



LAKE OBSERVATIONS BY CITIZEN SCIENTISTS & SATELLITES



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 Washington.

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 areas 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.

Read more about target monitoring dates here:
www.locss.org/when-should-we-measure-lake-levels

Special Target Dates for 2023

In December 2022, NASA launched the Surface Water and Ocean Topography satellite (SWOT). This satellite will be the first global survey of the earth's surface water from space.

Eventually, the satellite will be able to survey nearly all of the earth's surface water every 21 days. In an early stage of the mission, however, SWOT will only survey a small portion of the earth, but it will survey that portion daily. This "validation period" will run from April 1 through June 30, 2023. During this time the satellite will be making daily measurements of both the lake height and surface area of many (but not all) of our study lakes in Washington.

LOCSS citizen scientists can help NASA determine how accurate SWOT measurements are by submitting lake height measurements from **April 1 to June 30, 2023** for the following lakes in Washington:

Beaver Lake	Clear lake
Coldwater Lake	Deep Lake, King Co.
Dog Lake	Echo Lake
Fish Lake	Flowing Lake
Lake Bosworth	Lake Cassidy
Lake Lawrence	Lake Roesiger
Lake Sammamish	Lake Washington
Lake Wenatchee	Leech Lake
North Lake	Phantom Lake
Steel Lake	Walupt Lake

For these lakes, we are asking citizen scientists to submit lake height measurements as often as possible between **April 1 and June 30, 2023**.

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



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Target Monitoring Dates

All Lakes in WA

12/19/22
1/4/23
1/20/23
2/5/23
2/21/23
3/9/23
3/25/23
4/10/23
4/26/23
5/12/23
5/28/23
6/13/23
6/29/23
7/15/23
7/31/23
8/16/23
9/1/23
9/17/23
10/3/23
10/19/23
11/4/23
11/20/23
12/6/23
12/22/23
1/7/24

+ Every 16 Days

Surface Water and Ocean Topography Satellite

In addition to the dates listed to the left, we are asking for additional measurements at certain lakes in Washington. At the lakes listed below, NASA's Surface Water and Ocean Topography satellite (SWOT) will be measuring surface area and lake surface elevation daily between April 1 and June 30, 2023. Measurement we receive from citizen scientists during this time period will be used to test the accuracy of this new satellite!

We are asking citizen scientists at these lakes to submit measurements on as many days as possible between April 1 and June 30, 2023.

Beaver Lake	Clear lake
Coldwater Lake	Deep Lake, King Co.
Dog Lake	Echo Lake
Fish Lake	Flowing Lake
Lake Bosworth	Lake Cassidy
Lake Lawrence	Lake Roesiger
Lake Sammamish	Lake Washington
Lake Wenatchee	Leech Lake
North Lake	Phantom Lake
Steel Lake	Walupt Lake

More information on how LOCSS will work to validate SWOT measurements can be found here:

<https://www.locss.org/swot-validation>

Read more about target monitoring dates here:
www.locss.org/when-should-we-measure-lake-levels

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