

Calif. has no idea how much water it has

By Leighton Woodhouse, *New Republic*

Tucked in the foothills of the San Gabriel Mountains in Pasadena, NASA's Jet Propulsion Laboratory (JPL) looks and feels like a high-security college campus for engineering nerds. From the streetlight banners celebrating the latest satellite launch to the bungee rocket toys in the gift shop, the facility – which is formally a part of the California Institute of Technology – leaves no doubt about its mission: “It is really an aerospace company,” is how Jay Famiglietti, NASA's senior water scientist who runs a project called the Western States Water Mission, puts it.

The vast majority of JPL's thousands of employees are engineers and technicians who build robots and rockets to ship into space. Scientists like Famiglietti are there to make sure that all that hardware serves some sort of greater purpose benefitting humanity. Right now, for his research team, that purpose is mapping the dwindling water supply of the drought-gripped Western United States.

Famiglietti is a hydrologist – a specialist in the world's water systems. Before he arrived at JPL, he was accustomed to looking at rivers, oceans, and aquifers from ground level. Now, as a NASA researcher, he looks at them from space. His project seeks to create a computer model that will track and predict the movement of every concentration of water in the western part of the country: how much snow is in the mountains, how much moisture is in the soil, how much groundwater the aquifers contain, how much water is in the rivers and how quickly it's flowing, where floods will occur, and what's the water volume of the reservoirs. Once his team shows it can be done regionally, they will expand the project

to a global scale.

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