



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Colin J. Manfredo</b>	<b>Project Number</b> <b>J1916</b>
<b>Project Title</b> <b>The Effects of Different Seawater Salinity Solutions on Plant Growth</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this study is to see if diluting different seawater salinity levels would have a negative effect on plant growth and production. The purpose is to find an alternative water source for farmers during drought years. <b>Methods/Materials</b> Mixed ocean water and freshwater, measuring cups. Tested salinity levels with Hach Sension MM150, measured onions, lettuce, broccoli, cauliflower, tape measure, leaf count. <b>Results</b> The broccoli plants were not affected by any of the saltwater levels. The leaf count increased slightly in every level used. This shows that the seawater being irrigated was not impacting growth levels. Cauliflower also showed some of the same results except at 100% saltwater levels. <b>Conclusions/Discussion</b> Evidence showed that diluted saltwater will not effect the growth rate of certain plants, especially broccoli. I found that the 5% and 10% solutions all grew the best - proving that saltwater could be used as a form of irrigation for farmers. This is an alternative form of irrigating during drought years.	
<b>Summary Statement</b> I showed that certain vegetable plants can grow in diluted seawater solutions, proving that saltwater can be used as a form of irrigation for farmers.	
<b>Help Received</b> Jim Wegley - Civil Engineer, helped show me how to use the Hach Sension MM150. I designed, built, and performed the experiments myself.	