

Water Security dimensions of the COVID-19 Pandemic

and

Informing Environmental Policy in a post-COVID world



Ali S Akanda, Civil and Environmental Engineering

Jason Parent, Natural Resources Sciences

Albert Larson, Business Administration

Kristin Johnson, Political Science

University of Rhode Island

Kingston, RI 02881

Water Security dimensions of the COVID-19 Pandemic

- Hand-washing is critically important to keep COVID-19 transmission rates low, but what if you don't have safe water?
- Water insecurity is pervasive in many areas of the American West. Many communities lacking access to plumbed water, including about 200,000 people in California.
- Uninterrupted water services is paramount for hospitals and critical services that are open. Small and low-income communities, with decentralized systems are vulnerable.

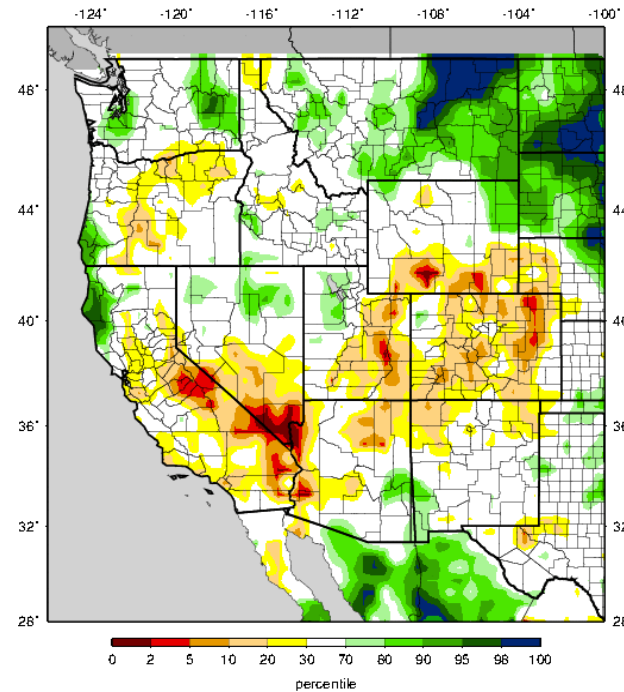
March 18:

We highlighted in a submitted comment that 40% of the Navajo Nation lacks reliable water

March 26:

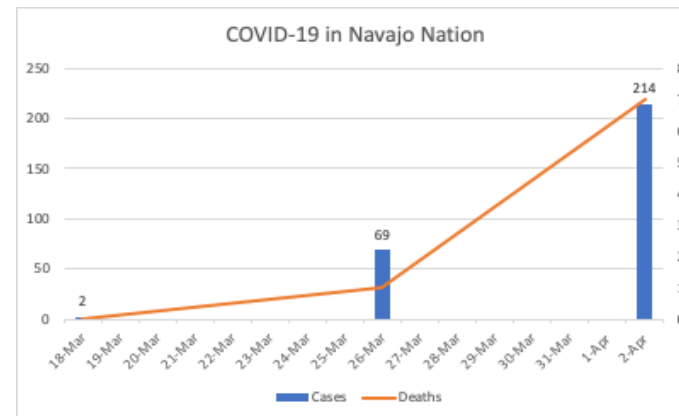
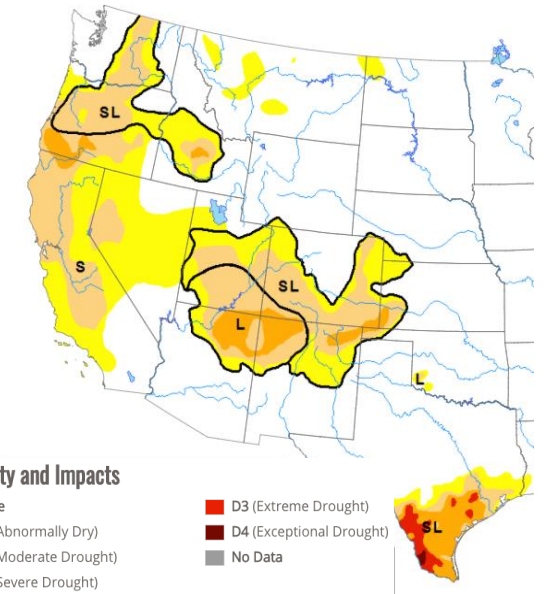
NPR ran a story that COVID-19 cases spiked in the Navajo Nation from 2 to 69 cases in 1 week!

Large parts of the west is facing droughts in coming months



Map released: March 26, 2020

Data valid: March 24, 2020



New Mexico's governor warns tribal nations could be 'wiped out' by coronavirus

"I'm very worried, Mr. President," Grisham said on a call with Trump Monday.

By Katherine Faulders and Olivia Rubin

March 30, 2020, 7:28 PM • 5 min read



NO_2

Multispatial environmental impacts of the COVID-19 situation

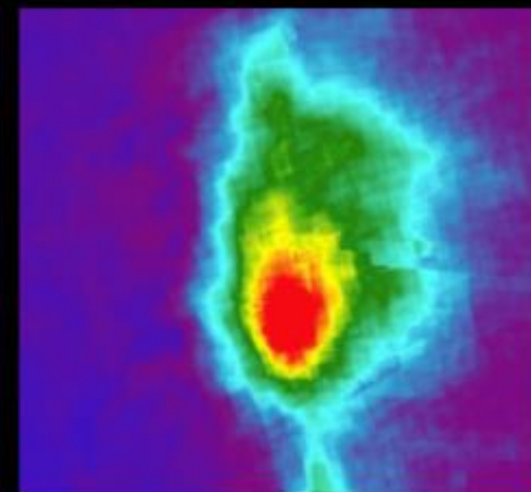
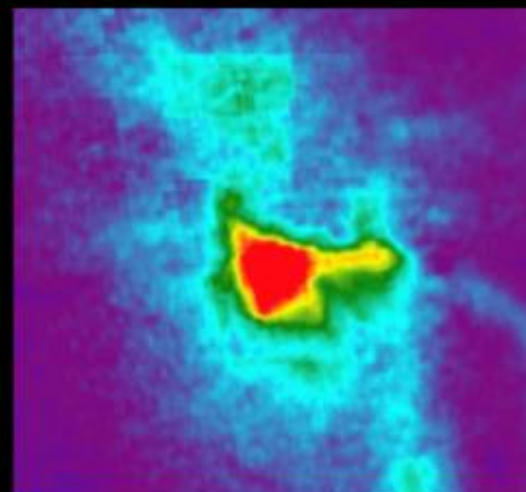
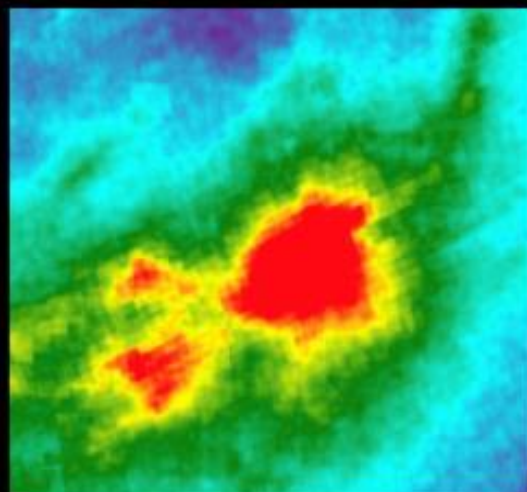
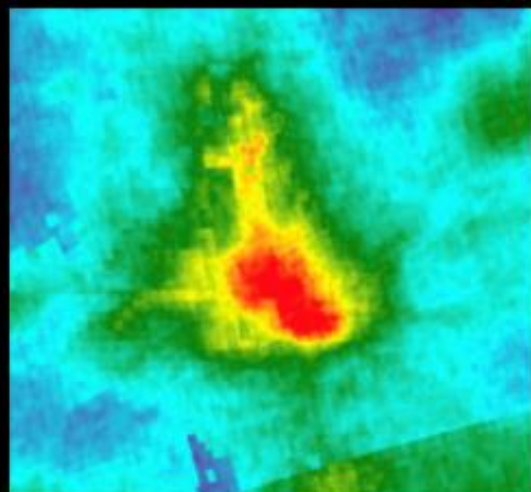
Albert E. Larson --- University of Rhode Island --- Department of Civil & Environmental Engineering

Chicago

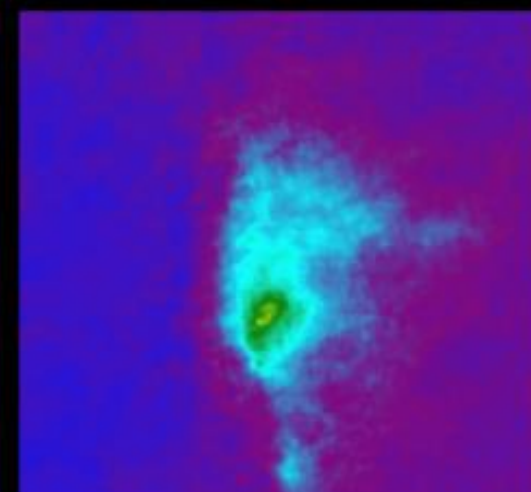
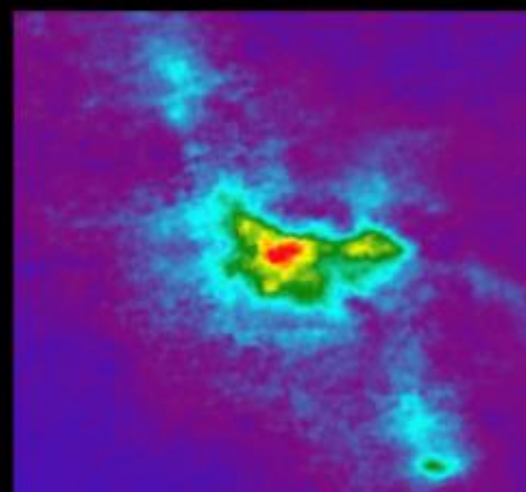
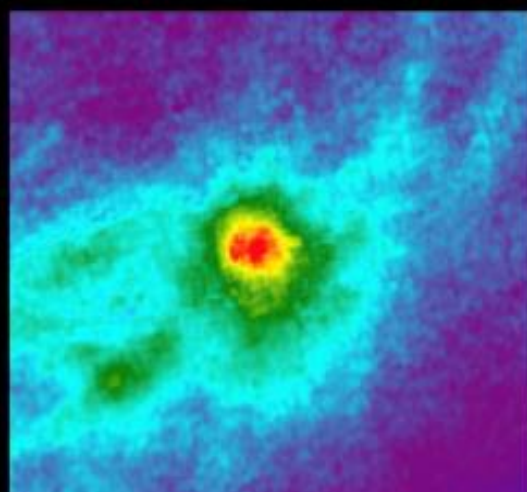
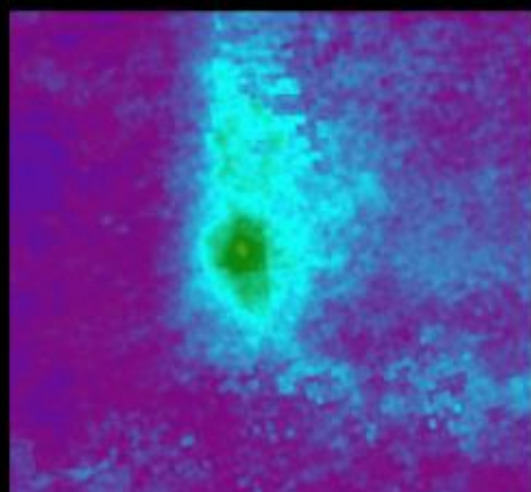
NYC

LA

Denver



March 1-29
2019



March 1-29
2020

Data source: Google Earth Engine / Sentinel 5P TROPOMI

**Application
Question:**

How can we use environmental observations of the developing drought situation in the West to identify COVID-19 transmission hotspots?

Sensors and Variables:

MODIS Land Surface Temp
MODIS Evapotranspiration
GPM IMERG Precipitation
GRACE-FO Water Storage
Sentinel 5P Nitrogen Dioxide
Sentinel 5P Carbon Monoxide

**Research
Question:**

How can the environmental observations from this global "life-size" experiment be used to inform development of environmental policies and treaties?