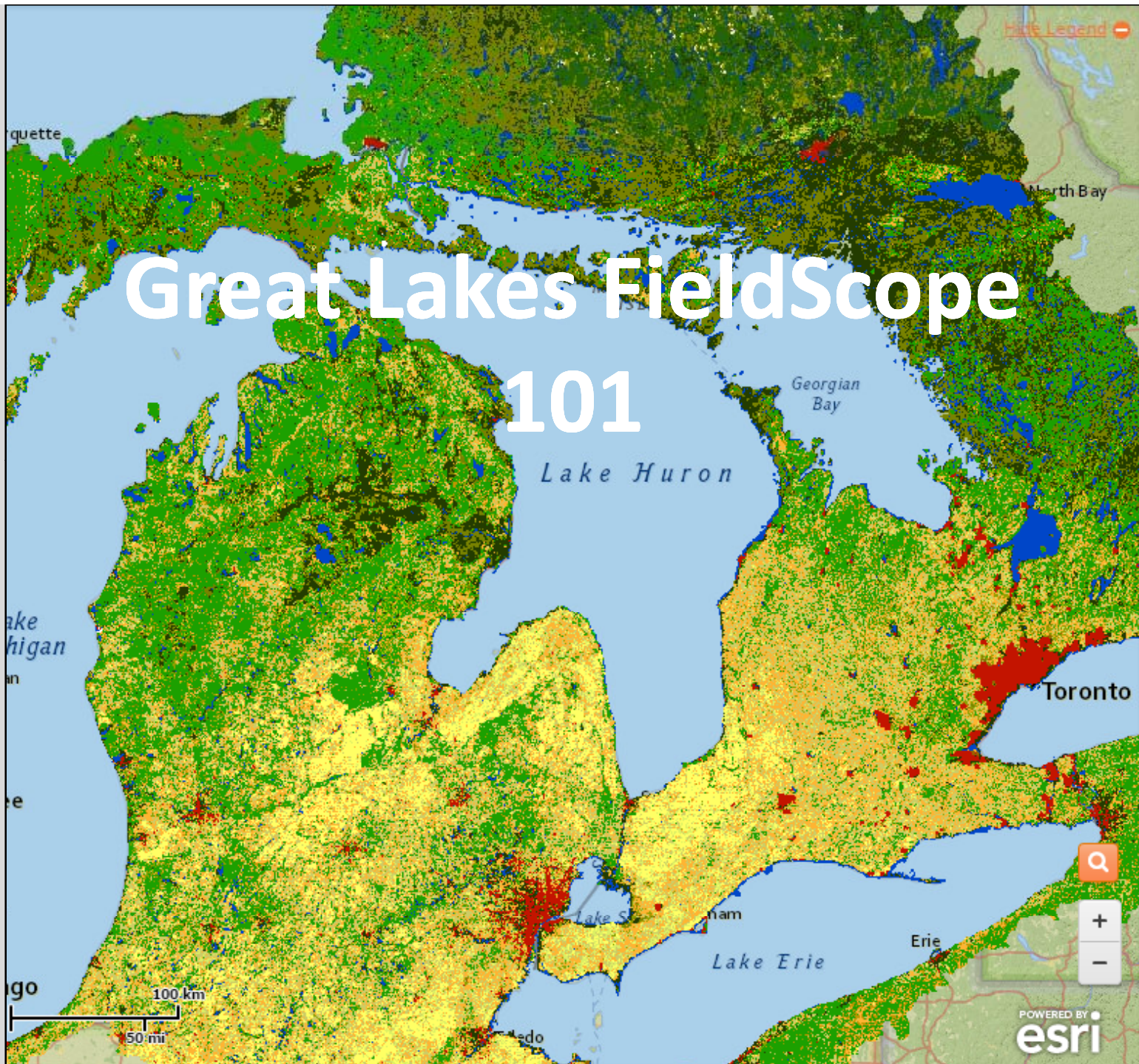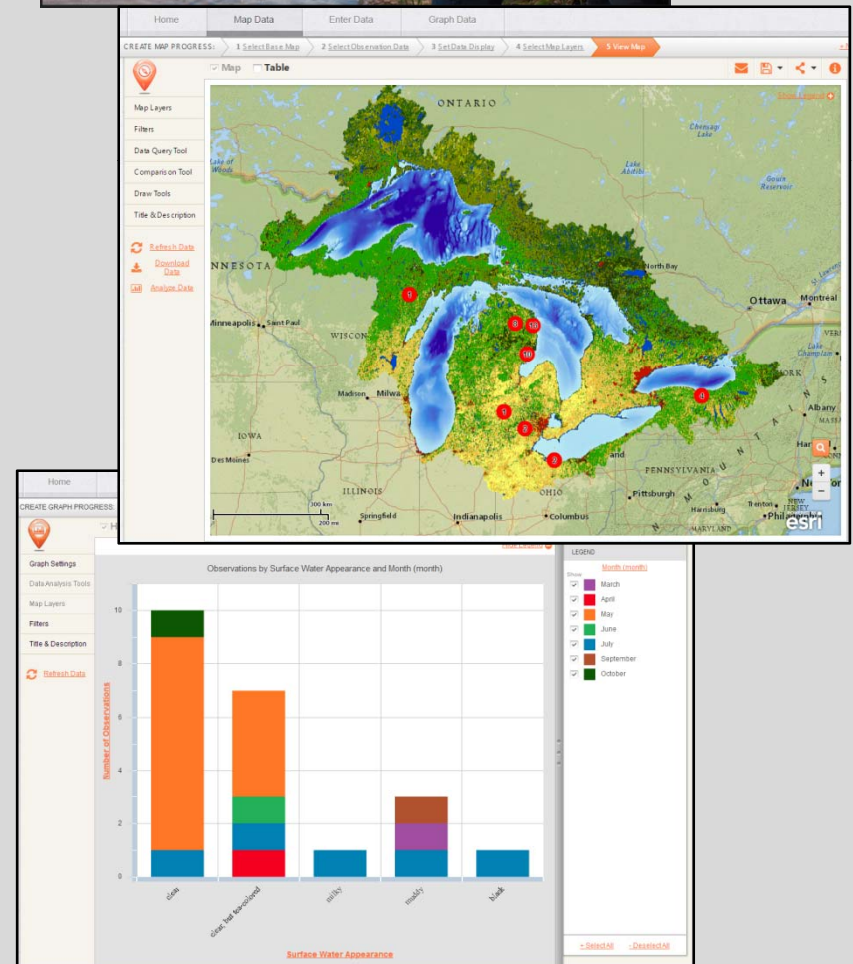# Where would the water go?

- Collaborative effort of Michigan Sea Grant, National Geographic Education, the Great Lakes Observing System and the USGS Great Lakes Science Center

- Web-based interactive mapping and graphing tool
  - Free
  - No software installation

- Explore, share and analyze real-world water quality data
  - Students and professional scientists

- Use at your computer and outside in the field

- Study topics like spawning areas, wetlands and sediment contamination

- Over 3,000 participants over the last year

Home	Map Data	Enter Data	Graph Data

Welcome to Great Lakes FieldScope

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What would you like to do?

MAP DATA	ENTER DATA	GRAPH DATA	HELP

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http://greatlakes.fieldscope.org/

Upcoming Events

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There are no scheduled events.

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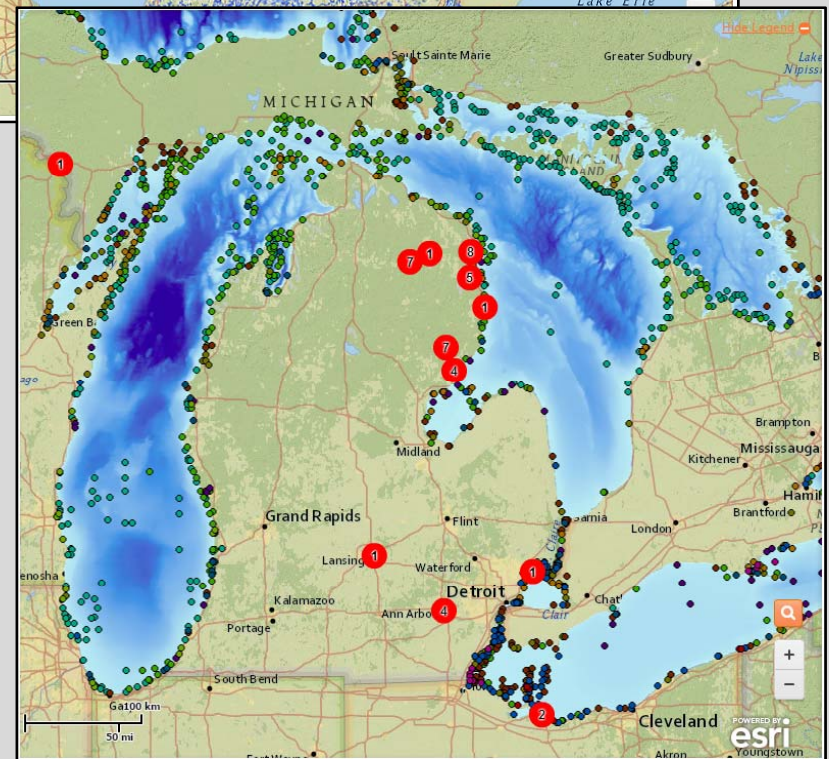
There's an App for That
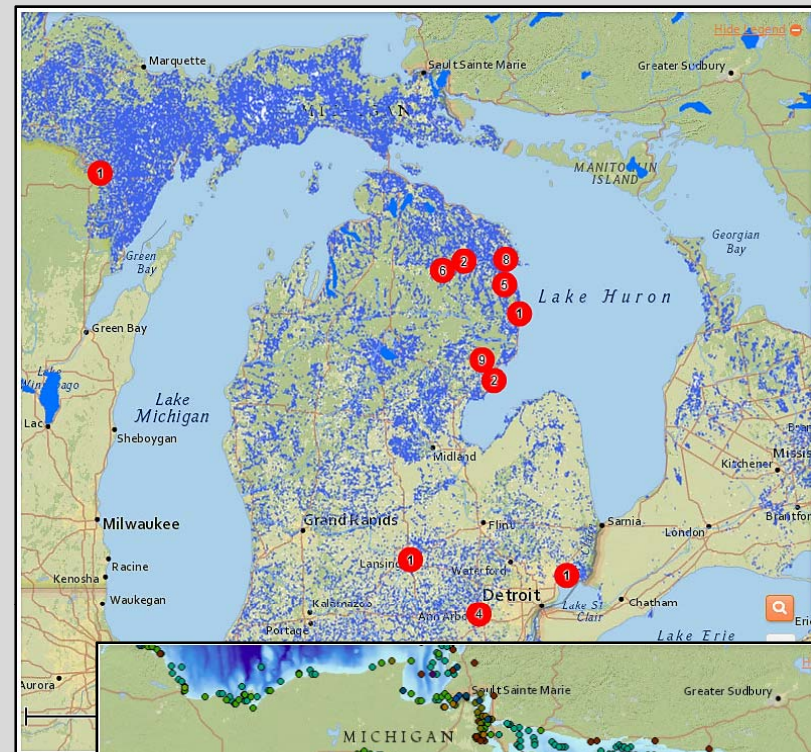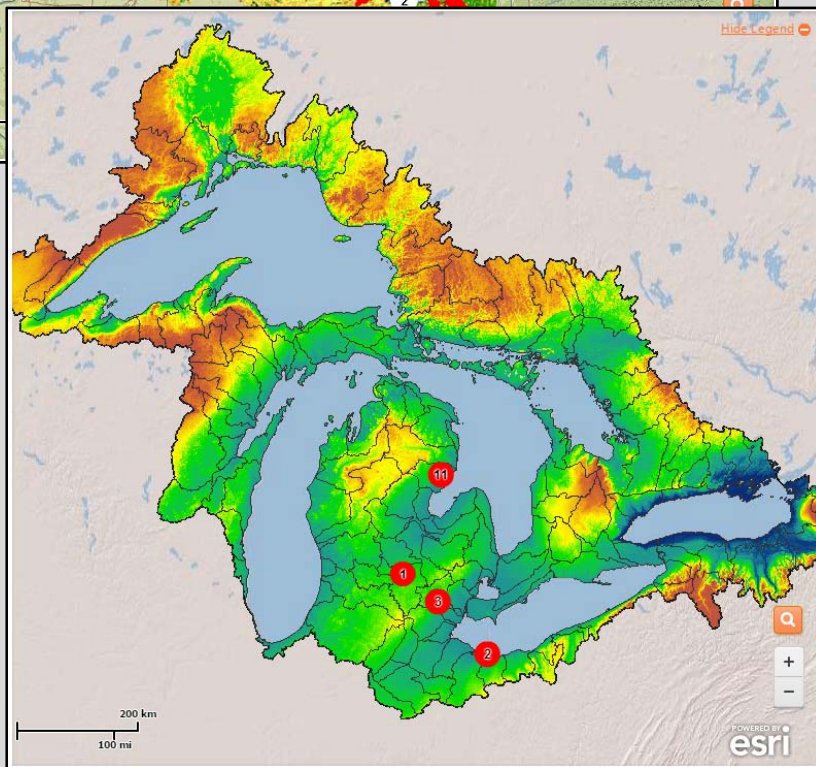
- Check out the smartphone app to collect data on-the-go using mobile devices:
- iPhone
- Android

| Home | Map Data | Enter Data | Graph Data |

CREATE MAP PROGRESS: **1 Select Base Map** | 2 Select Observation Data | 3 Set Data Display | 4 Select Map Layers | 5 V

Select the basemap you would like to use   ? Learn More

+
−

- Satellite w/ Labels
- Topographic
- Shaded Relief
- Satellite

- Gray
- Oceans
- Street Map
- National Geographic

Previous   NEXT ›

CREATE MAP PROGRESS: 1 Select Base Map | 2 Select Observation Data | 3 Set Data Dis | + N

Select and filter the observation data sources for your map

Data Sources

☑ Participant Water Quality Data ❓

Data Filter Options

Filter by value
Filter by value to select and display data on the variables you are interested in.

Filter by area
Filter by a predefined geographic area, or an area you define.

Filter by date
Filter by date to modify the temporal range of the data you are working with.

Filter by observer
Filter by observer to select only data from a certain organization or user.

Filter by value

Data Variable: Air Temperature ▼ ❓

Include Items In Range:

-10 ——————————————————— 45 degC

Filter by area

Data Query Tool | Tools | Shape History

Filter Name:

✏️ Query by drawing shape ❓
✏️ Query by drawing circle ❓
✏️ Query by upstream area ❓

Filter by date

Include Items:

☑ After: 2013-07-23 📅

Filter by observer

Filter By: Organization ▼ ❓

❓

Search for value... | ✖ Clear All

ACES Academy
Atlanta Community schools
Au Gres-Sims Elementary School
JMU
Michigan Sea Grant
Michigan Sea Grant Extension

→
←

Michigan Sea Grant

Filter Name: Organization in {} ❓

Cancel | Add

Previous

NEXT ▶

CREATE MAP PROGRESS: | 1 Select Base Map | 2 Select Observation Data | **3 Set Data Display** | 4 Select Map Layers | 5 View Map | +N

Select how the data will be displayed on the map

Learn More

Observation Display Options

Display Observations Using: Red Dots

Display Count As:
○ None ○ Number of Stations ● Number of Observations

☐ Display Observation Photos

Displayed Variables

Available Variables:

Search for variable name...

Station ID
Latitude
Longitude
Observation ID
Day of Year

Selected Variables (62):

✖ Clear All

Station Name
Data Source
Observation Date
Observation Time
Notes

BASE MAP:

📍 National Geographic Base Map
This map is designed to be used as a general reference map. It was developed by National Geo...

DATA INFORMATION:

Number of Stations: **163**
Number of Observations: **16424**
Data Sources: **Participant Water Quality Data**

FILTER LIST:

Match: ● Any selected filter ○ All selected filters

Active	Filter Name (double-click to edit)	Delete

Previous

NEXT ›

Map Layer Options:

- Areas of Concern

- Fish Spawning

- Beneficial Use Impairments

- Detroit River Sediment Contamination

- Lakes and Streams

- Watershed Boundaries

- Wetlands

- Elevation

- Land Cover

- Bathymetry

Home   Ma____   Enter Data   Graph Data

☑ Map

Map Layers

Filters

Data Query Tool

Comparison Tool

Draw Tools

Title & Description

⟳ Refresh Data

⬇ Download Data

📊 Analyze Data

SELECT COMPARISON MODE: ✕

Compare:

Bathymetry ▾ To: Spawning Areas ▾

○ Swipe   ❓
○ Fade   ❓
○ Subtraction ❓

Cancel   Save

ONTARIO

Show Legend ⊕

Chensagi Lake

Lake Abitibi

Gouin Reservoir

Lake of the Woods

North Bay

St. Lawrence

Ottawa   Montréal

VER____

Lake Champlain

MINNESOTA

Minnea____

8 13
10

1
2
2

Albany
MASSA____

4

____ORK

Des Moines

ILLINOIS

300 km
200 mi

Springfield   Indianapolis   Columbus   OHIO   and   PENNSYLVANIA   Pittsburgh   Harrisburg   Trenton   NEW JERSEY   Philadelphia

Har____
CONN

Ft

MARYLAND

esri

Home	Map Data	Enter Data	Graph Data

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🌐 MAP DATA	🖉 ENTER DATA	📊 GRAPH DATA	❓ HELP

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ENTER DATA PROGRESS: 1 Select Station   2 Enter Observations

Enter new observations or edit existing observations   ? Learn More

Observation ID: 5443751

Observation Date: 2014-08-07 📅

∨ Atmospheric

Relative Humidity: [   ]   %   ▼

Barometric Pressure: [   ]   hPa   ▼

Air Temperature: [   ]   °C   ▼

∨ Physical

Water Temperature: [   ]   °C   ▼

Turbidity: [   ]   NTU   ▼

Secchi Depth: [   ]   cm   ▼

Stream Width: [   ]   m   ▼

Stream Depth: [   ]   m   ▼

Stream Discharge: [   ]   ft³/sec ▼

Surface Water Appearance: [clear, but tea-colored   ]   ▼

Stream Bank Eroision: [20% - 49% Moderate   ]   ▼

∨ Chemical

Salinity: [   ]   PPT   ▼

Previous   + New Observation   Save
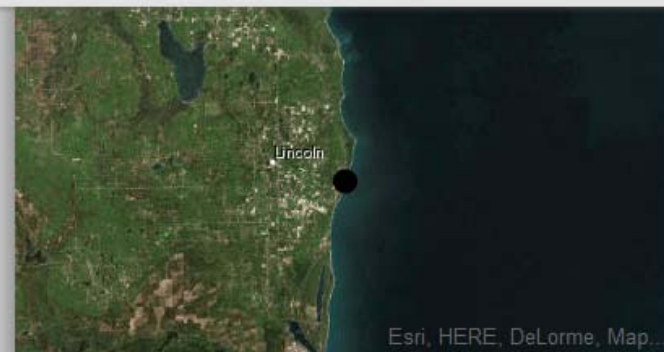
Station Name: Harrisville Harbor

Observations
Click date to view observation details

Observation Date	Flag
2014-08-07	☐

Esri, HERE, DeLorme, Map...

Browse and select the CSV file of each file type.

FieldScope allows users to upload collected data in bulk, rather than doing each entry individually. If you are adding observation data from stations new to the project, you should create and upload two spreadsheets (CSV files) following the specifications below. Otherwise observations and stations can be uploaded separately, as long as your observation data reference Station IDs that already exist in the project.

Stations file:

[Select a file] ❓
File size limit: 2 GB

If you are only uploading observations, leave stations file name blank.

Observations file:

[Select a file] ❓
File size limit: 2 GB

If you are only uploading stations, leave observations file name blank.

CSV **Learn About the CSV Format**

Bulk uploading can be a faster and more convenient way of entering your data. To successfully upload your information, you must carefully follow the format.

Please read the file specifications before attempting to upload your data.

[Download the Specifications]

Uploading a Single Observation?

Use the data entry wizard instead >>

⚠ Tips for uploading observations

1. Carefully read the Bulk Upload Specifications before uploading your data.
2. Both files must include Station ID information.
3. The top row of each file should be column names, not observation data.
4. You will have a chance to review your data before the upload is finalized.

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| Home | Map Data | Enter Data | Graph Data |

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Oxygen in the Water and Sensitive Water Bugs in NE Michigan

Correlation (r): 0.813
Best Fit: y = (x - 4.20) * 9.51 + 29.80
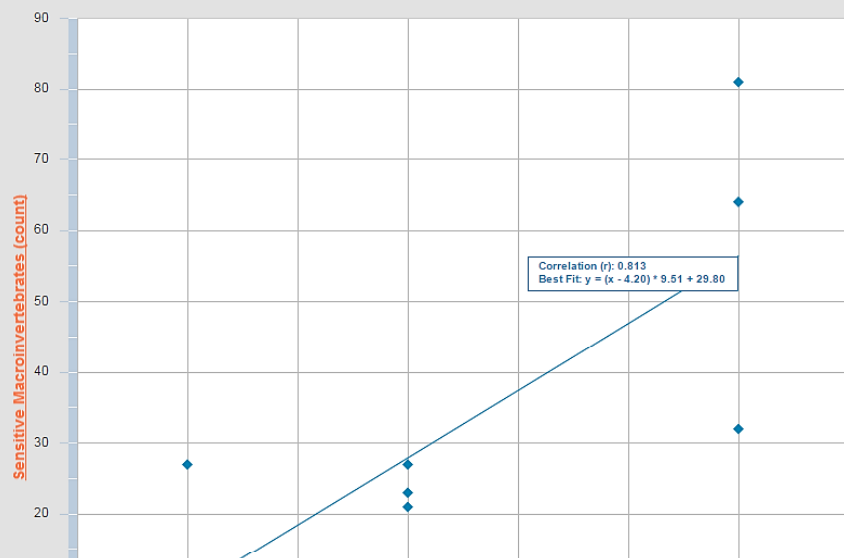
Seasonal Surface Water Temperature
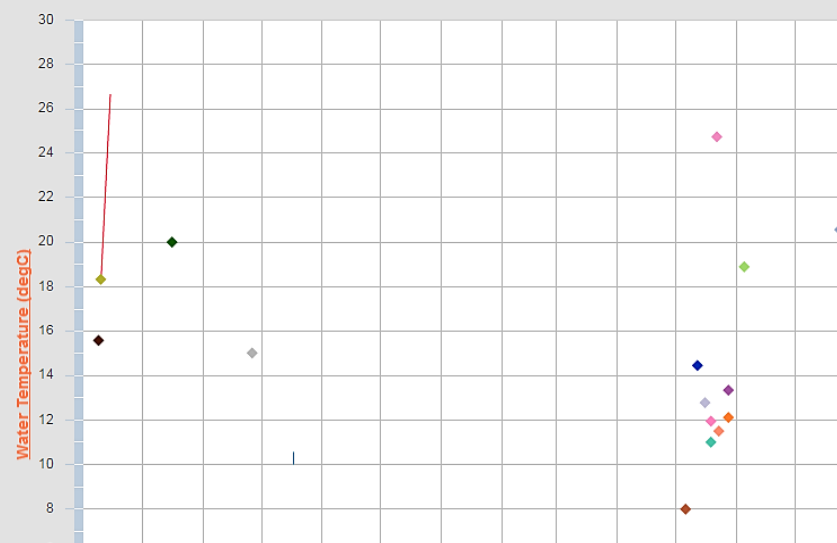
Monthly Surface Water Appearance in NE Michigan
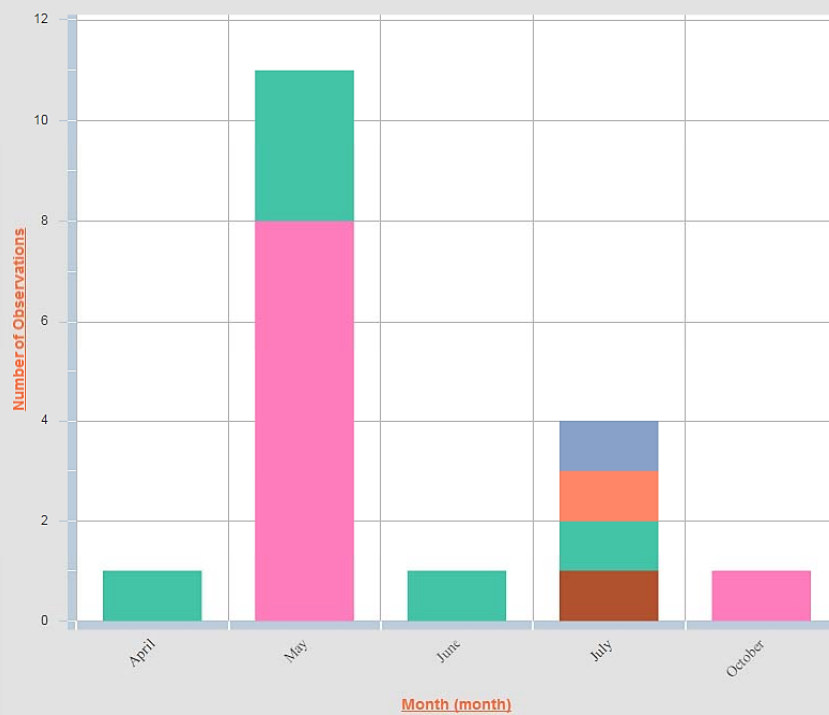
Oxygen in the Water and Mayflies in NE Michigan

Correlation (r): 0.972
Best Fit: y = (x - 4.44) * 5.07 + 14.89

CREATE GRAPH PROGRESS: **1 Select Variables** | 2 Filter Data | 3 Define Axes and Labels | 4 View Graph | +N

Select the observation data sources and variable(s) for your graph

? Learn More

AVAILABLE GRAPHS FOR SELECTED VARIABLES:

Data Sources ▾

☑ Participant Water Quality Data ?

Variables ▾

Make selection(s) to add or remove from lists.

Available Variables:
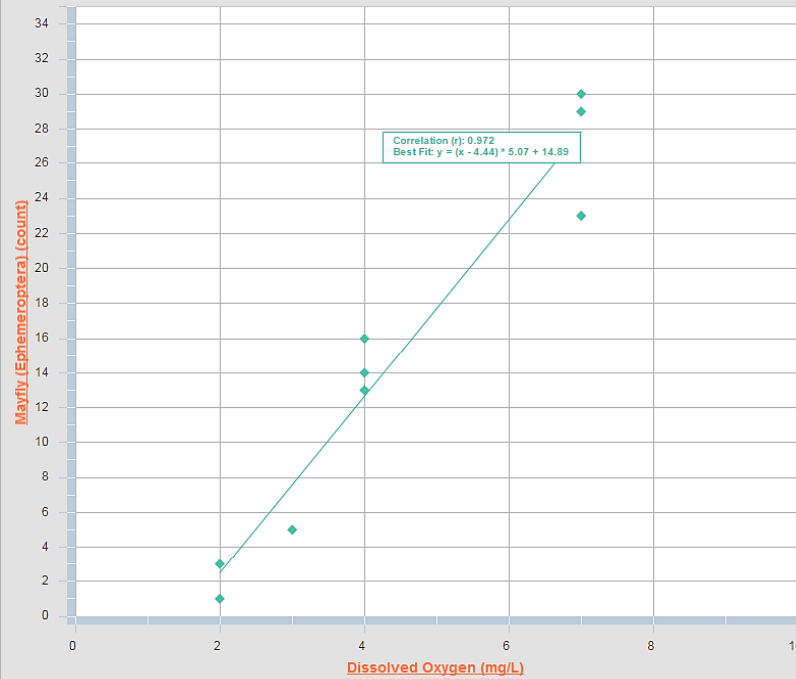
Search for variable name...

Variable	Type
Latitude	Numeric
Longitude	Numeric
Observation Date	Numeric
Day of Year	Numeric
Relative Humidity	Numeric
Barometric Pressure	Numeric
Air Temperature	Numeric
Water Temperature	Numeric
Turbidity	Numeric
Secchi Depth	Numeric
Stream Width	Numeric
Stream Depth	Numeric
Stream Discharge	Numeric
Stream Bank Eroision	Categorical
Salinity	Numeric

→
←

Selected Variables (2):

✖ Clear All

Variable	Type
Surface Water Appearance	Categorical
Month	Categorical

Scatter Plot

Displays two variables on an x,y axis

Select:
2 number based variables
0-1 category variables

Graph Disabled: not enough numeric variables selected (minimum 2)

Histogram

Displays frequency of a variable in a bar chart

Select:
0-1 number based variables
1-2 category variables

Time Series Plot

Displays one variables on an x axis (time) and a y axis

Select:
1-2 number based variables
0 category variables

Graph Disabled: not enough numeric variables selected (minimum 1)

Range Comparison Plot

Displays ranges in a grid format

Select:
1 number based variables
1-3 category variables

Graph Disabled: not enough numeric variables selected (minimum 1)

Previous

NEXT ›

CREATE GRAPH PROGRESS: 1 Select Variables   2 Filter Data   3 Define Axes and Labels   4 View Graph   + N

Select the type of filter you would like to create   ? Learn More

Filter by value

Filter by value to select and display data on the variables you are interested in.

Filter by area

Filter by a predefined geographic area, or an area you define.

Filter by date

Filter by date to modify the temporal range of the data you are working with.

Filter by observer

Filter by observer to select only data from a certain organization or user.

GRAPH INFORMATION:

Graph Type:	**Histogram**
Number-based variables:	
Category Variables:	**Surface Water Appearance, Month (month)**

DATA INFORMATION:

Number of Stations:	**21**
Number of Observations:	**22**

FILTER LIST:

Match: ● Any selected filter ○ All selected filters

Active	Filter Name (double-click to edit)	Delete

Previous   NEXT ›

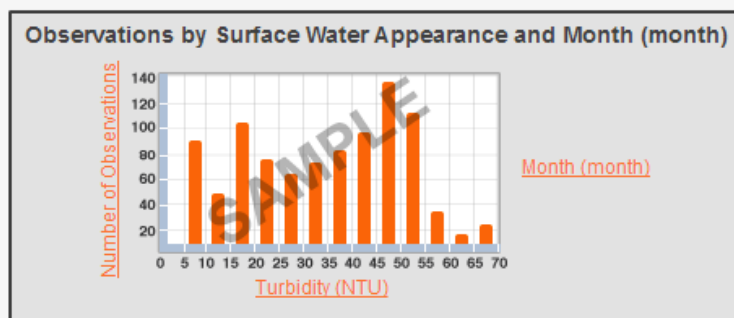CREATE GRAPH PROGRESS: 1 Select Variables   2 Filter Data   **3 Define Axes and Labels**   4 View Graph   + N

Verify the x and y-axis and graph labels
Learn More

Graph Description:

Graph Title:

Observations by Surface Water Appearance and Month (m

Observations by Surface Water Appearance and Month (month)

Y-axis label:
Number of Observations

X-axis label:
Turbidity (NTU)

group label:
Month (month)

X-axis variable:
Surface Water Appearance

group variable:
Month

GRAPH INFORMATION:

Graph Type: **Histogram**
Number-based variables:
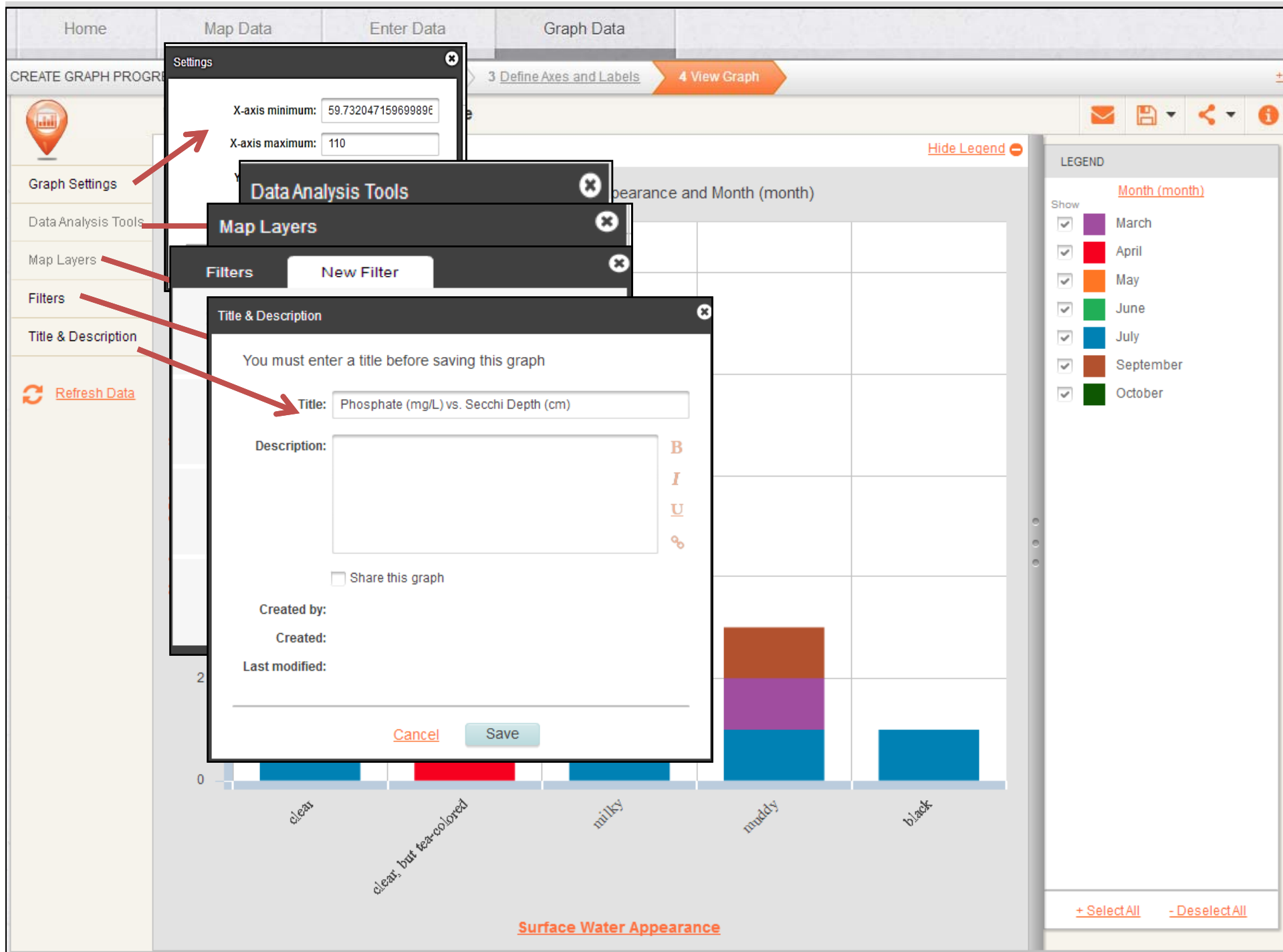Category Variables: **Surface Water Appearance, Month (month)**

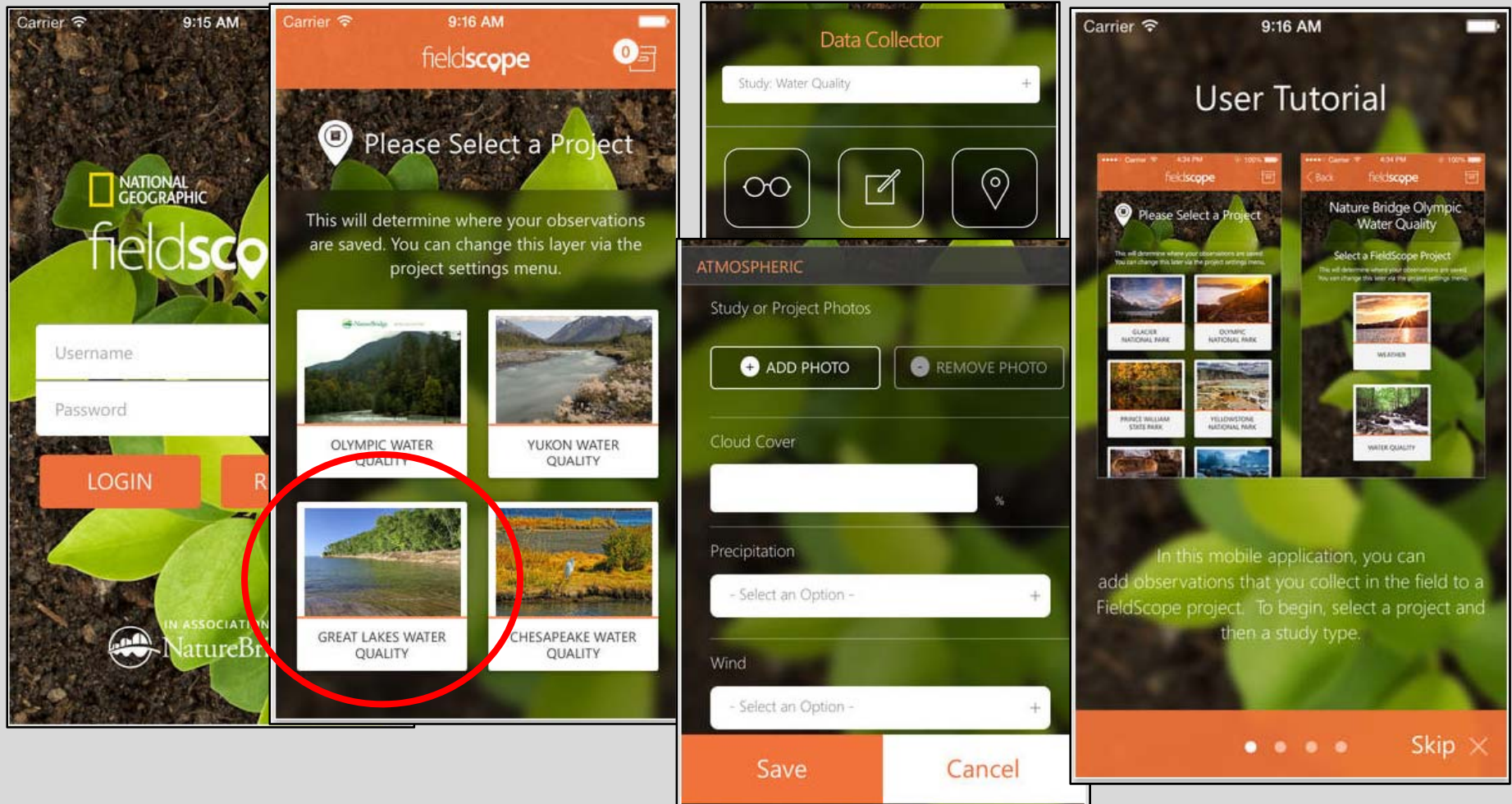**DATA INFORMATION:**

Number of Stations: 21
Number of Observations: 22

Previous   NEXT ›

CREATE GRAPH PROGRE

3 Define Axes and Labels   4 View Graph

Graph Settings

Data Analysis Tools

Map Layers

Filters

Title & Description

🔄 Refresh Data

Settings

X-axis minimum: 59.73204715969989£

X-axis maximum: 110

Data Analysis Tools

Map Layers

Filters   New Filter

Title & Description

You must enter a title before saving this graph

Title: Phosphate (mg/L) vs. Secchi Depth (cm)

Description:

B
I
U
🔗

☐ Share this graph

Created by:

Created:

Last modified:

Cancel   Save

Hide Legend ⊖

...pearance and Month (month)

LEGEND

Month (month)

Show

☑ 🟪 March

☑ 🟥 April

☑ 🟧 May

☑ 🟩 June

☑ 🟦 July

☑ 🟫 September

☑ 🟩 October

clear   clear, but tea-colored   milky   muddy   black

Surface Water Appearance

+ Select All   - Deselect All

There's an App for That

Are you up for the challenge?

Thank You!

Alison Stevens

Michigan Sea Grant College Program

aliwstev@umich.edu

http://greatlakes.fieldscope.org/