SEMINAR SERIES:
Join us for "After the Fire: Rebuilding Organizational Capacity and Reflection on 20 years of Community Water Monitoring in the Sierra Foothills"

Jeff Lauder is the new Executive Director for the **Sierra Streams Institute** (SSI). He is a forest ecologist, with a focus on drought, tree physiology, tree carbon use, and disturbance ecology. He did his undergraduate education and master's research at CSU Chico, where he studied the impacts of forest treatments on soil properties and forest growth and did his thesis research on the impacts of disturbances such as volcanic eruption and flooding on forest structure in Papua New Guinea. He did his first stint with SSI as an AmeriCorps member in the 2012–2013 term, and then stayed on as staff until 2015, when he left to pursue his PhD. After his dissertation research on physiological drivers of drought-induced mortality in Sierra Nevada conifers, he returned to Sierra Streams to work on projects integrating forest health into watershed management and restoration.

Sierra Streams Institute (SSI) is a community science organization that has been monitoring, managing, and restoring the Deer Creek watershed in the Northern Sierra Nevada foothills for more than 20 years. Founded as a "Friends" group to put standardized monitoring protocols in the hands of the community, they have since expanded to include mine remediation, riparian restoration, forest management, and research on impacts of fire, mine waste, and climate change on environmental and human health.

SSI's community-based participatory research approach allows the collection of robust environmental health data according to state and other agency protocols while allowing community members to collect and analyze data, and understand impacts from local and regional mining history, fire, and both predicted and observed climatically-induced shifts in watershed health.

2020 unfortunately introduced two barriers to the community science process; COVID-19 and the Jones Fire, which destroyed the SSI office, including all equipment. This provided our organization a unique opportunity, however; they have since worked to re-evaluate their monitoring strategy, target sites, and program resilience to unexpected interruptions, using their two decades of data to ask which monitoring sites act as indicators of change or resilience and how our monitoring program can better track that resilience.

Jeff will share both data-driven approaches to understanding climate-change impacts on the Deer Creek watershed and how recovery from large organizational impacts allowed them to assess organizational efficiency and community investment in a citizen science program.

Register for our Seminar Series Thursday, September 30 at 12:00 PM Pacific time by registering below:

https://waterboards.zoom.us/webinar/register/WN_1tAZk2jITpC1T6eXCoOVsQ

DATA BYTES
Old news is good news!
Excel functions: VLOOKUP vs XLOOKUP

VLOOKUP was great when you needed to find things in a table or a range by row. For example, look up a station by its station code, or find an employee name based on their employee ID.

In its simplest form, the VLOOKUP function said:

```
=VLOOKUP(What you want to look up, where you want to
look for it, the column number in the range containing
the value to return, return an Approximate or Exact
match – indicated as 1/TRUE, or 0/FALSE). It was fantastic
for a lot of us users.
```

Then came XLOOKUP! Just like its predecessor the XLOOKUP function is used to find things in a table or range by row. However, XLOOKUP allows users to look in one column for a search term and return a result from the same row in another column, regardless of which side the return column is on.

Both formulae require a minimum of three arguments. The square brackets indicate the optional arguments.

```
=vlookup(lookup_value, table_array, col_index_num,
[range_lookup])

=xlookup(lookup_value, lookup_array, return_array,
[if_not_found], [match_mode], [search_mode])
```

XLOOKUP vs VLOOKUP: Comparison table

	VLOOKUP	XLOOKUP
Exact match default	N	Y
Return value to the right of lookup	Y	Y
Return value to the left of lookup	N	Y
Lookup in row	N	Y
Return more than one value	N	Y
Lookup column needs to be sorted	Approximate match only	Binary search only
Search from top to bottom	Y	Y
Search from bottom to top	N	Y
Binary search	N	Y
Custom message if lookup value not found	N	Y
Wildcard search	Y	Y
Exact search	Y	Y
Approximate search returning next smaller value	Y	Y
Approximate search returning next larger value	N	Y
May return an incorrect value if lookup values are not sorted?	Y - approximate	N - approximate, Y - Binary
Add new columns to search table may break the formula	Y	N

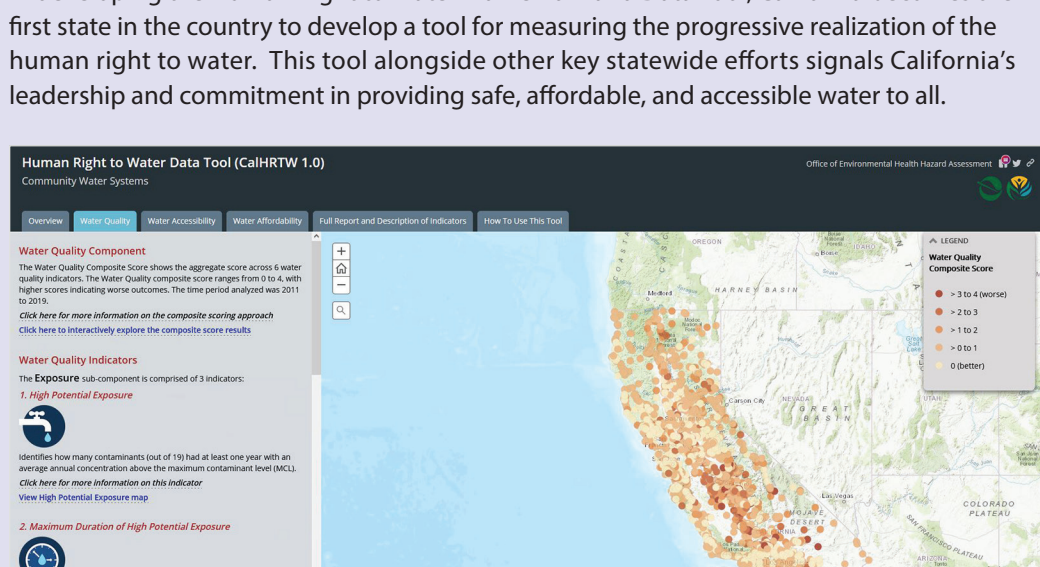**Screenshot of VLOOKUP vs XLOOKUP Comparison Table**

Although the XLOOKUP function was released a little over two years ago. The author felt compelled to share this comparison and as it may help users a great deal in deciding which function to use and also neatly displays the strengths of XLOOKUP.

MORE DATA BYTES:
Data Tools: California first state to develop a tool for measuring the human right to water!

Early this year, The Office of Environmental Health Hazard Assessment (OEHHA) announced the release of its final Human Right to Water Framework and Data Tool (CalHRTW 1.0)—comprised of an **interactive web tool** and report, **Achieving the Human Right to Water in California: An Assessment of the State's Community Water Systems**.

In developing the Human Right to Water Framework and Data Tool, California becomes the first state in the country to develop a tool for measuring the progressive realization of the human right to water. This tool alongside other key statewide efforts signals California's leadership and commitment in providing safe, affordable, and accessible water to all.

Screenshot of Human Right to Water Tool