Collecting Data with the HydroColor App: Getting Started
Contact: Shelby Brown brownsh@si.edu or 443-482-2270

**STEP 01**
Download the Hydrocolor App (free) from the app store to your smartphone.

**STEP 02**
Check your local weather to make sure it's safe to go out! Your safety is a priority, please do not go out if there is severe wind, rain, or temperatures.

**STEP 03**
Go out to your sampling location. We want to make sure it's at least 100ft from the shore.

***Scan the QR code*** to see the NASA satellite calendar. Ideally, you would take HydroColor data on the days that the satellites are passing over, but it's not required. All data is good data!
Position the Sun behind you.

It's best to not go out at midday as the sun will be directly overhead. Next, look in front of you between your 10 o'clock and 2 o'clock.

Take a moment and see which side is clear from shadows or objects.

This will be the side we use to take photos for data collection.

With the sun behind you, take the gray card out of the plastic covering and place on a flat surface.

Use a clipboard or something heavy so the gray card doesn't blow away!
Open the Hydrocolor App to collect data. At the bottom there will be 4 options, click "Collect Data" and follow the prompts.

Make sure your latitude and longitude are accurate. Click "Get GPS Fix" for the app to automatically pick up your location or click "Edit Lat Lon" and enter it manually.

You may need to click "Get GPS Fix" a few times and zoom in on the map to make sure that the location is accurate. Just be patient!

You will take three photos for the app to analyze water quality. First, let's click on the gray card rectangle.
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**STEP 10**
Tilt your phone up and down and rotate it side to side until the green arrows line up and there is a green box around the photo.

**QUICK TIPS**
You may need to bend down to get the right alignment and to get as much of the gray card in the smaller box as possible!

**STEP 11**
When the arrows are lined up and there is a green box highlighted, click "Capture."

**If you do not get a green box around the photo, click on the outer edge of the photo to try again. Adjust until you get a green box and capture again**
Repeat steps 9 - 11 for Sky and Water so you have all three photos taken. Then, click "Analyze Images".

You will be prompted to name the entry. Enter: the initials of the body of water_your initials_unique identifier for your location_the measurement number.

For example: this is Jane Doe's first measurement on the Rhode River at her pier so her entry will read: RR_JD_JanesPier_1

Click "Continue"

Repeat steps 9 - 13 above for two more measurements at the same location! Click "Back" to do this.

Having 3 entries per location is important so we can get an average of the numbers for each location. If you're only able to do one trial at this location that's still great! All data is good data!
Now we will check all of our data before we enter it into Fieldscope.

At the bottom of the screen click "Library" and scroll to the bottom to see the most recent measurements you've taken.

**STEP 16**

Compare the turbidity of all 3 measurements from the day.

Your highest and lowest measurements of turbidity should be within a range of 5 from each other.

For example: I got turbidity readings of 19, 23, and 22. My lowest value is 19, my highest value is 23, and 23 - 19 = 4 so they are within a range of 5. If I have readings that are outside the range of 5, I need to take another trial until I have at least three measurements with turbidity readings that are within my range of 5.

*Ignore the +/- NTU. All we are looking for is the whole number for turbidity!*

**STEP 17**

Enter all Hydrocolor data on Fieldscope site: **serc.fieldscope.org**

Note your turbidity measurements, the date, time, and environmental conditions including air temperature.
Things to avoid in your photos:

- Shadows
- Dock, shoes, or other objects
- Debris (leaves/sticks/trash)
- Glare from the sun
- Lots of bubbles
- Whitecaps
- Foam

Example of Quality of Images

**Perfect!**

- ![Image](image1.png)
- ![Image](image2.png)
- ![Image](image3.png)

**Good**

- ![Image](image4.png)
- ![Image](image5.png)
- ![Image](image6.png)

**Bad = redo**

- ![Image](image7.png)
- ![Image](image8.png)
- ![Image](image9.png)
Hydrocolor:

What **day** is the best to collect data?
- A clear sky day when the satellite is passing over is best. See page 1 or go to our website for the satellite calendar!

What **time of day** is the best to collect data?
- 11AM
- November to early March: 9AM - 3PM
- Late March to October: 10AM - 4PM.

My smaller square didn't turn green, how do I retake a photo?
- Tap at the top of the photo you want to retake a picture of

Why is the compass not responding?
- We have found androids respond a little slower than iOS, be patient and it should work. Let us know if there are any major issues that you have with the app.

What is turbidity?
- Turbidity is the cloudiness or haziness of the water.

Fieldscope Site:

How do I sign up for a Fieldscope account?
- Go to [serc.fieldscope.org](http://serc.fieldscope.org) and in the top right-hand corner click "Log In." Then click "Create an Account." After you fill in the information, click "Sign up."

- Once you have created an account on Fieldscope, the managers will get a notification and approve you to be a part of the project. You'll receive a confirmation email, click the link in that email to confirm your account. Only then is your account fully activated.