



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Peter N. Krasznekewicz</b>	<b>Project Number</b> <b>J0708</b>
<b>Project Title</b> <b>What Are the Effects of Depth and Wave Height on Dissolved Oxygen Levels in Ocean Water?</b>	
<b>Objectives/Goals</b> I was trying to find out whether depth and wave height will have an effect on dissolved oxygen levels in three different dive sites around Monterey, Carmel, and Point Lobos. I thought that depth and wave height will both have an effect because the deeper the water, the lower the temperature, therefore raising oxygen levels. Also, the waves will absorb oxygen, which will be mixed into the water oxygen levels.	
<b>Abstract</b> I chose three dive sites with different wave heights around Monterey, Carmel, and Point Lobos. I took samples of the water at the surface, and at depths of five meters, ten meters, fifteen meters, and twenty meters. I used a Lamotte oxygen test kit to discover the oxygen levels. I also took two dives at each of the three dive sites. At each depth I recorded the temperature. I recorded all the data at the end of the experiment and analyzed my complete data to see the effect of depth and wave height on dissolved oxygen levels around Monterey, Carmel, and Point Lobos.	
<b>Methods/Materials</b> I chose three dive sites with different wave heights around Monterey, Carmel, and Point Lobos. I took samples of the water at the surface, and at depths of five meters, ten meters, fifteen meters, and twenty meters. I used a Lamotte oxygen test kit to discover the oxygen levels. I also took two dives at each of the three dive sites. At each depth I recorded the temperature. I recorded all the data at the end of the experiment and analyzed my complete data to see the effect of depth and wave height on dissolved oxygen levels around Monterey, Carmel, and Point Lobos.	
<b>Results</b> The results of my experiment show that Coral Street Cove (high wave height) had the highest average dissolved oxygen levels (6.72 PPM), Monastery Beach (low wave height) with the second highest average levels (6.52 PPM), and lastly Breakwater Cove (medium wave height) had the lowest results with 4.94 PPM.	
<b>Conclusions/Discussion</b> Depth seemed to be the major factor in dissolved oxygen levels. At the surface, the dissolved oxygen levels were the lowest and at twenty meters they were the highest at all three dive locations. As the depth increased the temperature decreased, which indicates that temperature is a factor. Colder water generally tends to hold more oxygen than water. On the other hand, wave height seemed to have no effect on dissolved oxygen levels in the ocean. Coral Street Cove, which was high wave height, had the highest results, but Monastery Beach's dissolved oxygen levels were higher than those of Breakwater Cove even though Breakwater Cove had higher wave levels. My experiment is important because as ocean warming becomes a more imminent threat, dissolved oxygen levels decrease and this may kill off habitats and marine animals. This information can be used in the future to monitor dissolved oxygen levels and to see how rapidly ocean environments are deteriorating.	
<b>Summary Statement</b> My project is about the impact of depth and wave height have on dissolved oxygen levels in ocean water.	
<b>Help Received</b> Father drove me to dive sites; Dive buddy took pictures of me while diving	