
From: Leland Frayseth

Date: August 20, 2020 at 9:58:54 PM PDT

To: Rachel Murphy, Jennifer Allen, John Burgh, John Cunningham, Sarah Sugar, Paige Uttley, Eerik Erreca, Michael Mierzwa, Gearheart Greg, Karen Mogus, Bill Wells, Scott Anderson, Daniel Bacher,

Cc: Armando Quintero, Yun, Joseph, Amy Young, Brianna Shoemaker

Subject: European Space Agency Copernicus Sentinel 2 satellite image 17 Aug 2020 (18:49:19 Zulu) Los Vaqueros Reservoir California USA
Watershed fire from lightning strike

Colleagues,

European Space Agency (ESA) Copernicus Sentinel 2 satellite image 17 Aug 2020 (18:49:19 Zulu) Los Vaqueros Reservoir California USA
Watershed fire from lightning strike

I penetrated the smoke layer obscuring the visible spectrum by using the default atmospheric penetration mapping of colors and wavelengths in SNAP 7.0.4.

Color	Band	nano-meters
Red	B12	2190
Green	B11	1610
Blue	B8A	865

The satellite will be flying over us again Saturday morning. I will make a new image like this to see how much the fire has grown. If the wind clears the smoke I am interested in seeing in the visible spectrum the dye marked aerial drops of fire retardant in the watershed because it is high in phosphorus which is the key ingredient in CyanoBacterial Hazardous Algal Blooms (CyanoHABs). This reservoir has a known seasonal algal bloom and is used by my water district to deliver water to the tap in my home. I use the water to drink, cook, clean and bathe. I am posting this to the Sentinel Toolbox Exploitation (STEP) forum because ESA Copernicus is light years ahead of NASA LandSat under Trump and I am grateful ESA shares this technology with us and the world for free.

Leland



Contra Costa Water District CA x +

ccwater.com/AlertCenter.aspx?AlertID=Los-Vaqueros-Watershed-closed-due-to-a-f-47

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WATERSHED CLOSED

Los Vaqueros Watershed closed due to a fire.
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August 16, 2020 5:29 PM
Los Vaqueros Watershed closed due to a fire.
The Los Vaqueros Watershed is currently closed due to a fire. More details to follow. Watershed closed until further notice.

f t e

waterboards.ca.gov/centralvalley/water_issues/wildfire_response/faq/

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Fire Retardant and Water Quality

Firefighting agencies use a variety of materials as fire retardants for air-drop (the reddish substance that you see coming from planes, and that might be left on the landscapes and structures within or near the burned area). Most fire retardants have the same active ingredient: phosphorous. Phosphorous is one of the building blocks of plant life, so it can be taken up by plants surviving the fire. The phosphorous that is not taken up by plants on the landscape may become mobile in the first few rainfall events, and make its way to the nearest waterbody in runoff. While it is possible that this compound can contribute to eutrophication (when a body of water becomes overly enriched with minerals and nutrients that induce excessive growth of plants and algae), it is more likely that precipitation associated with the wet season will result in the phosphorous being pushed out to larger water systems and diluted with the greater quantities of water present in those systems.

- More information on the USFS fire retardant systems is available here:
<https://www.fs.fed.us/rm/fire/wfcs/products/>
- More information on the, CALFIRE, fire retardant system is available here:
http://www.calfire.ca.gov/fire_protection/fire_protection_air_program/



