

# Southern Lee Environmental Science Club

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Issue: 1

## Does this Spanish River Confirm Life on Mars?

The potential for life on Mars has been studied for many years, with no evidence for alien life discovered yet. However, environmental study of the Rio Tinto, a river in Spain with an unusual reddish hue, may hold the key for studying the presence of water on Mars, a factor which could help confirm Martian life. The Rio Tinto's red coloring was once believed to reflect pollution from mining runoff that plagued the area, but recent discoveries have determined that it is actually caused by a mineral known as jarosite. This jarosite, as well as high levels of methane gas, can be found both at the Rio Tinto and on Mars.

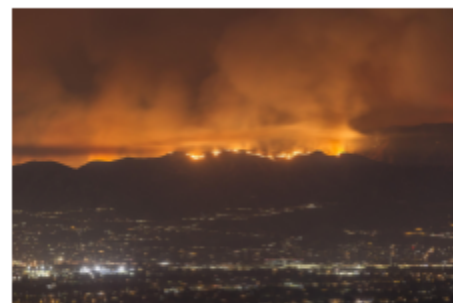
After studying the Rio Tinto, scientists have come to believe that if there were water on Mars, it would probably be similar to the Rio Tinto in color and composition. Similarities between the Rio Tinto and Mars have led some scientists to study the animals that live in, under, and around the Spanish river. This is because if the Rio Tinto is able to support life, any Martian rivers could also probably support life. Some species of bacteria and microorganisms were found to live around the Rio Tinto, but were only found deep underground. Therefore, scientists studying Mars have reasoned that in order to properly study the potential for life on Mars, they should search deep underground areas near water.

Source: [shorturl.at/ekOXZ](http://shorturl.at/ekOXZ)



The Rio Tinto, shown here, shares characteristics with the planet Mars, which could help scientists study the potential for life on Mars.

Source: <https://mybestplace.com/en/article/rio-tinto-the-river-with-otherworldly-nuances>



This is what a Californian Wildfire looks like, notice how much damage is being done

Source-<https://www.washingtonpost.com/weather/2020/09/27/california-wildfires-winds-heat/>

## Who are we?

We are the Southern Lee Environmental Science Club, open to any student who is interested in making the world a better place by learning about and implementing ways to live cleaner and more sustainable lives. We hope to plan environmentally-focused service projects such as schoolwide trash cleanups and school events to raise awareness about community-wide environmental issues.

Meetings TBD due to coronavirus.

Questions? Email the newsletter or talk to our club advisor, Mrs. Braxton.

## What is going on in California?

Recently, a change in weather has put California at a higher risk for wildfires in addition to the ones already burning. Starting in August California has been engulfed in flames that caused over 3.7 million acres to be burned and twenty six people to lose their lives. In addition, wildfires impact the environment negatively for many reasons for example they destroy habitats, which lead to more human animal interaction, and add to the amount of carbon dioxide being released when an excessive amount is already in the atmosphere. So, extinguishing and containing the wildfires are vital to the health of the environment, but that task is about to get significantly harder with the heat wave and dry winds coming to the state. The heat wave and dry winds will allow the fires to spread easier and start in different areas because of the drying out land and increased oxygen. Winds speeds up to sixty five mph have been recorded and places in land are predicted to have temperature in the triple digits. A new wildfire has already been brought about because of the weather and has caused Napa County to be evacuated. Furthermore, the wind event is stronger than forecasters expected due to the factors of a stronger pressure gradient in the Northern Rockies and West Coast and the higher airflow in the atmosphere, this means that the state is at an even higher threat than predicted. In an effort to try and reduce the risk of starting wildfires, after causing CampFire 2018, Pacific Gas & Electric is going to cut power to 89,000 people in sixteen counties. Also, red flags warnings have been issued across Northern California and forecasters will keep watch over the winds and high heat. Hopefully California will get through this without too much damage and will take as many precautions necessary to prevent these catastrophic wildfires. In the future, people should be aware of their surroundings and actions that cause such destructive events, and then a step toward a safer and healthier environment can be taken.

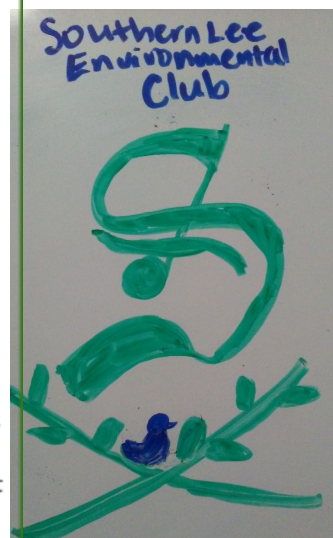
Source-<https://www.washingtonpost.com/weather/2020/09/27/california-wildfires-winds-heat/>

## Can Animals Count?

Recent science has determined that humans are not the only species to have numerical awareness. While other animals may not count change or take calculus tests, some species of bacteria have been found to recognize what is known as quorum sensing. These bacteria, *Vibrio fischeri*, live in water and have the ability to bioluminesce, or glow, but only when they are around other bacteria. This is where quorum sensing comes into play: The *Vibrio fischeri* are able to sense the presence of other bacteria, and once they are surrounded by the required number for bioluminescence, they begin to glow. This sensing occurs through chemical messages the bacteria send to each other. Other species also use quorum sensing or other forms of numbers, such as ants when deciding whether to move to a new area or wolves when determining optimal pack size when hunting.

Sometimes an animal specifically makes releases a numerical stimulus to communicate with other animals of the same species about predators. For instance, chickadees' distinctive "chick-a-dee-dee-dee" call changes the number of syllables based on predators they detect in the environment. Each predator codes for a different number of "dees" on the end of the call, and other chickadees must count the syllables in order to stay safe. Additionally, both lions and chimpanzees were able to detect the number of other lions and other chimpanzees just from recorded calls, as witnessed by their preference in a lab experiment to pick calls with one other animal as opposed to multiple. In the wild, this would help individual members of both the lion and chimpanzee species to avoid fighting multiple partners at one time and reduce the risk of injury or even death. So, the next time you're doing your math homework, think about how an animal might do it!

Source: <https://rb.gy/dmmjno>



The bioluminescent bacteria shown here is able to sense numbers to determine when to glow.

Source: <https://rb.gy/nlq1nf>

### Interested in writing for the Environmental Science Club Newsletter?

Issues come out once a month; deadline for submissions is the final Monday of the month before the issue you are hoping to write for. Email [annaboone@lee.k12.nc.us](mailto:annaboone@lee.k12.nc.us) if you want more information.

### 5 Ways to Save the Environment During COVID-19

1. Wear a reusable mask instead of using disposable ones.
2. Drink tap water instead of bottled water if you are staying at home.
3. Cut off lights when not in use or use natural light--being at home more than usual can skyrocket electricity use.
4. Limit online shopping to limit your carbon footprint from deliveries.
5. Appreciate nature by going on socially distanced hikes.

Via

<https://sustainability.berkeley.edu/news/staying-environmentally-sustainable-covid-19-pandemic-recovery>

