The Appearance Of Pink Lake And The Relationship Between Color Changes And Weather

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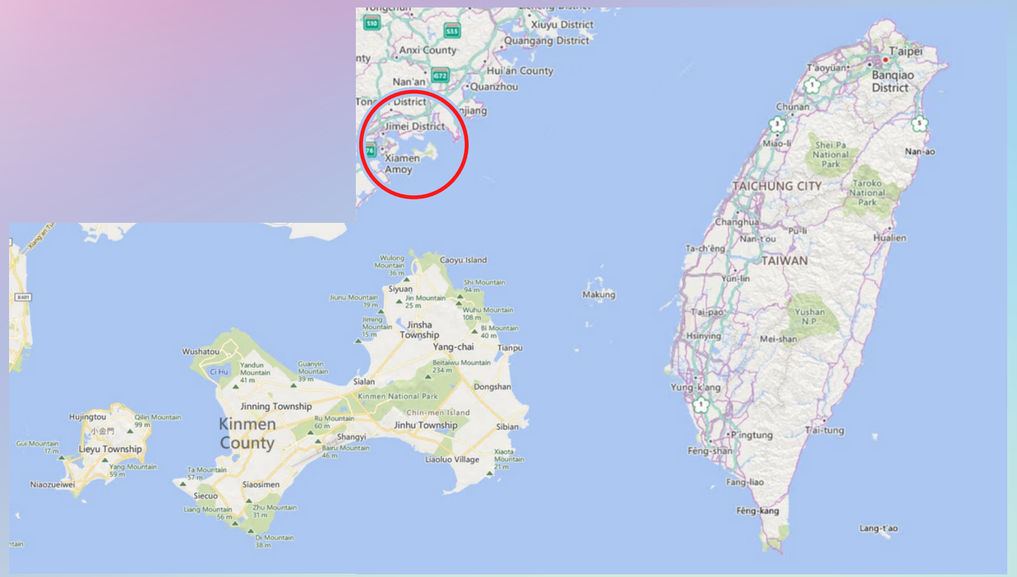
Introduction

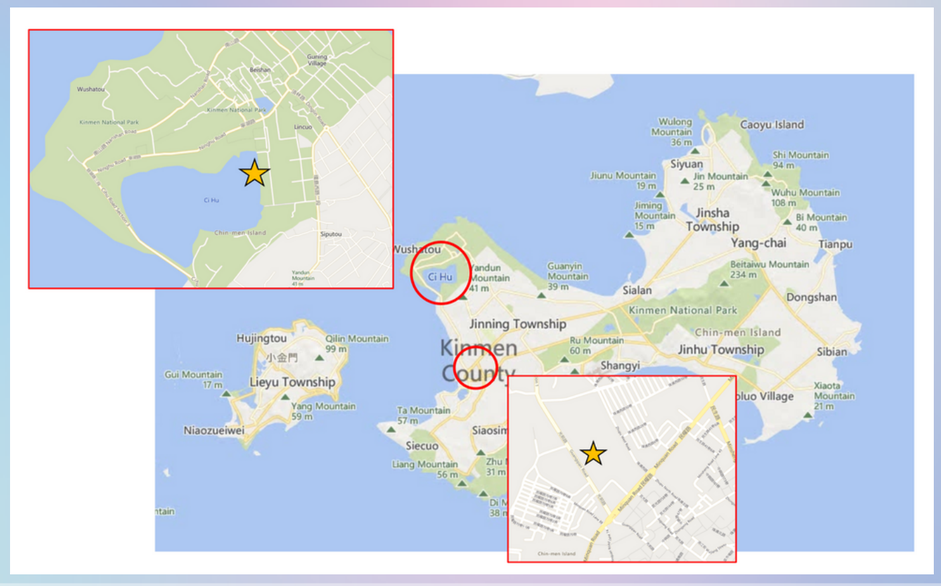
WHERE ARE WE?

We are from an island of Taiwan
called "Kinmen".
The pictue shows the location.



SCHOOL AND PINK LAKE

The star in the upper left corner is the
location of the Pink Lake.
The star in the lower right corner is the
location of our school.



Summary

At the sight of the fairy-tale and dreamy Pink Lake, we were curious enough to find out the cause of its natural color. Deciding to analyze it from a scientific perspective, we were in front of the computer monitor, trying to observe the effect of rainfall and temperature on the color of the pink lake. Through comparison, we've had an unexpected discovery. Maybe we can find out the conditions under which the "Pink Lake" appears.

Research Purposes

We attempted to explore the relationship between rainfall and temperature (temperature, soil temperature, surface temperature) and the color changes of the Pink Lake.

Research Method and Equipment

METHOD

We used GLOBE Observer App to take the photo of the Pink Lake every Sunday, got GLOBE data from the camera on changes in temperature and rainfall to explore their association, had an understanding of the mechanisms associated with colium bacteria with this opportunity.

EQUIPMENT

Computer,
GLOBE Observer
Mobile phone camera
GLOBE's profile.

Research Process and Results

Pink Lake color changes

Make an Impact

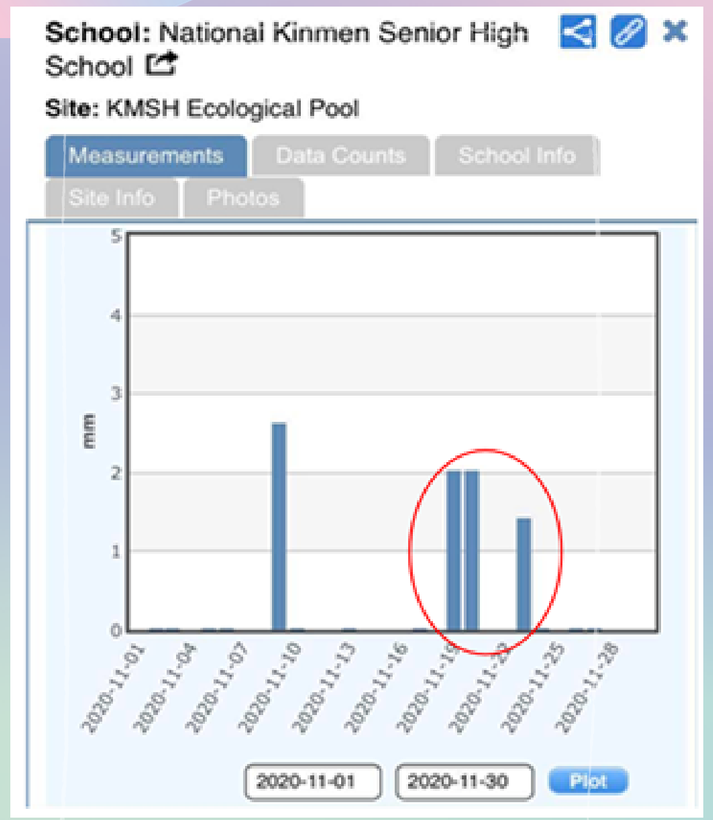
We found that the pink lake first appeared in 2020 by organizing some news information .
Out of the photos we took, we picked out two photos of the lake which demonstrated significant changes in color.From 11/21/2020 to 11/29/2020, there was rain and the lake turned from pink to normal.

11/18/2020

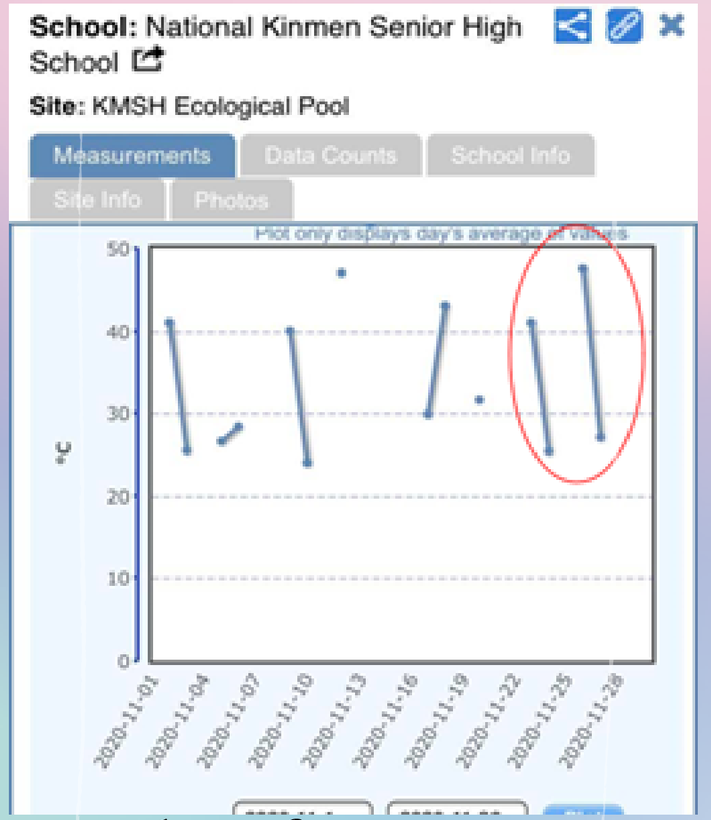
11/29/2020

Data

Be a Data Scientist



Rainfall



The surface temperature measured by ourself.

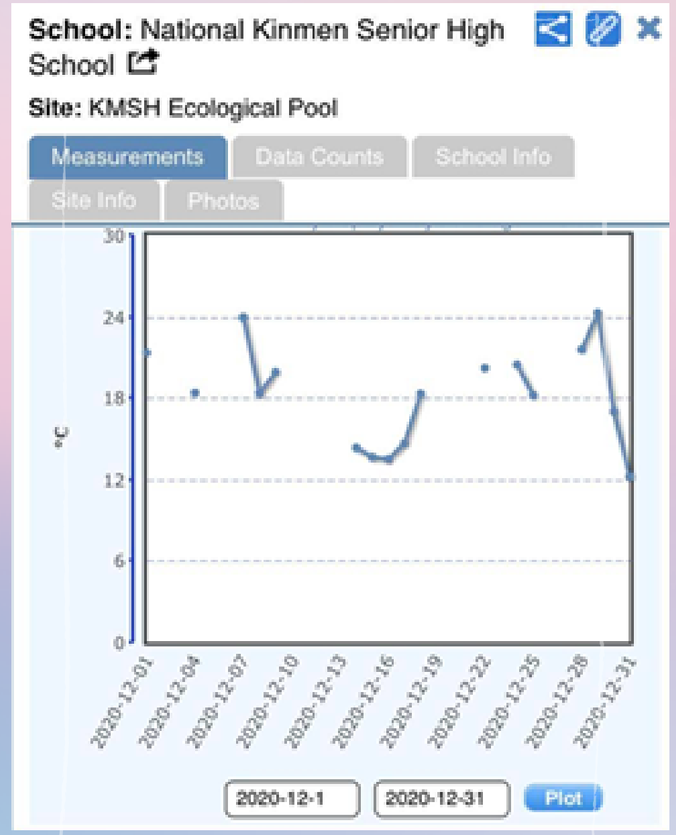
The temperature of the automatic weather station.

Data

The temperature of the soil at the automatic weather station.

Be a Data Scientist

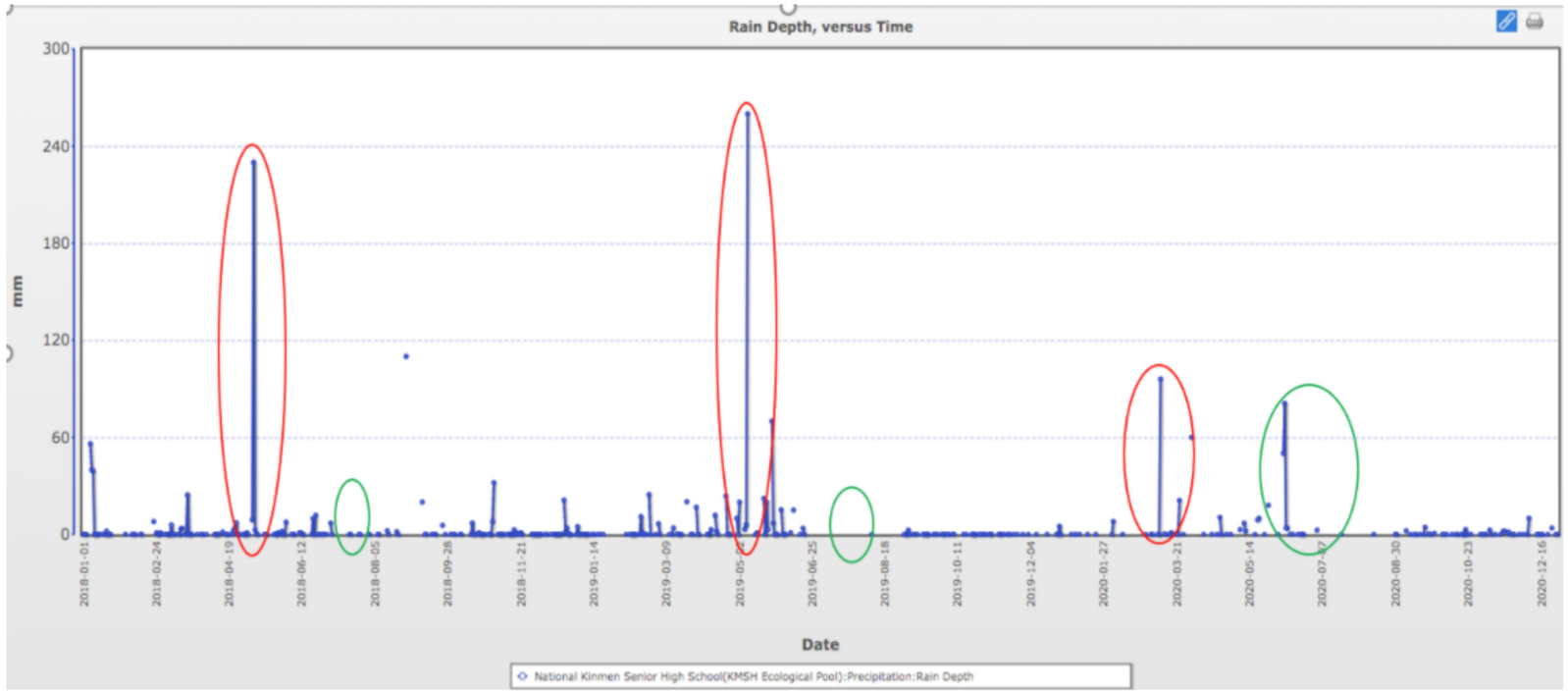
NOV.



DEC.

Because the rainfall began to increase and the temperature dropped sharply from 11/18 to 11/23, the Pink Lake changed back to its original color.

Comparison - Rainfall

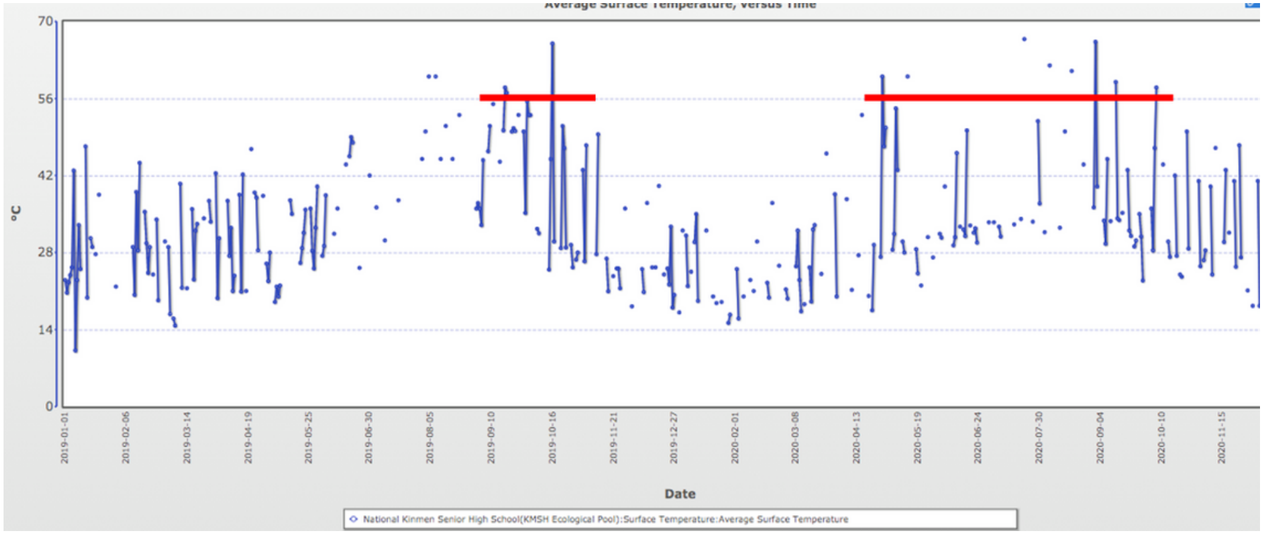


The comparison of rainfall in 2018, 2019 and 2020

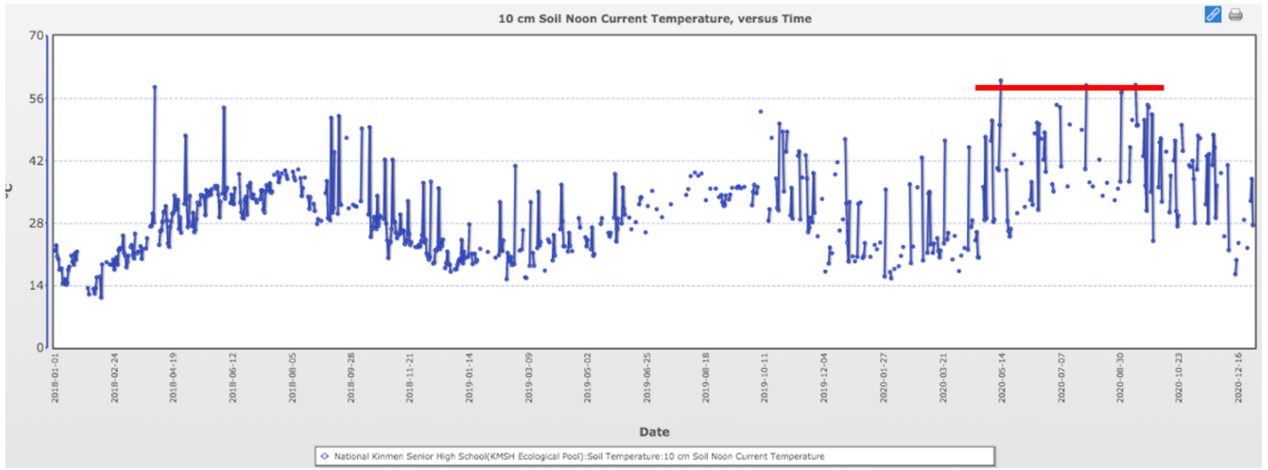
There was less spring rain in 2020, so the lake water concentration was high. Besides, some light rainfall in July resulted in the fact that the lake water would not continue to evaporate to dry, thus maintaining a certain concentration of photobacteria.

Comparison - Temperature

Be a STEM Storyteller



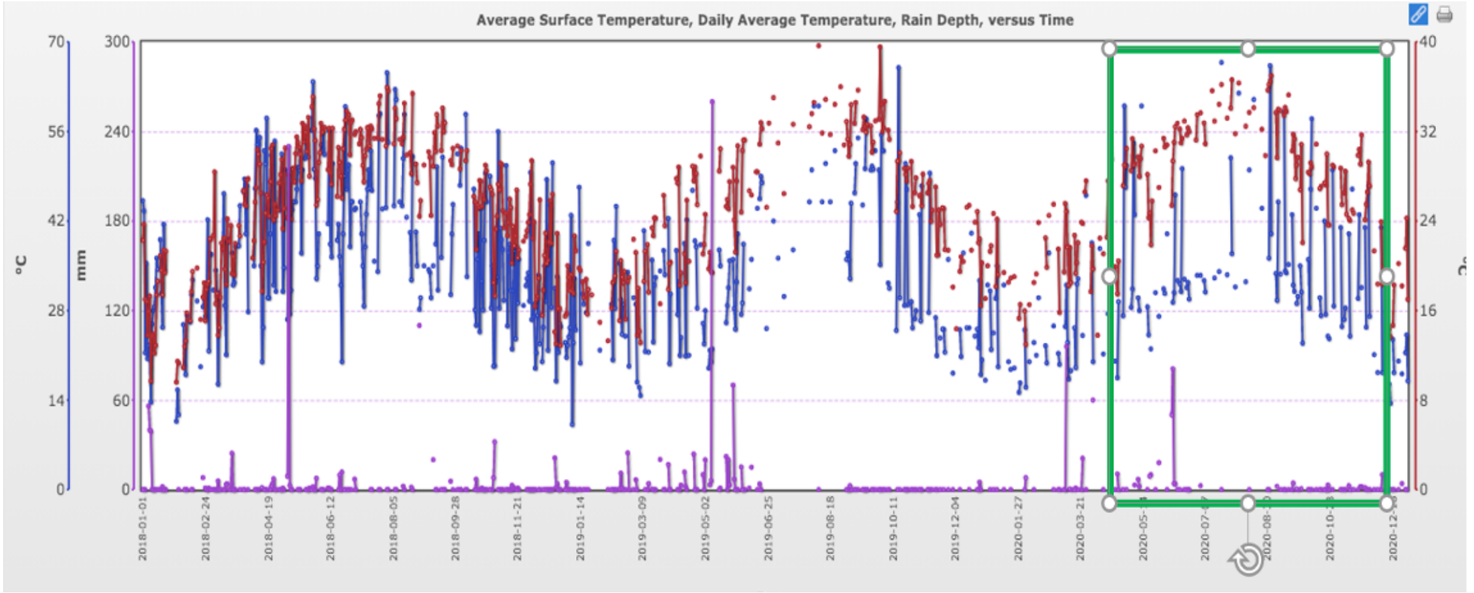
Temperature comparison 2019 and 2020



10cm Solid nooncurrent temperature from 2018-2020

The above two pictures show that the surface temperature and soil temperature are positively related.

Comparison



2018-2020 Rainfall(purple), Soil temperature(red), Surface temperature(blue)

Taken together, the surface temperature becomes high at an early time. We used the temperature measured at the school observatory to deduce the water temperature, because the temperature of the weather does not represent the temperature of the lake.

This is the observation data of the GLOBE observation team of our school for the past three years.

CONCLUSION

The Pink Lake appeared in Kinmen this year because there was less rainfall than the previous years and high temperatures continued longer than the previous years, when there was long drought and no rain in Kinmen.

The color of the Pink Lake varies depending on rainfall and temperature.

When the temperature is low and the rainfall is heavy, the Pink Lake will fade or disappear directly. When the temperature is high and the rainfall is less, the Pink Lake will remain pink or become more powdery

Thank you!