum recommended date range is 5 years

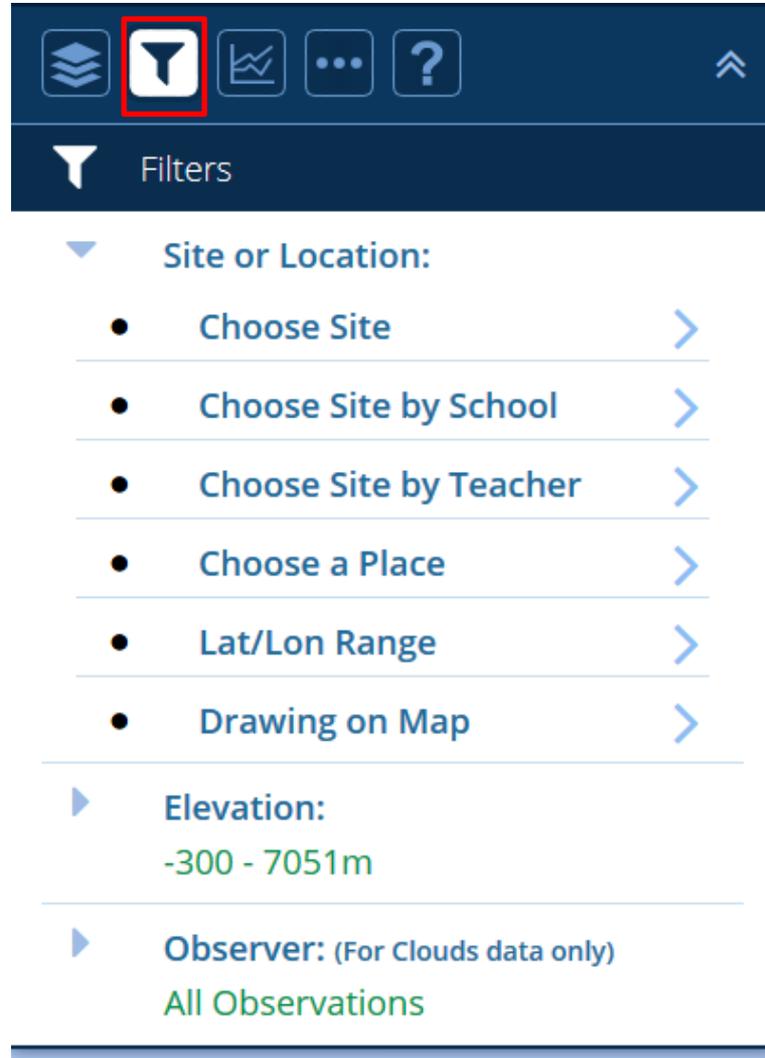
Single Line Plot  **Stacked Plot**

Use Auto-Y Axis

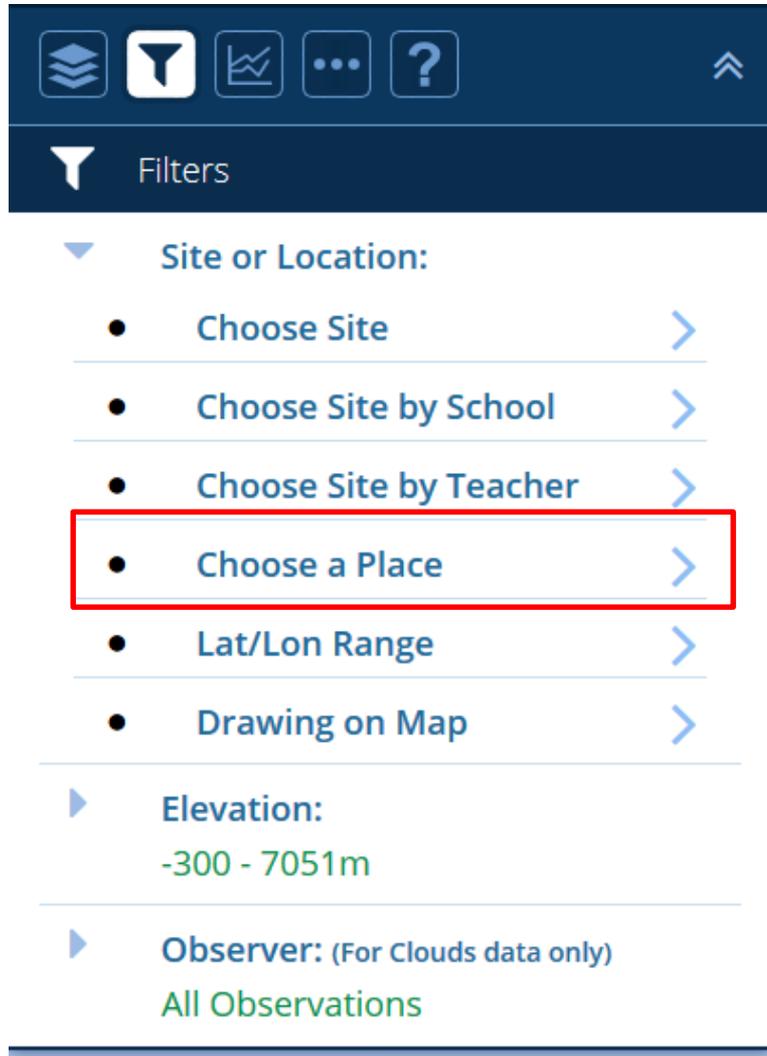
[Plot All](#) [View Plot Data](#) [Clear List](#)



The Filters box is where you refine which data is shown on the map. Click on the filter icon at the left. You can limit the map to display only data at a specific location (such as a country) or at a specific elevation range.



Let's first display only schools in a country, select 'Places' in the Location/Site filter and then enter in Spain.

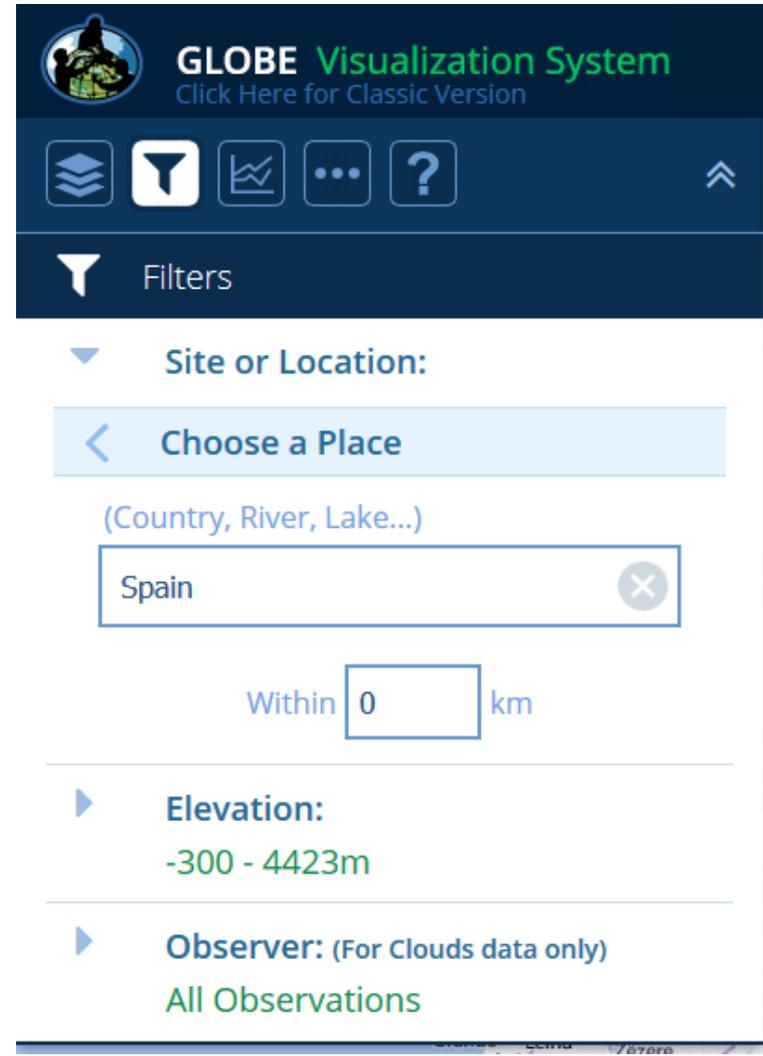


The screenshot shows the 'Filters' menu in the GLOBE Visualization System. The 'Site or Location:' section is expanded, showing several options. The 'Choose a Place' option is highlighted with a red rectangular box. Below this section, the 'Elevation:' filter is set to '-300 - 7051m' and the 'Observer:' filter is set to 'All Observations'.

- Choose Site
- Choose Site by School
- Choose Site by Teacher
- Choose a Place**
- Lat/Lon Range
- Drawing on Map

Elevation:  
-300 - 7051m

Observer: (For Clouds data only)  
All Observations



The screenshot shows the 'Filters' menu with the 'Choose a Place' option selected. A search box is open, containing the text 'Spain'. Below the search box, a distance filter is set to '0 km'. The 'Elevation:' filter is set to '-300 - 4423m' and the 'Observer:' filter is set to 'All Observations'.

Choose a Place

(Country, River, Lake...)

Spain

Within 0 km

Elevation:  
-300 - 4423m

Observer: (For Clouds data only)  
All Observations

The map will zoom into the selected place and only display sites in Spain. Select the back arrow to return to the main Site or Location menu.

**GLOBE Visualization System**  
Click Here for Classic Version

Measurements | Data Counts

2013-04-03

Filters

Site or Location:

**< Choose a Place**

(Country, River, Lake...)

Spain

Within 0 km

Elevation: -300 - 4423m

Observer: (For Clouds data only) All Observations

200 km

© 2017 HERE © 2017 Microsoft Corporation

You can also filter data sites using the 'Drawing on Map' option. Click on the 'Drawing on Map' option. Turn on the tool and then draw a polygon around the site you want to isolate.

**GLOBE Visualization System**  
v2 BETA Release

Filters

- Site or Location:
  - Choose Site
  - Choose Site by School
  - Choose Site by Teacher
  - Choose a Place
  - Lat/Lon Range
  - Drawing on Map**
- Elevation:  
-300 - 7051m
- Observer: (For Clouds data only)  
All Observations

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

Filters

- Site or Location:
  - Drawing on Map**
- Elevation:  
-300 - 7051m
- Observer: (For Clouds data only)  
All Observations

907377.35 km<sup>2</sup>

© 2010 NAVTEQ © 2017 Microsoft Corporation

You can also search for a particular school by name. Return to the Site or Location menu and select 'Choose Site by School'. Type in 'IES Cardinal' in the school name field. The system will auto-complete to show a list of schools that have that name in the title. Select 'IEC Cardinal Pardo Tavera' and the site 'Casteta: ATM-02' and Submit.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. At the top, there are navigation icons for 'Measurements' and 'Data Counts', along with a user profile for 'Cornell Lewis' and a 'Sign Out' option. A date selector shows '2013-04-03'. On the left, a 'Filters' panel is open to 'Site or Location: Choose Site by School'. A search box contains 'IES Cardinal Pardo Tavera', and a dropdown menu shows 'Caseta:ATM-02'. A green 'Submit' button is visible. Below the search panel, 'Elevation: -300 - 7051m' and 'Observer: (For Clouds data only) All Observations' are listed. The main area is a map of Europe with numerous colored pins (green, blue, yellow) indicating data points across various countries like Germany, Poland, France, and Italy. A 'My Vis' button is in the top right, and a 'Legends' button is in the bottom right. The footer includes 'bing © 2010 NAVTEQ © 2017 Microsoft Corporation'.

The site information window of the selected site will open. Note how the site icon is a small red dot. This indicates that no data for the added protocol layer(s) was entered on the measurement date selected (2013-04-03).

The screenshot shows the GLOBE Visualization System v2 BETA Release interface. The main map displays Europe, with a date selector set to 2013-04-03. A pop-up window for the selected site is open, showing the following information:

- School:** IES Cardinal Pardo Tavera
- Site:** Caseta-ATM-02
- Measurements:** Atmosphere
- Air Temperature Dailies:** Selected
- Options:**  Solar Noon Temperature Dailies,  Maximum Daily Temperature,  Minimum Daily Temperature
- Data Date Range:** 2001-03-21 to 2011-05-05

The graph shows a single data point for 2013-04-03, marked with a red dot, indicating that no data was entered for this date. The x-axis shows dates from 2013-03-04 to 2013-04-03, and the y-axis shows values from 0 to 0.15. The interface includes navigation controls like '30 Days', '1 Year', and 'Custom' for the graph, and a 'My Vis' button in the top right corner.

Let's search for another school. Type in 'Itaca' in the school name field select 'IEC Itaca' and then the site 'Atmosphere Site 07: ATM-07'.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes 'Measurements', 'Data Counts', and 'Sign In'. A search filter on the left shows 'Site or Location: Choose Site by School' with 'IES Itaca' entered in the search box. Below this, 'Atmosphere Site 07: ATM-07' is selected from a dropdown menu. A green 'Submit' button is visible. The main map area shows a location in France, with a date selector for '2013-04-03' and a video camera icon. A data visualization window is open, showing 'School: IES Itaca' and 'Site: Atmosphere Site 07: ATM-07'. The window has tabs for 'Measurements', 'Data Counts', 'School Info', 'Site Info', and 'Photos'. The 'Measurements' tab is active, displaying 'Air Temperature Dailies' with radio buttons for 'Solar Noon Temperature Dailies', 'Maximum Daily Temperature' (selected), and 'Minimum Daily Temperature'. The data range is '2005-04-06 to 2017-05-31'. A line graph shows temperature in degrees Celsius over time, with a peak of 20.7 °C. Below the graph are buttons for '30 Days', '1 Year', and 'Custom'. The graph data is as follows:

Date	Temperature (°C)
2013-03-04	14.0
2013-03-07	13.5
2013-03-10	21.5
2013-03-13	19.5
2013-03-16	13.0
2013-03-19	16.5
2013-03-22	15.5
2013-03-25	21.0
2013-03-28	16.5
2013-03-31	22.0
2013-04-03	20.7

Additional data from the window:

- Measured At: 2013-04-03 11:45:00
- Solar Measured At: 2013-04-03 11:53:00
- Solar Noon At: 2013-04-03 11:55:00
- Daily Average Temperature: 15.5 °C
- Minimum Daily Temperature: 7.9 °C
- Maximum Daily Temperature: 20.7 °C
- Comments: air temp subday rollup
- Elevation: 11.80 m

The site info window is now pointing at a Max Daily Temperature icon because temperature data was recorded on the current date.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

Filters

- Site or Location:
  - Choose Site
  - Choose Site by School
  - Choose Site by Teacher
  - Choose a Place
  - Lat/Lon Range
  - Drawing on Map
- Elevation:  
-300 - 7051m
- Observer: (For Clouds data only)  
All Observations

**School: IES Itaca**  
**Site: Atmosphere Site 07-ATM-07**

Measurements | Data Counts | School Info | Site Info | Photos

**Atmosphere**

Air Temperature Dailies

- Solar Noon Temperature Dailies
- Maximum Daily Temperature
- Minimum Daily Temperature

Data Date Range: 2005-04-06 to 2017-05-31

Measured At: 2013-04-03 11:45:00  
Solar Measured At: 2013-04-03 11:53:00  
Solar Noon At: 2013-04-03 11:55:00  
Daily Average Temperature: 15.5 °C  
Minimum Daily Temperature: 7.9 °C  
Maximum Daily Temperature: 20.7 °C  
Comments: air temp subday rollup  
Elevation: 11.80 m

30 Days | 1 Year | Custom

Legend

Another way to output data is to view all data of a layer in a table. To do so, click on the 'more' icon (the 3 dots).

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes icons for 'Measurements' (1), 'Data Counts', and a user profile icon with 'Sign In'. A date selector shows '2013-04-03' with a video camera icon. The main map area shows a 3D topographic view of North America and Europe, with several yellow location markers. The left sidebar contains a 'Protocol Layers' section with a red box around the 'more' icon (three dots) for the 'Maximum Daily Temperature' layer. Below this, there are options for 'Contours', 'Contour Layer Opacity', and a 'Choose sphere to explore protocols' section with a list of categories: Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The bottom of the interface shows a Bing logo and copyright information: '© 2010 NAVTEQ © 2017 Microsoft Corporation'.

A selection pop-up box appears. Click on **View Layer Table**. In this example we used the Place filter to just show U.S. sites. Note – data can also be downloaded to a .kmz file

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes icons for Measurements, Data Counts, and a user profile. The left sidebar shows a 'Protocol Layers' list with 'Maximum Daily Temperature' selected. A red-bordered pop-up menu is open over this layer, containing the following options: 'View Layer Table', 'Download Layer .kmz', 'Delete Layer', and 'Cancel'. Below the layers list is a 'Choose sphere to explore protocols' section with categories: Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The main map area shows a 3D view of North America with several orange location markers on the United States. A date filter '2013-04-03' is visible at the top of the map. At the bottom right, there is a 'Measurement Values' legend for 'Max Daily Air Temperature (C)' with a color scale from -50 to 50 degrees Celsius.

The sites in the U.S. for the layer and measurement date selected are listed in the table and can be sorted by any field name (School Name, Site Name, etc.) and can be exported to a .csv file.

**GLOBE Visualization System**  
[Click Here for Classic Version](#)

Measurements | Data Counts

Sign In

undefined

School Name	Site Name	Latitude	Longitude	Elevation	Measured At	Measured Value
Athens Intermediate School	AIS 2: ATM-02	34.47649	-86.59782	249.2	2013-04-03 17:44:00	27.3
Bay Minette Intermediate	Bay Minette Atmosphere PJ:ATM-02	30.8949	-87.7768	46	2013-04-03 17:00:00	15.7
Bolea Home School	Bolea Home Citizen Scientist:ATM-01	40.8606	-81.4613	332	2013-04-03 17:09:00	6
Daphne Elementary School	Daphne Elementary Project Jubilee:ATM-01	30.6099	-87.9029	45	2013-04-03 18:00:00	24.7
Elizabeth Cashwell Elementary School	5th grade wing:ATM-01	35.0024	-78.5454	129.9	2013-04-03 17:21:00	19.6
Ellis High School	EHS:ATM-01	38.55728	-99.33647	677.6	2013-04-03 18:20:00	8.5
Ellis High School	EHS-2:ATM-02	38.55656	-99.33538	679.6	2013-04-03 18:26:00	8
Fairhope Elementary School (USALSIOM)	East Field Site:ATM-01	30.53	-87.9	72.7	2013-04-03 18:30:00	28
Freedom High School (USVAGZGJ)	AWS WeatherBug:ATM-01	38.9218	-77.5286	111	2013-04-03 17:14:00	7.7
Holmes Middle School	Weather Station, NW of school along chain-link fence:ATM-02	38.8682	-104.8575	1996	2013-04-03 19:30:00	10
John Marshall High School (USWVU59F)	JMHS Min-Max:ATM-39	39.94182	-80.75352	700	2013-04-03 16:37:00	8.6
Littleton Middle School	Weather Station:ATM-01	42.5356	-71.4895	48	2013-04-03 16:45:00	4
Lourdes Public Charter School	School Site:ATM-02	44.7225	-122.6898	188.3	2013-04-03 20:14:00	18.7
Magnolia High School (USWVOGSV)	MAGNOLIA HIGH SCHOOL1:ATM-01	39.646	-80.8617	203	2013-04-03 17:29:00	6.9
Mahopac High School	SEAC-Atm:ATM-01	41.36518	-73.75677	285	2013-04-03 16:59:00	2.9
Main Street Intermediate School	Backyard for instrument shelter:ATM-03	41.23954	-82.63735	251.4	2013-04-03 17:19:00	5.6
Marie Reed Community Learning Center	MARIE REED WEATHER STATION:ATM-02	38.9172	-77.0405	66.2	2013-04-03 17:14:00	8.5
Monroe High School (USMIGE4E)	Bolles Harbor Weatherbug Station:ATM-09	41.87506	-83.39057	209.8	2013-04-03 17:29:00	6
NCAR Foothills Lab	NCAR Foothills Lab weather station:ATM-01	40.035	-105.2431	1625	2013-04-03 18:57:40	10.9
Northland Pines	AWS Weather Station:ATM-02	45.937	-89.255	583.9	2013-04-03 17:59:00	-1.4
O.J.Roberts Middle School	Owen J. Roberts Middle School:ATM-01	40.1752	-75.6583	75	2013-04-03 17:01:00	5.8
Ruth Cherry Intermediate School	Intermediate:ATM-01	32.9858	-96.3219	539	2013-04-03 18:29:00	21.5
St. Joseph School (USWIPZYD)	School Location:ATM-01	44.8756	-91.9192	276	2013-04-03 17:15:00	5
Stone Child College (USMTGCZ3)	yotin:ATM-02	48.2903	-109.8695	1084.6	2013-04-03 19:15:00	20.2
The Morton Arboretum Youth Education Dept.	New weather station:ATM-01	41.82152	-88.07654	261.4	2013-04-03 17:06:00	12.8
Trinity School	Trinity Parking Lot Asphalt and school roof:ATM-02	39.592	-83.0257	281.8	2013-04-03 17:29:00	5.8
Virginia Museum Of Natural History	WeatherBug station on roof, 21 Starling AV:ATM-02	36.6865	-79.86387	348.6	2013-04-03 17:14:00	11.9
WANAKA Field Station	WFS Grass-Pine Overlook:ATM-01	44.67528	-73.10361	142.2	2013-04-03 16:30:00	0.8

Export .csv

1 - 28 of 28

500 km

© 2017 HERE © 2017 Microsoft Corporation

MEXICO  
 JALISCO León Querétaro  
 Mérida  
 Cienfuegos  
 CUBA Legends

Let's take a look at Land Cover Classification. Add the Biosphere > Land Cover Classification Layer. The default view shows measurements entered the past year, but you can change the time interval as shown here.

The screenshot displays the GLOBE Visualization System interface. The top navigation bar includes 'Measurements' and 'Data Counts'. The left sidebar shows the 'Protocol Layers' menu with 'Land Cover Classification' selected. Underneath, the 'Land Cover Interval' dropdown is open, showing options: 'All', '5 Years' (checked), '1 Year', '1 Month', and '1 Day'. A red arrow points to the '5 Years' option. Below the interval settings, there is a section to 'Choose sphere to explore protocols' with options for Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The main map area shows a world map with numerous colored measurement points. A date selector at the top center shows '2018-10-03'. At the bottom right, there is a 'Measurement Values' legend for 'Land Cover Classification (MUC Code)' with a color scale from 0 to 9.

**Land Cover Interval**

- All
- 5 Years
- 1 Year
- 1 Month
- 1 Day

**Measurement Values**

**Land Cover Classification (MUC Code)**

0	1	2	3	4	5	6	7	8	9
01-03	11-13	21-23	31-34	41-44	51-56	61-64	71-72	81-82	91-94

Now, click on a measurement icon and click on the Photo tabs to view available photos. Click on a photo to see a larger view.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. At the top, there is a navigation bar with a search icon, the text "GLOBE Visualization System v2 BETA Release", and buttons for "Measurements" and "Data Counts". A date selector shows "2013-04-03". On the right, there is a user profile icon and "Sign In" text, and a "My Vis" button.

The main area features a world map with numerous measurement icons (colored squares with a camera icon) placed across various locations. A pop-up window is centered over the map, titled "School: Munising High School" and "Site: Football Practice Field:LCS-01". This window has tabs for "Measurements", "Data Counts", "School Info", "Site Info", and "Photos", with "Photos" currently selected. It includes a "Next Site" indicator showing "2/6".

Inside the "Photos" tab, there are two dropdown menus: "Select Photos:" set to "Site Photos" and "Select Date:" set to "2000-09-11". Below these are three photo thumbnails labeled "West", "East", and "South". The "East" photo is the largest and most prominent, showing a green field with a blue sky and mountains in the background. Navigation arrows are visible on the left and right sides of the photo gallery.

At the bottom left, there is a copyright notice: "© 2010 NAVTEQ © 2017 Microsoft Corporation". At the bottom right, there is a "Legends" button.

Three protocols (Land Cover, Cloud cover and Mosquito Habitat Mapper) have a photo layer that shows sites with photo observations. Click a site to see all of the photos.

The screenshot displays the GLOBE Visualization System interface. At the top, the header includes the GLOBE logo, the text "GLOBE Visualization System", and navigation links for "Measurements" and "Data Counts". A date selector shows "2018-10-03". On the right, there are "Sign In" and "My Vis" buttons. The left sidebar contains a "Protocol Layers" section with a checked "Land Cover Photos" layer. Below this, the "Land Cover Interval" is set to "1 Year". A "Choose sphere to explore protocols" section lists "Atmosphere", "Biosphere", "Hydrosphere", "Pedosphere (Soil) Soil Temperature and Moisture", and "Pedosphere (Soil) Soil Characterization". The main map area shows a world map with numerous small photo thumbnails overlaid on land cover data. The map includes labels for major oceans (Pacific Ocean, Atlantic Ocean, Indian Ocean) and various countries (CANADA, BRAZIL, etc.). A scale bar at the bottom left indicates "2000 km", and a "Legends" button is at the bottom right. A copyright notice at the bottom left reads "© 2018 Microsoft Corporation © 2018 HERE".

Some protocol layers have sub-layers to further filter the data. Tree/Shrub Date of Budburst, for example, can be filtered by species.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

**Protocol Layers**

- Tree/Shrub Date of Budburst
- Greening data are shown for the year on the selected day
- Greenings Species
- All
- European Phenology Campaign
- Oak (Quercus robur)
- Beech (Fagus sylvatica)
- Birch (Betula pendula)
- Hazel (Corylus avellana)
- Small-leaved lime (Tilia cordata)
- Sour cherry (Prunus cerasus)

Choose sphere to explore protocols

- Atmosphere >
- Biosphere >
- Hydrosphere >
- Pedosphere (Soil) >
  - Soil Temperature and Moisture
- Pedosphere (Soil) >
  - Soil Characterization

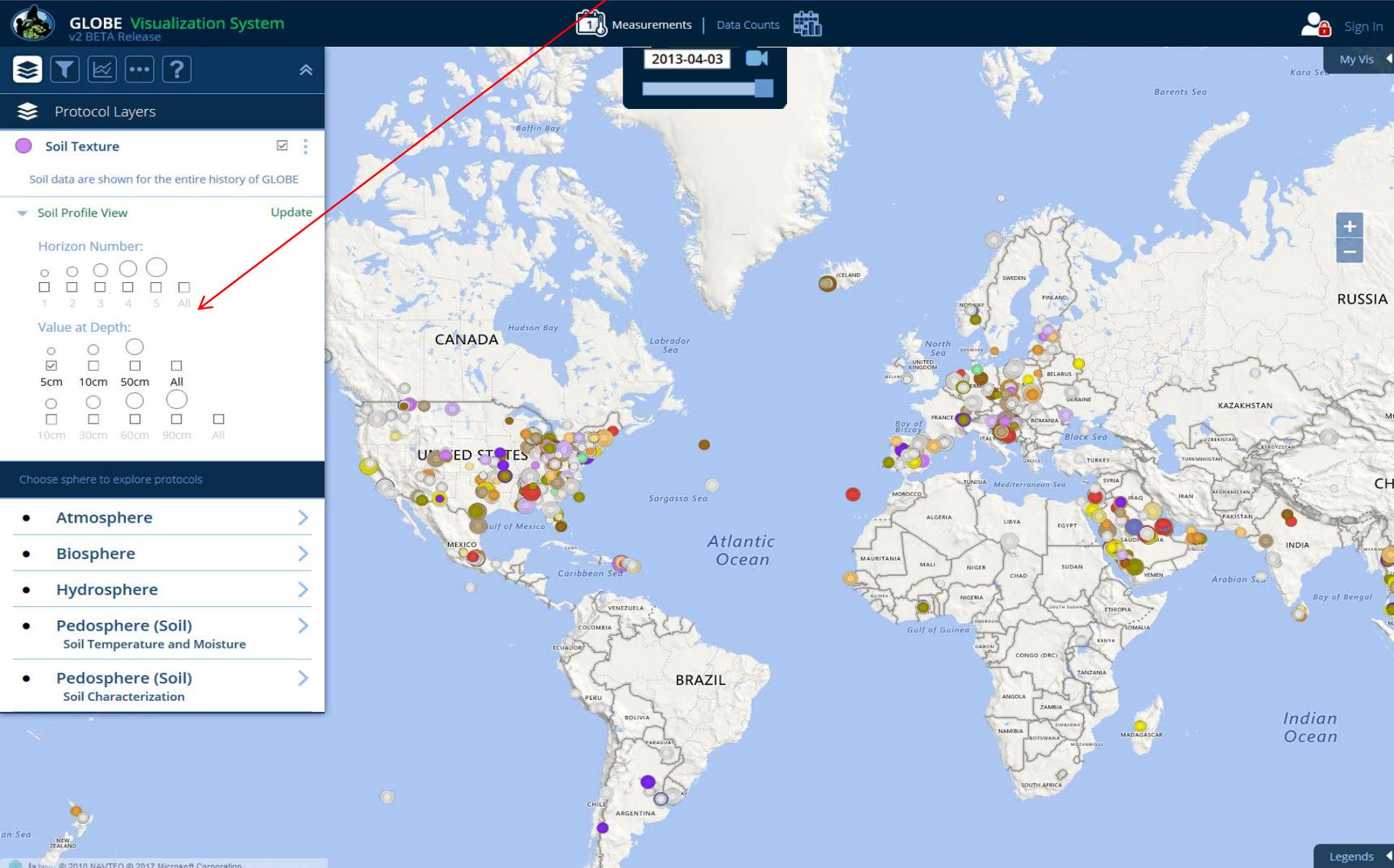
Map labels: CANADA, UNITED STATES, BRAZIL, RUSSIA, KAZAKHSTAN, INDIA, SOUTH AFRICA, etc.

Map features: Baffin Bay, Hudson Bay, Labrador Sea, Atlantic Ocean, Mediterranean Sea, Black Sea, etc.

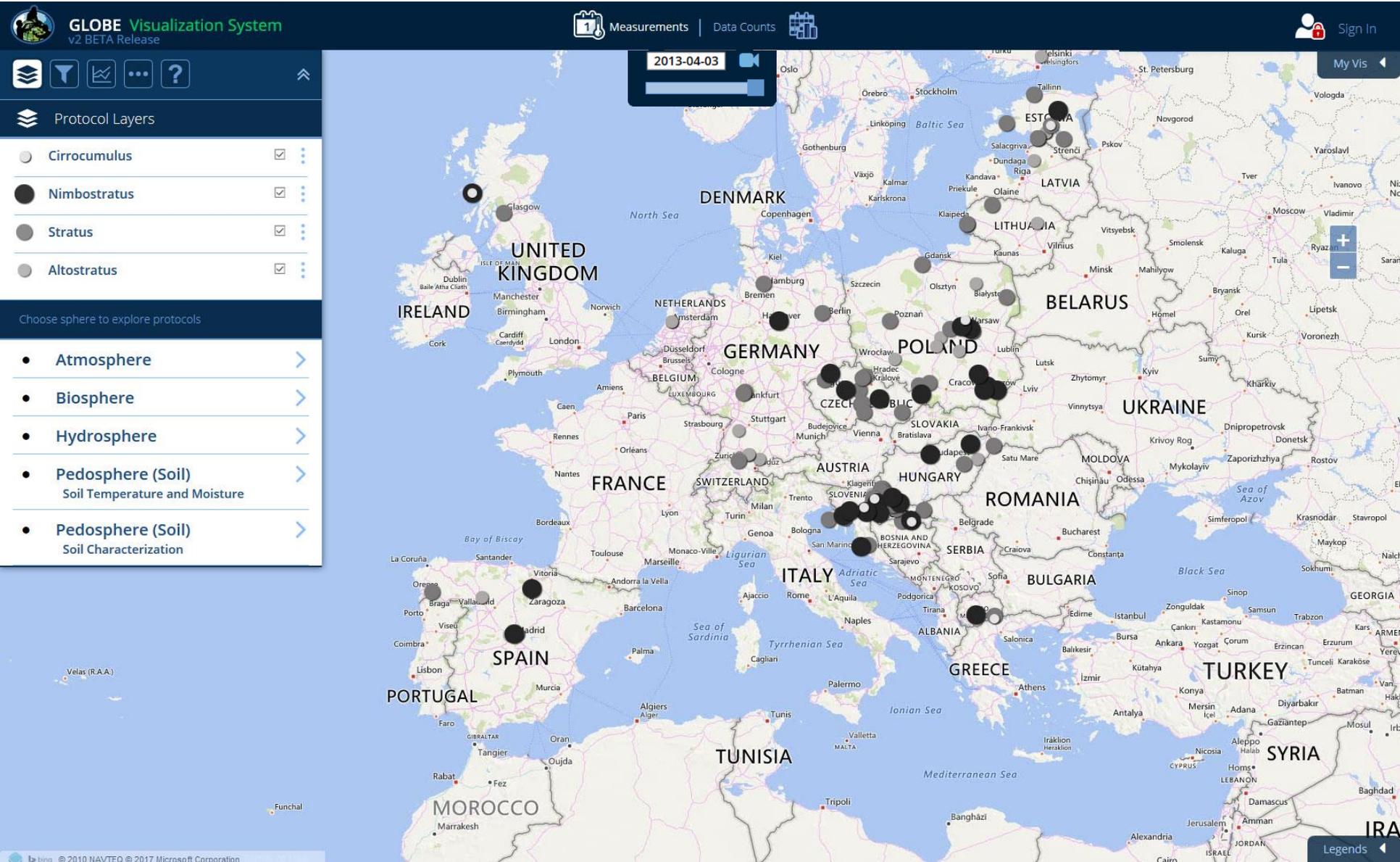
Bottom left: © 2010 NAVTEQ © 2017 Microsoft Corporation

Bottom right: Legends

# Soil characterization layers such as Soil Texture can be filtered by Horizon Number and Value at Depth



Cloud Observations and other measurement types (Soil Properties, etc.) utilizes different layer sizes and colors so one can see up to 5 layers at a single site. Since different Cloud Observations can be made at the same site on the same day, layer icons can be hidden.





On the **Layers** menu, contours of some data sets may be shown by clicking the **Contours** box. The contour opacity can be adjusted by clicking on the opacity link.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

Protocol Layers

- Maximum Daily Temperature  Contours
- Contour Layer Opacity

Choose sphere to explore protocols

- Atmosphere >
- Biosphere >
- Hydrosphere >
- Pedosphere (Soil) >  
Soil Temperature and Moisture
- Pedosphere (Soil) >  
Soil Characterization

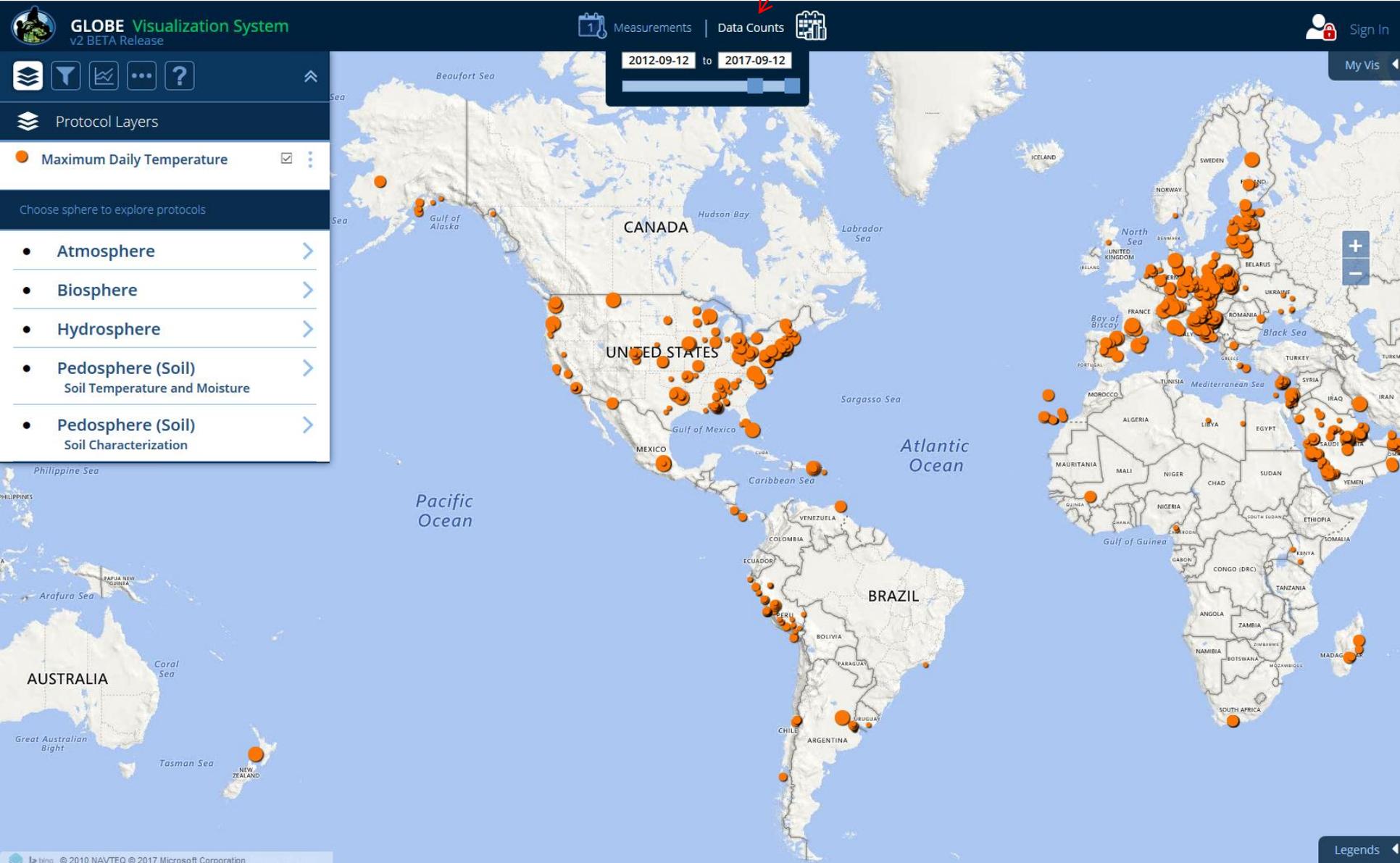
Pacific Ocean

Atlantic Ocean

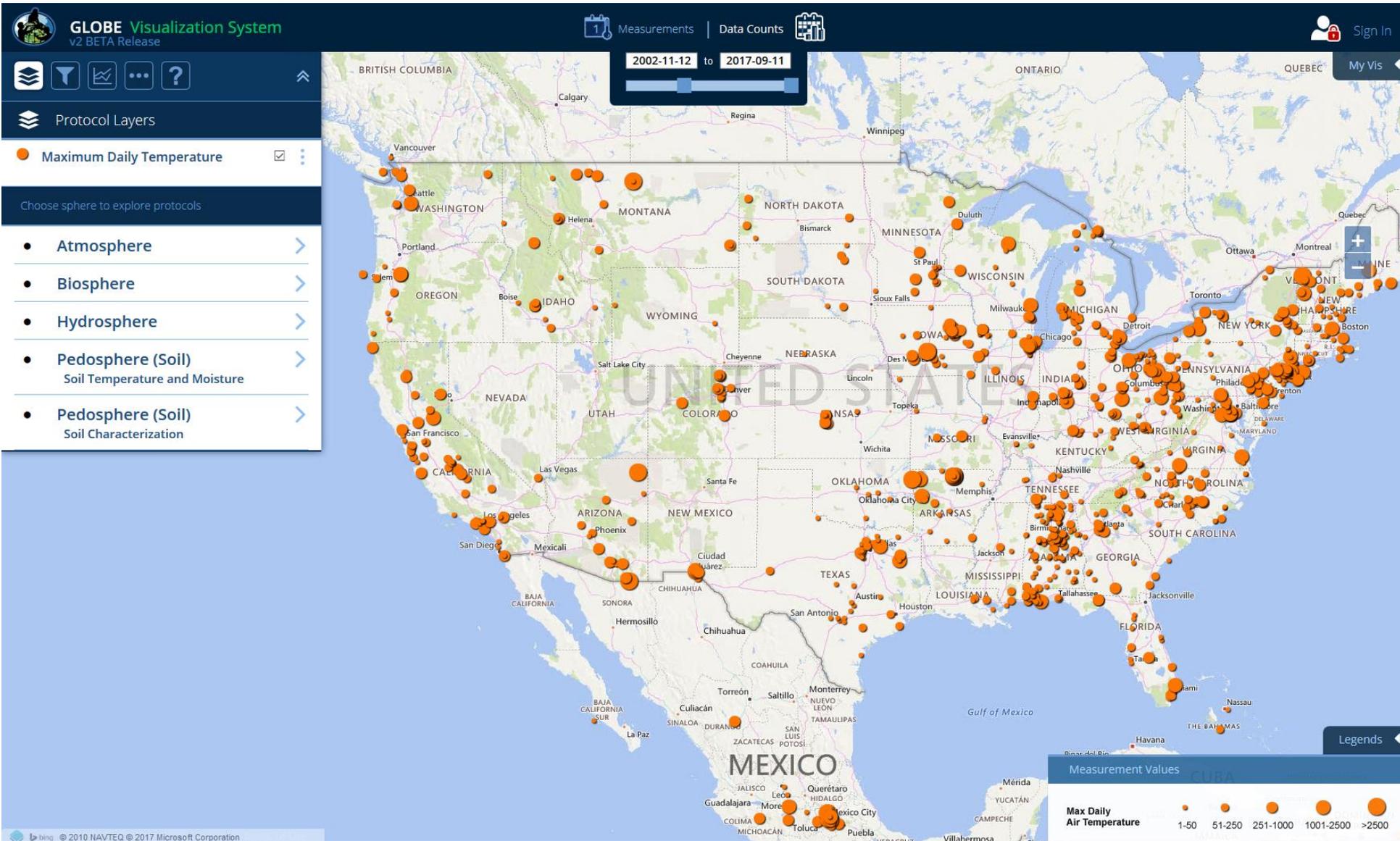
Legends

bing © 2010 NAVTEQ © 2017 Microsoft Corporation

Data can also be viewed by looking at data counts – How many measurements were recorded at a site in a given time frame? Click on ‘Data Counts’ at the top to switch the map view. The default date range is 5 years.



The larger the circle icon, the greater number of measurements reported. These sites offer better possibilities for study in research projects.

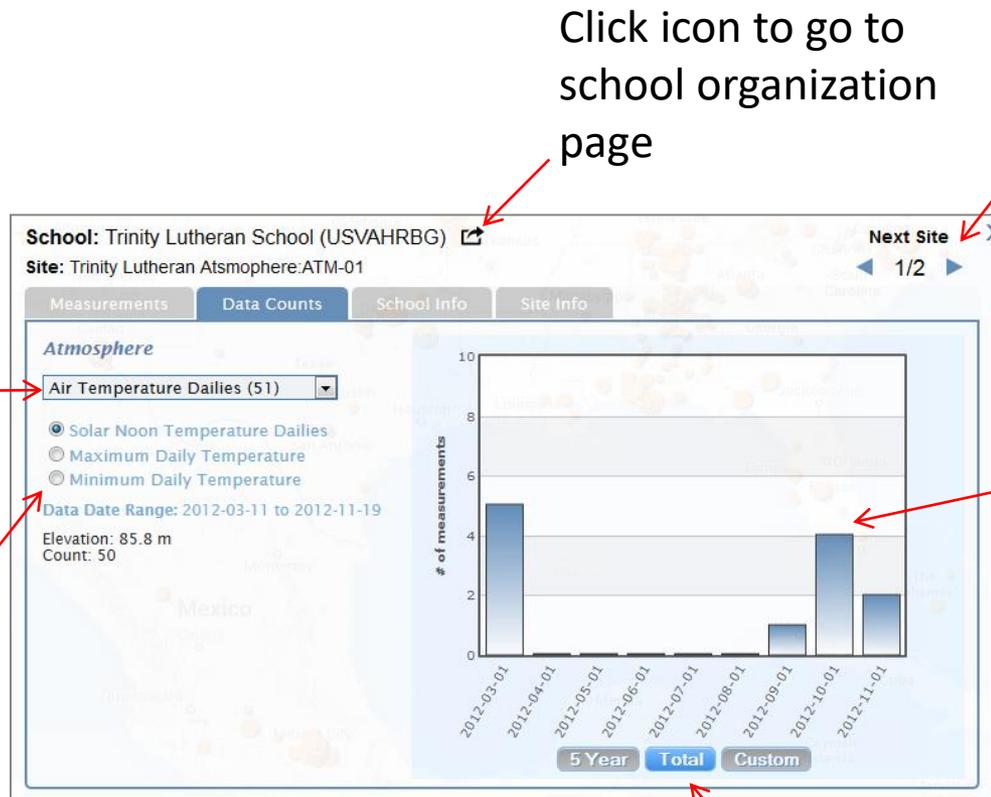


Clicking on an icon on the map opens a site info window. Since the map type is Data Counts, that is the default selection. A plot of the selected data type is displayed showing data counts for the last 5 years for the selected site. You can also select total years or a custom date range.

The screenshot displays the GLOBE Visualization System interface. At the top, there is a navigation bar with the GLOBE logo, the text "GLOBE Visualization System", and a link to the "Classic Version". To the right of the logo are icons for "Measurements" and "Data Counts", with "Data Counts" being the active selection. Further right is a "Sign In" button. Below the navigation bar, a date range selector shows "2002-11-12" to "2017-09-13". The main area is a map of the United States with orange circular markers representing data sites. A site info window is open for "Many Farms High School" (Site: MFHS Ag weather station ATM-02). The window has tabs for "Measurements", "Data Counts" (highlighted with a red box), "School Info", "Site Info", and "Photos". Under the "Data Counts" tab, the "Atmosphere" section is active, with "Air Temperature Dailies" selected in a dropdown menu. Below this are radio buttons for "Solar Noon Temperature Dailies" (selected), "Maximum Daily Temperature", and "Minimum Daily Temperature". The "Data Date Range" is set to "1998-07-04 to 2012-07-31", and the "Elevation" is "1658.0 m" with a "Count" of "2939". A bar chart shows the number of measurements over time, with the y-axis labeled "# of measurements" ranging from 0 to 100. The x-axis shows dates from 1998-07-01 to 2012-07-01. At the bottom of the window, there is a "Quarterly" dropdown menu, a date range selector for "1998-07-04" to "2012-07-31", and "Plot" and "X" buttons (both highlighted with a red box). The bottom of the screen shows a scale bar for 500 km and copyright information: "© 2017 HERE © 2017 Microsoft Corporation".

## Data Counts Site Info Window:

This site info window gives information about the site and is the gateway to creating tables and plots of site data.



Data Type and (total # of measurements)

Datasets (select a dataset to change the plot view )

Click icon to go to school organization page

Cycle through sites whose icons are on top of each other

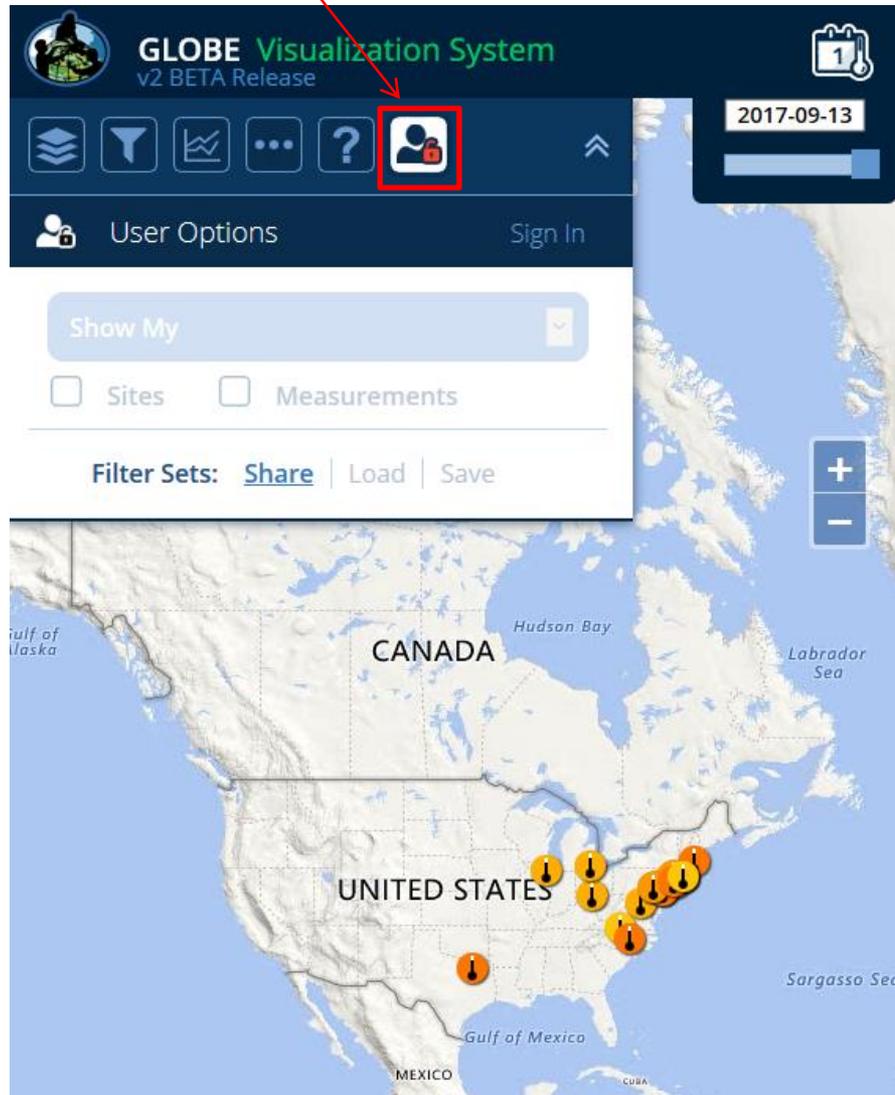
Roll-over bar graph to see the total # of measurements for each interval

Change plot time range

Share your layer and filter parameters with others by sending them a URL. When the URL is entered, the system will load your filter sets automatically. To get the URL, open the 'My Vis' tab and click 'Share'. A popup will appear with the URL.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The main map shows North America with various data points and layers. A date filter is set to 2017-09-13. On the left, the 'Protocol Layers' panel is open, showing 'Air Temperature' selected. On the right, the 'Filter Sets' panel has a 'Share' button highlighted with a red box. A 'My Vis' tab is also highlighted with a red box. A white popup window in the center of the map displays the text 'Share with URL:' followed by the URL <https://visbeta.globe.gov/GLOBE/>. A red arrow points from the 'Share' button to the popup. The bottom of the screen shows the footer with copyright information: '© 2017 HERE © 2017 Microsoft Corporation'.

On your phone and small tablets, click on the My Vis icon in the menu bar to see the share link



If you'd like to save your filter sets, log-in using your GLOBE.gov username and password



**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

2013-04-03

Show My  
 Sites  Measurements

Filter Sets: [Share](#) | [Load](#) | [Save](#)

My Vis

- **Atmosphere**
- **Biosphere**
- **Hydrosphere**
- **Pedosphere (Soil)**  
Soil Temperature and Moisture
- **Pedosphere (Soil)**  
Soil Characterization

Protocol Layers

Air Temperature  Contours

Contour Layer Opacity

Choose sphere to explore protocols

bing © 2017 HERE © 2017 Microsoft Corporation

Once logged-in, click 'Save' to save your current filters. Enter a filter name and submit.

**GLOBE Visualization System**  
v2. BETA Release

Measurements | Data Counts

Welcome Cornell Lewis | Sign Out

2017-09-13

Show My  
 Sites  Measurements

Filter Sets: [Share](#) [Load](#) [Save](#)

Save Current Filter Settings

Enter a Filter Set Name, then click 'Save Filter Set'

U.S. Air Temperature - 2017/09/13

Save Filter Set

© 2010 NAVTEQ © 2017 Microsoft Corporation

To load a filter set, click the 'Load' link.

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. At the top left, the logo and version information are shown. The top navigation bar includes 'Measurements' and 'Data Counts' links. A date selector shows '2013-04-03'. On the right, a user profile for 'Cornell Lewis' is visible with a 'Sign Out' link. A red arrow points from the text above to the 'Load' link in the 'Filter Sets' menu.

The left sidebar contains a 'Protocol Layers' section with a list of protocols:

- Maximum Daily Temperature  Contours
- Contour Layer Opacity
- Choose sphere to explore protocols
- Atmosphere >
- Biosphere >
- Hydrosphere >
- Pedosphere (Soil) >  
Soil Temperature and Moisture
- Pedosphere (Soil) >  
Soil Characterization

The main map area shows a world map with several orange measurement location markers. The 'Filter Sets' menu is open, showing options: [Share](#), [Load](#) (highlighted with a red box), and [Save](#). The 'Show My' dropdown is set to 'Sites', and 'Measurements' is also visible. The map includes labels for major oceans (Pacific, Atlantic, Indian, Arctic) and continents (North America, South America, Europe, Africa, Asia, Australia).

A pop-up window will display where you can load, edit, delete and copy the URL of the saved filter set

The screenshot displays the GLOBE Visualization System v2 BETA Release interface. The top navigation bar includes 'Measurements' and 'Data Counts' icons, and a user profile for 'Cornell Lewis' with a 'Sign Out' link. The main content area is a 'Saved Filter Sets' modal window. It features a 'Load' button, a title 'U.S. Air Temperature - 2017/09/13' with an 'edit' link, and a text input field containing the URL: `https://visbeta.globe.gov/GLOBE/?load_filter=232136227147442476`. Below the URL, there is a 'delete' link. The filter details are listed as follows:

- Map Type:** Measurements
- Protocol:** Air Temperature Measurements
- Places:** Within 0km of United States
- Observer:** null
- Date:** 2017-09-13
- Elevation Range:** -5475m to 7051m

The interface also shows a left sidebar with 'Protocol Layers' and 'Maximum Daily Temperature' options, and a bottom sidebar with a map of Australia and a 'Legends' section. The right sidebar shows a map of Europe and Africa with measurement locations marked by colored pins.

When logged-in, you can display just the sites where you have entered data. On the My Vis tab, click the 'Sites' checkbox and make sure 'Show My' is selected in the drop down menu. All of your sites will be identified with a red circle on the map. Changing the drop down to 'Show My Organization's' will display all sites where anyone is your organization(s) has entered data.

**GLOBE Visualization System**  
v2 BETA Release

Measurements | Data Counts

Welcome Cornell Lewis Sign Out

2013-04-03

Show My  
 Sites  Measurements

Filter Sets: Share Load Save

My Vis

Getting Started:  
Three steps to visualizing your data:

1. Select the protocol data you would like to visualize.
2. Select the date
3. Click a measurement to retrieve the data

[See a 20 second demonstration](#)  
[See a quick demonstration of additional features](#)  
[Download full tutorial](#)

Don't Show Again

Pacific Ocean Atlantic Ocean

CANADA UNITED STATES MEXICO BRAZIL

Beaufort Sea Gulf of Alaska Hudson Bay Labrador Sea Gulf of Mexico Caribbean Sea Sargasso Sea North Sea Bay of Biscay Mediterranean Sea Gulf of Guinea

AUSTRALIA

© 2010 NAVTEQ © 2017 Microsoft Corporation

To see just your sites that have measurements of the active protocol layer(s) for the current map date, click the 'Measurements' check box on the My Vis tab. In the example below, only the user's cloud cover measurements are shown on the map.

The screenshot displays the GLOBE Visualization System interface. At the top, the GLOBE logo and 'Visualization System' text are visible, along with navigation icons for 'Measurements' (showing '1') and 'Data Counts'. A date selector shows '2013-04-03'. On the right, a user profile for 'Cornell Lewis' is shown with a 'Sign Out' link. The left sidebar contains a 'Protocol Layers' menu with 'Cloud Cover' selected and highlighted with a red box. Below this is a list of protocol categories: Atmosphere, Biosphere, Hydrosphere, Pedosphere (Soil) - Soil Temperature and Moisture, and Pedosphere (Soil) - Soil Characterization. The main map area shows a geographical view of California with various cities and landmarks. A blue dot representing a measurement is located near Los Angeles and is highlighted with a red box. In the top right, a 'Show My' dropdown menu has 'Measurements' selected and highlighted with a red box, while 'Sites' is unselected. Below this are 'Filter Sets' options: 'Share', 'Load', and 'Save'. The bottom left corner shows a scale bar for 50 km and copyright information for Bing, HERE, and Microsoft Corporation. The bottom right corner has a 'Legends' button.

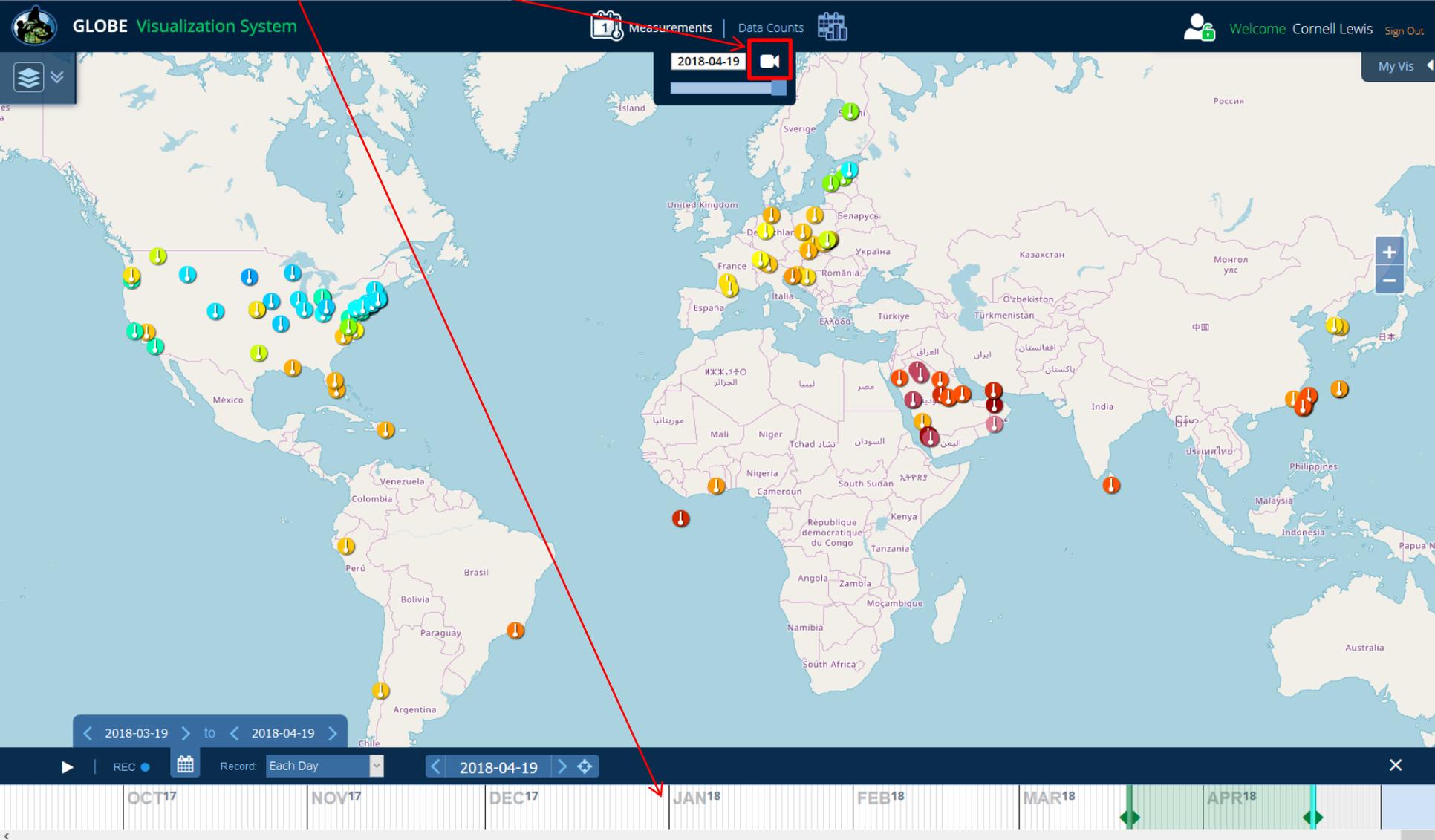
Under the 'More' menu are additional options – Base maps, language selector (English and Spanish, with more to come), map grid and a lat/long cursor position.

The screenshot displays the GLOBE Visualization System interface. At the top left, the logo and text "GLOBE Visualization System" are visible, along with a link to the "Classic Version". The top navigation bar includes "Measurements" and "Data Counts" sections. On the right, a user profile for "Cornell Lewis" is shown with a "Sign Out" option. The main map area shows a satellite view of the world with a red dashed grid overlay. A date selector at the top center is set to "2016-08-25". A "More Options" menu is open on the left side, containing the following sections:

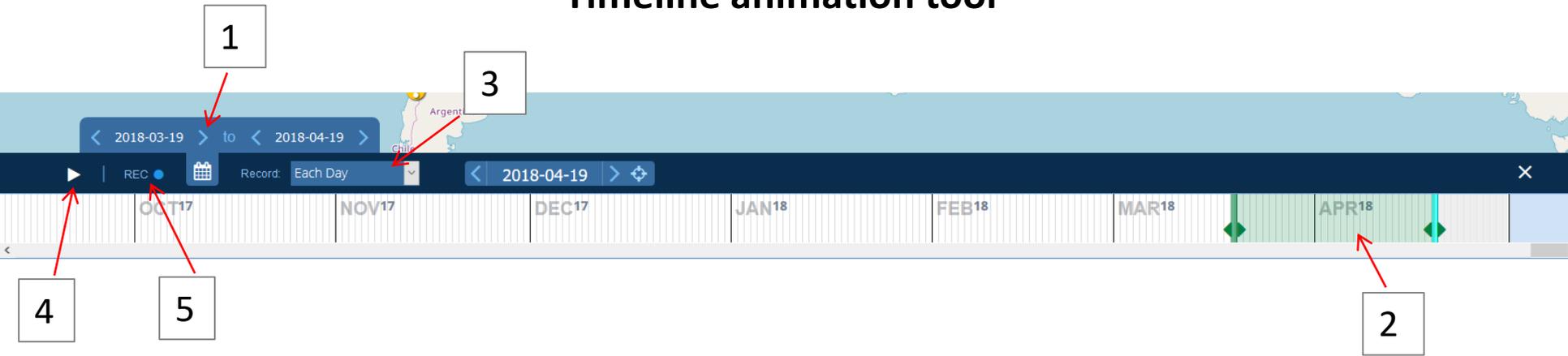
- Choose Base Map**
  - Streets
  - Satellite
  - Hybrid
- NASA Satellite Data Options**
  - Corrected Reflectance – True Color (Terra)
  - Earth at Night (Suomi NPP)
- Language**: A dropdown menu is set to "English", with a note "Powered by Google Translate".
- Turn on Map Grid
- Lat: 35.902670°, Lon: -75.769841°

At the bottom left, there is a scale bar for "1000 km". At the bottom right, a "Legends" button is visible. The bottom of the screen shows a copyright notice: "Earthstar Geographics, SID © 2017 Microsoft".

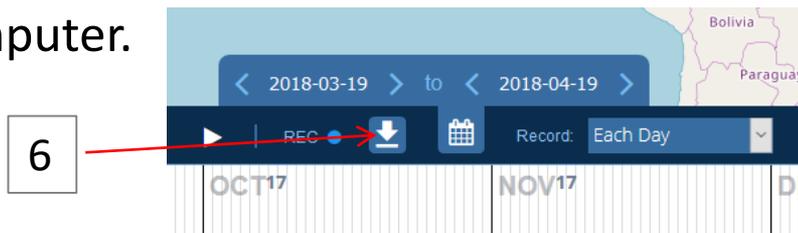
Want to see your measurements over time? Click on the movie icon to open the timeline animation tool



# Timeline animation tool



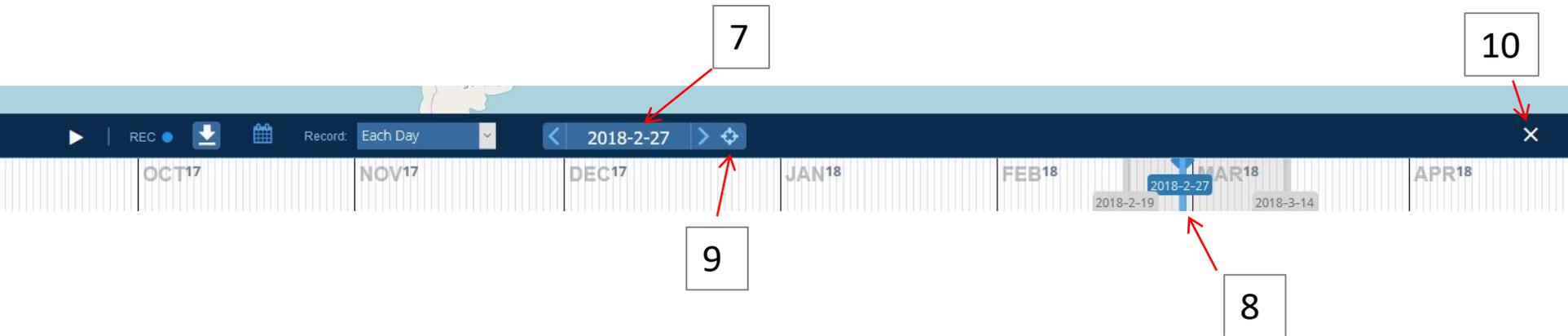
1. Select a date range (make sure you have already added the desired protocol layers). Click a date to open the calendar interface.
2. You can also select a date range by moving the date range slider on the timeline.
3. Determine the time interval (each day, 1 day per month or 1 day per year).
4. Press the play button to preview the animation.
5. Press record to create an animation to save to a file.
6. Once recorded, press the download icon to save an animated gif to your computer.



# Timeline animation tool – sample animated gif file



## Timeline animation tool - continue



7. Change the current map date by clicking the arrows to go to the next or previous day or click the current day to open a calendar interface.
8. You can also change the map date by adjusting the current date slider bar on the timeline (to see the current date slider bar, click the calendar icon  to close the date range selector).
9. Click the center icon to re-center the map date to the center of the timeline.
10. Press X to close the timeline.

# Your Assignment

---

1. On April 7, 2004, how many schools in the Czech Republic reported a water pH reading less than 5?
2. Which measurement technique did the school(s) use?
3. What was the range of pH values reported for this site in 2003 and 2004?
4. Pick one Czech school with a pH value less than 5 and another nearby school reporting water pH on April 7, 2004 and plot the data from the two schools for January to May 2004. What does the graph illustrate?
5. Which school in Poland has reported the most water pH data?
6. Plot water pH, conductivity, and alkalinity for this site for January to May 2004. What does this graph illustrate?



# Answers

---

1. One (Filtered by Czech Republic using the place filter and date and then used the 'View Table Layer' tool).
2. Paper (Clicked on the site on the map, it's the lightest color icon. Value found in site info window).
3. 3 – 6 pH units in 2003, 3-6.5 in 2004 (Opened the site information window and clicked on the 'View data table' icon to view the data table. Then selected the data date range from Jan-Dec 2003 and then for 2004).
4. The pH level for the school with the higher pH level on April 7<sup>th</sup> on was consistently higher from Jan to May
5. [XI Liceum St. Konarskiego in Wrocław](#) (Filtered by Poland, switched to Data Counts map. It has the largest circle)
6. The pH remains fairly constant despite significant changes in alkalinity and conductivity (Added each dataset to the plot list by selecting each one in the site info window)

