



LAKE OBSERVATIONS BY CITIZEN SCIENTISTS & SATELLITES

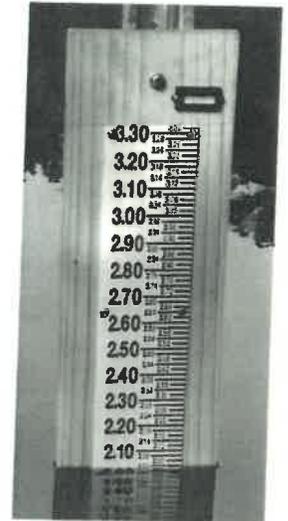


What is this project?

The goal of this NASA-funded project is to better understand why the volume of water in lakes changes over time. Are lake volumes affected most by precipitation, water table height, evaporation or some other factors? Knowing the answer to this question will help us better understand how water moves in relation to these lakes and the surrounding land.

We are working with a network of citizen scientists who are reporting lake height by reading simple lake gauges. We are also using satellite images to determine the surface area of the lake. By knowing the changes in both lake height and lake surface area, researchers can understand how the volume of water in a given lake is changing over time.

We are studying lakes to understand how they are connected (or not), and what that means for lake users and these ecosystems.



Lake Gauge

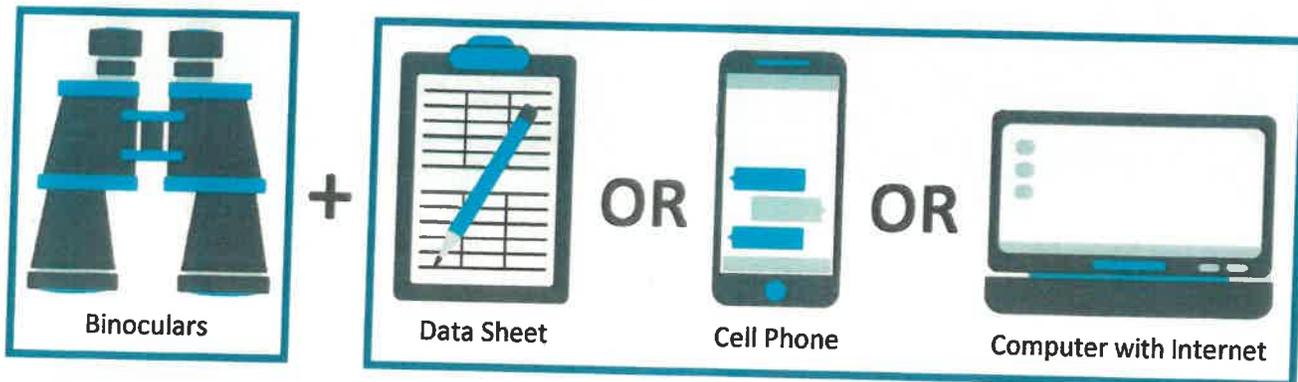
Why is it Important?

There are hundreds of thousands of natural lakes in the world, but probably only a few thousand of those are monitored. This project presents an opportunity to harness the power of volunteers to gather data that a single research team would be unable to obtain. In particular, we want to know whether the lakes are all varying together on a regional scale -- so if the water volume in one goes up, the volume in another goes up -- or are they being controlled by more local factors. We need your help to do this!

How can I help?

If you live near one of the lakes we are monitoring, you can help us by observing and reporting lake levels. To find out which lakes we are studying, visit www.locss.org If we are studying a lake in which you are interested, make note of the location of the lake level gauges.

Ideally, volunteers will observe and report lake levels once a week and on certain target dates. To participate, you only need a few simple tools:





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Step 1: Find Your Gauge

Visit www.locss.org/lake-data to find the lakes we are studying, and the locations of gauges.

With your tools in hand, you can go to your lake gauge. Use your binoculars to look for the gauge, and find the sign that identifies it as a part of this project. The sign will look similar to this:

Step 2: Read the Lake Height

Using binoculars, read the lake height on the gauge.

When the water is calm

The lake height to report is the level at which the top of the water touches the gauge.

If there are small waves as a result of a boat, wait for the water to calm before recording a lake height.



A lake gauge in calm water. The lake height is 2.00 feet.

LAKE OBSERVATIONS
by Citizen Scientists & Satellites

Send us the water level!

Text "ZRL2" & current level
to: (847) 380-8640

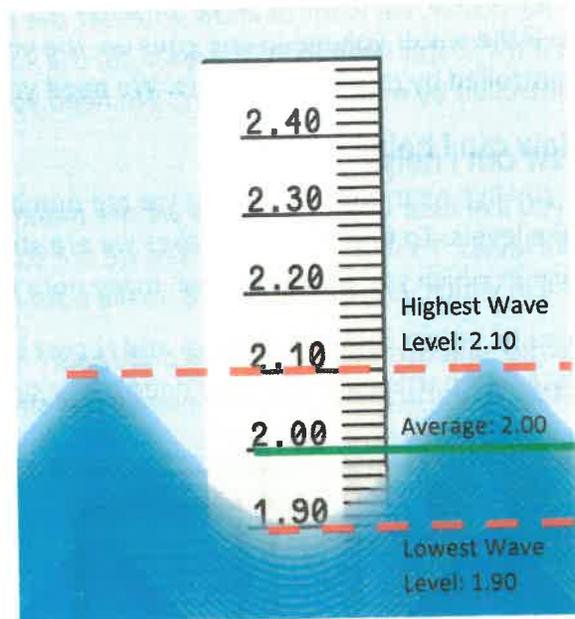
www.locss.org

Logos for Lake County Health Department and Environmental Protection Dept., NASA, and The University of North Carolina at Chapel Hill.

When there are waves

Observe the gauge for 30 seconds. Make note of the highest point that the waves reach, and the lowest point that the waves reach. The height to report is the average of the highest and lowest wave level.

When reporting, mention that there were large waves in your notes.



A lake gauge in waves. The lake height is equal to the average of the highest wave level and lowest wave level, or 2.00 feet.



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Step 3: Inspect the Gauge

When reading the lake height, it's important to know if the gauge has been bumped or disturbed. Use your binoculars to find the bubble level that is attached near the gauge. If the bubble is centered between the lines, then the gauge is okay. If the bubble is not centered between the lines, then the gauge has been moved or bumped, and this should be reported.



When the bubble is centered between the two black lines, the gauge is okay.



If the bubble is not centered between the two black lines, the gauge has been moved or bumped, and should be reported in the notes for the measurement.

Step 4: Report Your Lake's Height

There are 3 ways you can report your lake measurements:



Data Sheet

Record date, time, gauge ID, lake height, if the bubble level is okay, and any notes.

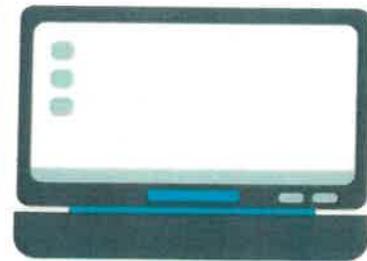
Once a month, scan or photograph the sheet and email to lakelevel@unc.edu



Text Message

Find the Gauge ID and Phone number on the gauge sign.

Text the Gauge ID, the lake height, if the bubble level is okay, and any notes.



Online Reporting

Visit locss.org and navigate to the "Add Measurement" page.

Choose the correct Lake/Gauge ID, and enter the date, time, lake height, if the bubble level is okay.



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What Are Target Monitoring Dates?

These target dates are the list of dates that we would like to have lake height measurements for each of our lakes in Illinois.

Why Were These Dates Chosen?

These are dates when the Landsat8 satellite will be passing overhead and taking photographs of our lakes. We will use these photographs to calculate the lake's surface area. We will then use these surface area measurements along with lake height measurements to monitor how the volume of water in the lake is changing.

Also, if all project lakes are measured on the same days, we can better understand if these lake volumes are changing in the same ways, or independently of each other.

What Time Should I Measure Lake Height?

Any time of day is good for measuring lake height, as long as you can clearly see the lake gauge, and you report the time when you make your measurement.

Can I Report Lake Height on Other Days?

Absolutely! The more lake height measurements we have, the better. Each measurement will help us better understand these lakes, so we can't have too many measurements.

However, measurements made on our target dates will provide the added benefit of ensuring lake height data can be combined with satellite imagery. So if only 1 measurement can be made in a given week, it would be ideal if it is made on the target date.

For more information about the project, please visit www.locss.org

For questions or problems, please email lakelevel@unc.edu

2019 Target Monitoring Dates - IL

5/16/19

6/1/19

6/17/19

7/3/19

7/19/19

8/4/19

8/20/19

9/5/19

9/21/19

10/7/19

10/23/19

11/8/19

11/24/19

12/10/19

12/26/19

2020 Target Monitoring Dates - IL

1/11/2020

1/27/2020

2/12/2020

2/28/2020

3/15/2020

3/31/2020

4/16/2020

5/2/2020

5/18/2020

6/3/2020

6/19/2020

7/5/2020

