



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Fatima S. Gasmelseed	Project Number J1109
Project Title Carbon Dioxide in the Lakes	
Abstract Objectives/Goals Ocean acidification is a worldwide problem that concerns ocean life and it is caused by the excess carbon dioxide that comes from factories, cars, electricity and more. Many scientists and researchers are working hard to find a solution to this problem but they are mainly focusing on changing or buffering the ocean. What many people don't know is that lakes have a big impact on the oceans acidification. Lakes let out more carbon dioxide than they absorb which is nearly as much as the ocean lets out. This project investigates what qualities help lakes absorb more or less carbon dioxide to see what kind of lakes can absorb more carbon dioxide and a suggestion to a more efficient solution for ocean acidification. Methods/Materials To find the amount of carbon dioxide lakes/water absorb in a day I first tested their pH and KH levels in degrees. I used a pH meter to test their pH in degrees and a KH test kit to find the KH levels in degrees. After testing I used the results and compared the pH and KH data in a pH and KH carbon dioxide comparison chart to find the amount of carbon dioxide absorbed from each lake or water. Results The control which was rainwater had the least amount of carbon dioxide in it while the Marina Lake had the most amount of carbon dioxide in it and it was also the smallest and the most polluted lake that was tested. El Estero had the second to least amount of carbon dioxide and it was the biggest and cleanest lake. Laguna Del Rey and Roberts Lake have the most cars near them and they're results are in the middle. Conclusions/Discussion After analyzing the results it can be said that lakes are mainly affected by the amount of pollution in them and their size. Smaller and more polluted lakes absorb more carbon dioxide while bigger and less polluted lakes absorb less carbon dioxide. This means that if the smaller and more polluted lakes become cleaner less carbon dioxide will go into the atmosphere lowering the amount of carbon dioxide being put into the atmosphere.	
Summary Statement Lakes that contain more pollution and are small absorb more carbon dioxide so cleaning lakes will lower the carbon dioxide in the atmosphere for the ocean to absorb.	
Help Received I conducted the experiment and project by myself but I received a tip from the Monterey Bay Aquarium Research Institute, who told me that it is easier to test carbon dioxide in freshwater than saltwater and Ralph Keeling told me that the ocean absorbs more carbon dioxide than lakes.	