



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Sae H. Ackerstein</b>	<b>Project Number</b> <b>J1301</b>
<b>Project Title</b> <b>The Seals of Elkhorn Slough: How Close Is too Close?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This year for science fair I studied the effect of human/boat disturbance on harbor seal behavior in Elkhorn Slough.</p> <p><b>Methods/Materials</b> I observed 5 seal behaviors; rest, comfort movement, alert, locomotion, and snort. I observed from a cliff above the seal haul-out area. I chose 5 seals and observed each seal for 10 seconds sequentially for 10 minutes, then chose 5 new seals and repeated. I recorded the behavior, the number of boats present if any, and what distance they were from the seals.</p> <p><b>Results</b> I found that there was no correlation between the number of boats and the amount of disturbance. The data shows that seals became alert from the boats in zone 3(150-100 meters), calmed down in zone 2(99-50 meters), and became substantially more alert when vessels entered zone 1( 49-0 meters).</p> <p><b>Conclusions/Discussion</b> Based on my data, I would recommend that when visiting Elkhorn Slough, it is fine to go by the seals but to move quickly when in the 150 to 101 meter zone and the 50 and under area. The 100 to 51 meter area is a good zone for observation.</p>	
<b>Summary Statement</b> When I asked how seal behavior changed in response to human disruption, I found that seals were more disturbed when kayaks were 150 to 100 meters and 50-0 meters away from the seal haul-out area.	
<b>Help Received</b> I designed the project and analyzed the data but my mom helped create the graphs on the computer.	