



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Soquel Macdonald	Project Number J1218
Project Title Deer Crossing	
<p style="text-align: center;">Abstract</p> <p>Objectives I wanted to find out if deer would cross a road more quickly if mountain lion scent (urine) was present in a limited concentration in the middle of the road. My hypothesis was that with the mountain lion scent deer would cross the road more quickly but with the same frequency as without the scent.</p> <p>Methods Capsules, cotton balls, mountain lion urine, water, drill, two game cameras, two roads with natural deer traffic. Using two sites, one with mountain lion urine capsules in the road (experiment) and one with water capsules in the road (control), I compared deer captured on game camera per 48 hours. I also compared the time it took each deer to cross the camera's field of view (as a surrogate for time it takes to cross the road). Each experiment lasted 48 hours, followed by a 24 hour break, and then experiment and control sites were switched and the experiment repeated for a total of four times.</p> <p>Results The average number of deer per 48 hours for the combined controls vs. experiments was 6.3 ± 5.9 vs. 3.0 ± 2.2 deer ($p = 0.34$). The average seconds in the field of view for combined controls vs. experiments was 6.2 ± 3.6 vs. 7.6 ± 3.3 seconds ($p = 0.27$).</p> <p>Conclusions My results did not support my hypothesis, suggesting fewer deer per day and slower crossing in the experiment arms, rather than the opposite. According to my statistical analysis these differences were possibly due to chance. If the mountain lion scent truly caused the differences I observed, I think this may have happened because the scent had the effect of either scaring the deer away or causing them to proceed slowly and cautiously.</p>	
Summary Statement Deer do not cross roads more quickly when in the presence of mountain lion scent.	
Help Received Dusten Macdonald, Nick Albert(fish and game warden), Heidi Macdonald, Mr.Haller, Darren Ward (Biology professor)	