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## My NASA Data - GLOBE Connections

### Hydrosphere GLOBE Protocol eTraining Modules

The Hydrosphere is the water component of our planet, and includes liquid water, ice and vapor. Changing any part of the Earth system, such as the amount or type of vegetation in a region or from natural land cover to an impervious one, can affect the rest of the system, and water plays a role in many of these changes. Rain and snow capture aerosols from the air. Acidic water slowly dissolves rocks, placing dissolved solids in water. Dissolved or suspended impurities determine water's chemical composition. Water is a good solvent and participates in many of the chemical reactions that take place in the Earth system. Scientific measurement programs in many areas of the world cover only a few water bodies a few times during the year, so GLOBE students provide valuable data to help fill these gaps and improve our understanding of Earth's natural waters. Students and scientists investigate hydrology through the collection of data using measurement protocols and using instruments which meet certain specifications in order to ensure that data are comparable. The [training slides](#) in this section will introduce you to the measurement protocols for the various hydrosphere protocols in GLOBE. [Hydrosphere Protocol eTraining Modules](#)

#### **Mosquito Larvae using the [GLOBE Observer Mosquito Mapper App](#)**

Learn how to collect, sort, identify and count the number of mosquito larvae, and determine whether your specimens represent taxa that potentially transmit disease. Support community health initiatives by eradicating breeding sites in containers in your community. You will learn how to report your data to the GLOBE website and visualize data using GLOBE's Visualization System.

#### **Water Temperature**

Learn how to take water temperature measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Water Temperature Protocol. After completing this module, you will be able to define water temperature and explain how changing environmental conditions will result in different measurements. You will learn the procedure for measuring water temperature. You will know how to upload your data to GLOBE and be able to visualize water temperature data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Water Temperature Protocol](#))

#### **Water Transparency**

Learn how to take water transparency measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Water Transparency Protocol. After completing this module, you will be able to define water transparency and explain how changing environmental conditions will result in different measurements. You will learn the procedure for measuring water transparency. You will know how to upload your data to GLOBE and be able to visualize water

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transparency data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Water Transparency Protocol](#))

### **Electrical Conductivity**

Learn how to take electrical conductivity measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Electrical Conductivity Protocol. After completing this module, you will be able to define electrical conductivity and explain how changing environmental conditions will result in different measurements. You will learn the procedure for collecting electrical conductivity measurements using a meter or a probe. You will know how to upload your data to GLOBE and be able to visualize electrical conductivity data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Electrical Conductivity Protocol](#))

### **Water pH**

Learn how to take water pH measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the water pH Protocol. After completing this module, you will be able to define water pH and explain how changing environmental conditions will result in different measurements. You will learn the procedure for collecting pH data. You will know how to upload your data to GLOBE and be able to visualize pH data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Water pH Protocol](#))

### **Alkalinity**

Learn how to take alkalinity measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Alkalinity Protocol. After completing this module, you will be able to define water alkalinity and explain how environmental conditions affect the alkalinity of a water body. You will learn the procedure for conducting alkalinity measurements using a test kit. You will know how to upload your data to GLOBE and be able to visualize alkalinity data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Alkalinity Protocol](#))

### **Dissolved Oxygen**

Learn how to take dissolved oxygen measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Dissolved Oxygen Protocol. After completing this module, you will be able to define dissolved oxygen and explain how changing environmental conditions will result in different measurements. You will learn the procedure for collecting dissolved oxygen measurements. You will know how to upload your data to GLOBE and be able to visualize dissolved oxygen data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Dissolved Oxygen Protocol](#))

### **Salinity**

Learn how to take salinity measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Salinity Protocol. After completing this module, you will be able to define water salinity and explain how changing environmental conditions will result in different measurements. You will learn the procedure for measuring water salinity. You will know how to upload your data to GLOBE and be able to visualize water salinity data submitted from around the world using GLOBE's Visualization System. ([Access pdf of the Salinity Protocol](#))

### **Nitrates**

Learn how to take nitrate measurements at your GLOBE hydrosphere study site. This module provides a step by step introduction of the Nitrate Protocol. After completing this module, you will be able to define water nitrates and explain how changing environmental conditions will result in different measurements. You will learn the procedure for collecting nitrate data using a commercial test kit.

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You will know how to upload your data to GLOBE and be able to visualize nitrate data submitted from around the world using GLOBE's Visualization System. ([Access pdf of Nitrates Protocol](#))

## Sphere(s)

- [Hydrosphere](#)

## Phenomenon

- [El Nino Southern Oscillation](#)
- [Sea Level Rise](#)

## Related Links

- [Hydrosphere GLOBE Protocol eTraining Modules](#)
- [GLOBE Observer](#)
- [pdf of Water Temperature Protocol](#)
- [pdf of Water Transparency Protocol](#)
- [pdf of Electrical Conductivity Protocol](#)
- [pdf of Water pH Protocol](#)
- [pdf of Alkalinity Protocol](#)
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