



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Neal B. Shipman	<b>Project Number</b> <b>J1832</b>
<b>Project Title</b> <b>Marsh Invasion: Testing if Early Germination Gives an Edge to Algerian Sea Lavender</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective was to determine which plant will germinate faster, the invasive plant (<i>Limonium ramosissimum</i>) or the native (<i>Limonium californicum</i>) under the conditions of light (one layer of fiberglass window screen and ambient) and salinity (0, 15, and 30 ppt)?</p> <p><b>Methods/Materials</b> -Plywood (for greenhouse); -Plexiglass (for greenhouse); -60 petri dishes with lids; -300 LICA seeds (native plant); -300 LIRA seeds (invasive plant); -Pipette; -Salt; -Graduated Cylinder; -Buckets (for holding water); -Potting soil; -Green/blue electrical tape; -Fiberglass window screen; -Refractometer ; -Tap water.</p> <p><b>Results</b> I believe that my results were appropriate to support the claim. The first germination was on 11/14/14 in the nonnative 0 salinity level. Although the invasive plant germinated first, it was not the first on all salinity levels. Germination in the 15 and 30 ppt salinity level was first reached by the native plant. In total, the native plant had 147 germinated seeds while the invasive one had 175.</p> <p><b>Conclusions/Discussion</b> My hypothesis was that the nonnative plant (<i>Limonium ramosissimum</i>) would germinate faster at all levels of light and salinity. I thought this because invasive plants are normally more adept and aggressive than native ones. To test my hypothesis, I ran an experiment to test the speed in which the two different species of plant germinated. I believe that my results were appropriate to support the claim. The first germination was on 11/14/14 in the nonnative 0 salinity level. Although the invasive plant germinated first, it was not the first on all salinity levels. Germination in the 15 and 30 ppt salinity level was first reached by the native plant. In total, the native plant had 147 germinated seeds while the invasive one had 175. In conclusion, my hypothesis was partially correct. The invasive plant germinated the fastest, but not in all of the salinity and light levels. Towards the end of the experiment, some of the germinated seeds started growing. If I were to continue the experiment, I would measure and compare the height of the plants grown.</p>	
<b>Summary Statement</b> My project was to determine the germination rates of invasive and native species so that the information could be used to find a way to counter the invasive plant.	
<b>Help Received</b> Plant specifics and background research was helped by my mother. Construction of the greenhouse and writings was helped by my father.	