



*The*

*Environment*

*Magazine*

# Table of Contents

<b>Message from Editor in Chief.....</b>	<b>3</b>
<b>The Effect Of Wild Boars On Local Individuals.....</b>	<b>4</b>
<b>High-Pressure Systems And Extreme Temperatures.....</b>	<b>7</b>
<b>Environmentalists in Action.....</b>	<b>10</b>
<b>About.....</b>	<b>13</b>

# Message from Editor in Chief

My name is Henry Yao. I am Editor in Chief of the Environment Magazine.

The purpose of this magazine is to provide a platform for students of all backgrounds to express their views on current environmental issues to a broad audience. I believe that every student has the ability to make a positive difference in the world, and through this magazine, we aspire to unleash their potential. The project is open to everyone, and there are unlimited spots available for participation. We welcome all students who want to be a part of this effort.

To contribute articles to The Environment Magazine, please contact [playfndn.environment@gmail.com](mailto:playfndn.environment@gmail.com). A sample article can be found [here](#). Volunteer hours will be recognized.

# The Effect Of Wild Boars On Local Individuals

Arnold Qi

Quarry Lane School, Dublin, CA 94568

As human populations increase, and natural habitats shrink, encounters between wildlife and humans become more frequent and hostile. A local species that has gained popularity from this is the Wild Boar (*Sus scrofa*).

The Wild Boar was once only native to Europe, Asia, and North Africa, but in the 1920s it was introduced to California by a landowner in Monterey County named George Gordon Moore. His intentions were to create a hunting preserve for him and his friends, but the Wild Boars and Pigs bred together and later on the domesticated pigs were allowed to roam freely.

In recent years, Wild Boars have become a growing threat to land, natural resources, and animals. Channel Islands National Park, located in California, features many different endemic species, animal or plant species native to a specific region and not found anywhere else. One of these species is the island fox. The fox is the only carnivore unique to



Figure 1: The Wild Boar, Picture by Steve Hillebrand  
(source <https://icwdm.org>)



Figure 2: Foxes on Santa Cruz Channel Islands (source: [sfgate.com](http://sfgate.com))

California. In 2004, its numbers nosedived from 2,500 to just over a dozen left, due to wild boars. Park officials came up with the solution of hiring contractors to kill over 5,000 Wild Boars. In 2016, the species recovered and the fox was removed from the protection of the Endangered Species Act. This was the fastest a mammal has ever been removed from this list, showing just how much impact the Wild Boar had on its environment and the wildlife surrounding it. In a research article by Texas A&M, it was discovered that the animal causes many noticeable and consequential problems. One of these is the effect of the animal on

water quality. The water is directly impacted by Bacterial Impairment, which is caused by Boars disturbing nearby soil or defecating into the water.

One of the most significant impacts of Wild Boars is their destruction of agricultural crops. Farmers from California and Texas report damage to crops such as corn, wheat, and rice. Wild Boars have the ability to destroy entire fields overnight, which leads to huge financial losses for farmers. A study in Texas estimates that \$57 million worth of damage is done to crops annually by Wild Boars, while in the United States the USDA estimates \$2.5 Billion worth of total damage is done annually. This is mostly a result of their unique rooting behavior. Wild Boars use their snouts to dig into the ground and remove soil. This usually leaves multiple giant holes, which leaves land damaged, not only damaging crops, but also destroying irrigation systems and fences.



Figure 3: Wild Boars Rooting Land (source: tlake.com)

I have also been affected by Wild Boars. My house's front lawn was dug up, with random mounds of dirt and scattered holes. This also occurred throughout my community to countless neighbors, with many having to put up nets to stop them from digging up their lawn. Others would repair their lawn, or replace it with fake grass. HOA eventually stepped in, and in an effort to fix this problem, set up Wild Boar traps. This huge environmental issue could easily be fixed if governors or higher executives spent money on hiring private contractors to eliminate Wild Boars, which would help protect communities and animals from being negatively impacted

## References

"Nuisance Wildlife in Texas: Wild Pigs." Texas Parks & Wildlife Department, [tpwd.texas.gov/huntwild/wild/nuisance/feral\\_hogs/#:~:text=Rooting%20is%20the%20mechanism%20by,nutrient%20cycling%20within%20the%20soil](http://tpwd.texas.gov/huntwild/wild/nuisance/feral_hogs/#:~:text=Rooting%20is%20the%20mechanism%20by,nutrient%20cycling%20within%20the%20soil).

Rode, Erin. "5,000 Feral Pigs Were Killed to Save a California National Park." SFGATE, SFGATE, [www.sfgate.com/la/article/channel-islands-feral-pigs-fox-19549631.php](http://www.sfgate.com/la/article/channel-islands-feral-pigs-fox-19549631.php).

Wild Pigs Negatively Impact Water Quality: Implications for Land and Watershed Management. 2018.  
<https://feralhogs.tamu.edu/files/2022/06/Wild-pigs-negatively-impact-water-quality-Implications-for-land-and-watershed-management-Helcel-et-al-2018.pdf>

“Wild Pigs.” Wild Pigs / Home and Landscape / UC Statewide IPM Program (UC IPM),  
[ipm.ucanr.edu/home-and-landscape/wild-pigs/pest-notes/#gsc.tab=0](http://ipm.ucanr.edu/home-and-landscape/wild-pigs/pest-notes/#gsc.tab=0).



# High-Pressure Systems And Extreme Temperatures

Arnold Qi

Quarry Lane School, Dublin, CA 94568

California is one of the most vulnerable states to the threat of wildfires due to its dry climate, low precipitation, and arid vegetation. However, the frequency and severity of wildfires have increased in recent years due to a rise in temperatures. The recent heat waves are mostly caused by high-pressure systems. A high-pressure system is an area that has higher air pressure than the areas around it, and it's caused by air cooling and sinking. Although high-pressure systems are usually associated with calm and stable weather, they also cause heat waves. High-pressure systems also cause clear skies, and with less clouds comes dry conditions.

High-pressure systems can also initiate air stagnation, a process that builds up pollutants and significantly affects air quality. This happens when atmospheric conditions created by high-pressure systems prevent vertical mixing of air, which traps pollutants closer to the ground. During periods of air stagnation, pollutants build up from vehicles, fossil fuels, and burning organic matter. This creates smog and reduces visibility, and combined with the lack of wind and low movement in the atmosphere makes high-pressure systems dangerous.

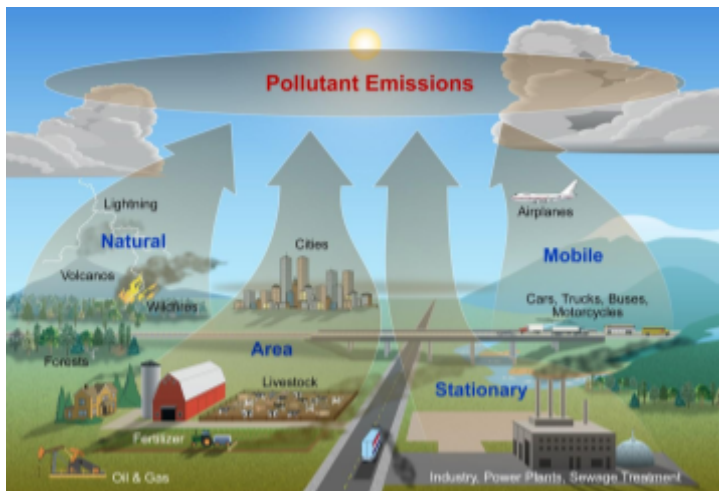


Figure 2. Air Stagnation Diagram (source: accuweather.com)

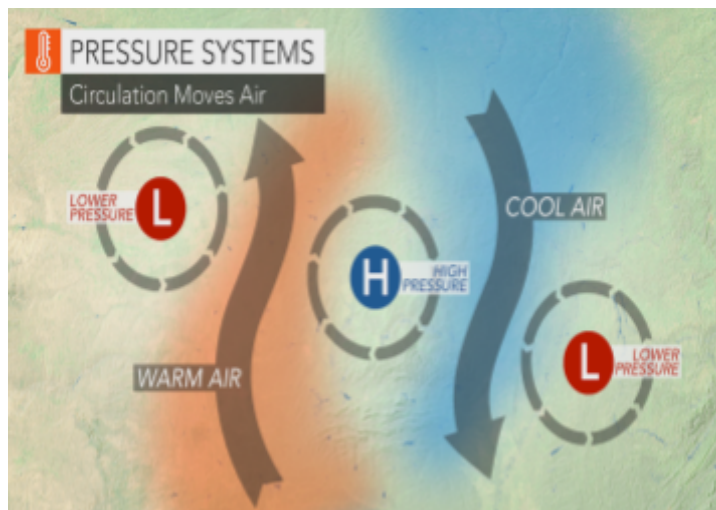


Figure 1. High Pressure Systems Diagram (Source: accuweather.com )

Prolonged air stagnation also leads to the development of ground-level ozone, a harmful air pollutant. This forms when nitrogen oxide and volatile organic compounds from vehicles, power plants, or fossil fuels react in the sunlight.

Health impacts from air stagnation can be substantial and sometimes

permanent. Short-term exposure to high levels of air pollution can cause irritations, headaches, and respiratory problems such as coughing and shortness of breath. Long-term exposure can lead to asthma, bronchitis, cardiovascular issues, and sometimes even death. In order to lessen the exposure to air pollution, people should wear masks, drink more water, and stay indoors.

During times of extreme heat, utility companies such as PG&E implement power shutoffs known as Public Safety Power Shut Offs (PSPS) to reduce the risk of wildfires. These power shut offs disrupt the power supply to a certain area or region of people, but for a good reason. Extreme heat can cause electrical equipment to overheat and malfunction, creating sparks and potentially igniting a wildfire. The downside of PSPS is that individuals who do not own solar panels or any type of backup generator will be greatly affected. In especially hot weather, without A/C or the ability to cook, they could face significant discomfort and have potential health risks.

Extreme heat has also been a factor that is damaging the environment in California. Heat can cause dry conditions which contribute to constant droughts in the state, reducing water availability and potentially killing species. Wildfires also become more frequent and intense because of this.

Recent wildfires in California have been going on,

including one on July 22, 2024, which led to 6 homes being ravaged and 7 homes being completely destroyed. This issue has also affected my community, more specifically about 3 years ago. Wildfires near my community were forcing people to evacuate and caused our outside air quality to plummet. In order to solve this issue, individuals could travel by walking instead of driving, reducing the use of fossil fuels and industrial emissions.



Figure 3. PG&E Power Lines Shut Off Due To Heat  
(source: ktvl.com)

## References

“Ground-Level Ozone (O<sub>3</sub>) Pollution | ADEQ Arizona Department of Environmental Quality.” [www.azdeq.gov](http://www.azdeq.gov),  
[www.azdeq.gov/ground-level-ozone-o3-pollution#:~:text=Ground%2Dlevel%20ozone%20or%20the](http://www.azdeq.gov/ground-level-ozone-o3-pollution#:~:text=Ground%2Dlevel%20ozone%20or%20the).



News, A. B. C. "No End in Sight as Record-Breaking Heat Wave Continues." ABCNews, [abcnews.go.com/US/record-breaking-heat-blankets-west-end-sight/story?id=111777019](https://abcnews.go.com/US/record-breaking-heat-blankets-west-end-sight/story?id=111777019).

Press, Associated. "Wildfires Plague the West amid a Scorching Heat Wave and High Winds." WJHL, WJHL | Tri-Cities News & Weather, 23 July 2024, [www.wjhl.com/news/national/ap-wildfires-plague-the-west-amid-a-scorching-heat-wave-homes-burn-in-southern-california/](https://www.wjhl.com/news/national/ap-wildfires-plague-the-west-amid-a-scorching-heat-wave-homes-burn-in-southern-california/).

"Smog and Health-Historical Info." Aqmd.gov, 2019, [www.aqmd.gov/home/research/publications/smog-and-health-historical-info](https://www.aqmd.gov/home/research/publications/smog-and-health-historical-info).

# Environmentalists in Action

In this issue, we would like to thank the following environmentalists.

May 26, 2024: Joyce Miao, Osvaldo Leyva-Li, Eduardo Li-Leyva, Leonardo Li-Leyva, Alex Tong, Sophie Tong and Henry Yao cleaned up Dougherty Valley High School parking lot and the surrounding areas.



July 28, 2024: Alex Tong, Sophie Tong, Allan Wei and Henry Yao cleaned up the Marilyn Kane Trail.





September 15, 2024: Elin Cheng, Ethan Cheng, Charles Chin, Larry Tang, Alex Tong, Sophie Tong and Derric Tu cleaned up the Bernal Community Park.



# About

**The Environment Magazine** is published by the Environment Club. It collects introductory articles on environmental protection written by youth volunteers, with the goal of educating students and parents on how to protect the environment. It aims to provide a platform for all students to express their opinions and inspire change through activism. It also empowers students to become environmentalists and make a positive impact on the world.

**The Environment Club** is a group of passionate middle and high school students dedicated to environmental protection. We started by organizing youth volunteers to clean up the trails and streets in our local community, and now we're taking the next step by promoting awareness and change through our publication, The Environment Magazine. Our goal is to inspire others to take action and make a positive impact on the environment, both locally and globally. The Environment Club is a subdivision of the PLAY Foundation, a 501(c)(3) non-profit organization.