CyAN Update (2021-04-01 - 2021-08-22)

Report Date: 2021-08-23

*——Cut to the email recipient field:————————————*

**TO:**

DEQ [WQ] Harmful Algal Blooms Coordination Team <\_[WQ\_HABsCoordinationTeam-1-471932883@deq.state.or.us](mailto:WQ_HABsCoordinationTeam-1-471932883@deq.state.or.us)>; Hillwig Rebecca [Rebecca.Hillwig@dhsoha.state.or.us](mailto:Rebecca.Hillwig@dhsoha.state.or.us); Cude Curtis G [CURTIS.G.CUDE@dhsoha.state.or.us](mailto:CURTIS.G.CUDE@dhsoha.state.or.us); Hofeld Evan E [EVAN.E.HOFELD@dhsoha.state.or.us](mailto:EVAN.E.HOFELD@dhsoha.state.or.us); Baird Gregg C [GREGG.C.BAIRD@dhsoha.state.or.us](mailto:GREGG.C.BAIRD@dhsoha.state.or.us); Labiosa, Rochelle [labiosa.rochelle@epa.gov](mailto:labiosa.rochelle@epa.gov); Compton, Jana [Compton.Jana@epa.gov](mailto:Compton.Jana@epa.gov); Handler, Amalia [Handler.Amalia@epa.gov](mailto:Handler.Amalia@epa.gov); Carpenter, Kurt [kdcar@usgs.gov](mailto:kdcar@usgs.gov); Brian Fulfrost [bfaconsult@gmail.com](mailto:bfaconsult@gmail.com); Lundell, Tina M CIV USARMY CENWP (USA) [Tina.M.Lundell@usace.army.mil](mailto:Tina.M.Lundell@usace.army.mil); Buccola, Norman L (Norm) CIV USARMY CENWP (USA) [Norman.L.Buccola@usace.army.mil](mailto:Norman.L.Buccola@usace.army.mil); Bellringer, Holly H CIV USARMY CENWP (USA) [Holly.H.Bellringer@usace.army.mil](mailto:Holly.H.Bellringer@usace.army.mil); Anderson, Chauncey W [chauncey@usgs.gov](mailto:chauncey@usgs.gov)

**CC:**

GRUND Yuan \* DEQ [yuan.grund@deq.state.or.us](mailto:yuan.grund@deq.state.or.us); COSTELLO Erin \* DEQ [erin.costello@deq.state.or.us](mailto:erin.costello@deq.state.or.us); ADHAR Ratnanjali \* DEQ [Ratnanjali.ADHAR@deq.state.or.us](mailto:Ratnanjali.ADHAR@deq.state.or.us); SOBOTA Daniel \* DEQ [daniel.sobota@deq.state.or.us](mailto:daniel.sobota@deq.state.or.us)

*——Cut to the email contents:————————————*

Hello all,

Below is the statewide update for satellite imagery estimates of cyanobacteria in Oregon waterbodies.

Please note that:

* The 7-Day Average Daily Maximum is used for summarizing the cyanobacterial abundance.
* The table includes all waterbodies with 7-Day Average Daily Maximum of cyanobacterial abundance above the World Health Organization (WHO) guideline value (100,000 cells/mL) for moderate probability of adverse health effects in the past 7 days. Potential health risks for the possible exposure through recreational activities, such as contact, ingestion and inhalation, during cyanobacterial abundance above this guideline level include skin irritations and gastrointestinal illness ([WHO 2003](https://apps.who.int/iris/bitstream/handle/10665/42591/9241545801.pdf?sequence=1&isAllowed=y)).
* The time series plots include all resolvable waterbodies identified from EPA’s CyAN project. The plots report both the daily average and daily maximum abundance from April 1st through the present.
* All data presented in this report are provisional and subject to change. Estimates of cyanobacterial abundance may be skewed by cloud cover, ice cover, sun glint, water surface roughness, dry lake beds, algal mats and shoreline effects. We suggest examining additional imagery from Sentinel 2 (<https://www.sentinel-hub.com/explore/sentinelplayground/>) or following up with site visits to confirm on the ground conditions.

Cheers!

*——DELETE ABOVE AFTER CUT AND PASTE——*

Waterbodies ranked by the 7-Day Average Daily Maximum of cyanobacteria abundance (cells/mL) that are above the WHO guideline (100,000 cells/mL) for cyanobacteria in recreational freshwater during the 7 days from 2021-08-15 to 2021-08-22. The waterbody hydrographic types and basin names are shown in the table.

| Waterbody\_GNISID | Hydrographic Type | Basin | 7-Day Average Daily Maximum (cells/mL) |
| --- | --- | --- | --- |
| Sturgeon Lake\_01127681 | Perennial | Lower Willamette | 3,251,010 |
| Davis Lake\_01140666 | Perennial | Deschutes | 2,911,863 |
| Upper Klamath Lake\_01151685 | Perennial | Klamath | 2,903,301 |
| Cold Springs Reservoir\_01119125 | Perennial | Middle Columbia | 1,372,798 |
| Malheur Lake\_01123710 | Swamp/Marsh: Perennial | Oregon Closed Basins | 1,358,797 |
| Summer Lake\_01150595 | Intermittent | Oregon Closed Basins | 876,989 |
| Alkali Lake\_01116863 | Perennial | Klamath | 751,623 |
| Lake Billy Chinook\_01138120 | Perennial | Deschutes | 651,212 |
| Diamond Lake\_01140999 | Perennial | Southern Oregon Coastal | 553,323 |
| Fern Ridge Lake\_01120678 | Perennial | Upper Willamette | 501,019 |
| Hart Lake\_01121637 | Perennial | Oregon Closed Basins | 476,306 |
| Crane Prairie Reservoir\_01140386 | Perennial | Deschutes | 416,050 |
| Lake Abert\_01116755 | Perennial | Oregon Closed Basins | 325,782 |
| Crump Lake\_01119601 | Perennial | Oregon Closed Basins | 323,588 |
| Howard Prairie Lake\_01158895 | Perennial | Klamath | 297,784 |
| Drews Reservoir\_01141243 | Perennial | Upper Sacramento | 288,885 |
| Gerber Reservoir\_01121105 | Perennial | Klamath | 284,628 |
| Wickiup Reservoir\_01161711 | Perennial | Deschutes | 165,058 |
| Renner Lake\_00267175 | Perennial | Upper Sacramento | 108,643 |

Figures: Time series plots of daily maximums and daily means of cyanobacterial abundance (cells/mL) of the waterbodies during 2021-04-01 and 2021-08-22. Red dashed line: WHO RUV Guideline - World Health Organization Recreational Use Value Guideline for moderate probability of adverse health effects, which is 100,000 cyanobacterial cells/mL.



















































































