



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2019 PROJECT SUMMARY**

<b>Name(s)</b> <b>Luke Tanguay</b>	<b>Project Number</b> <b>J1915</b>
<b>Project Title</b> <b>Do Environmentally Friendly Dish Soaps Clean Oil Off Feathers as Well as Dawn?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> My objective is to evaluate the effectiveness of dish soaps in removing oil from bird feathers in case of an oil spill. Dawn Ultra Dish Soap is the current standard for cleaning birds, but is known to have petroleum as a trace ingredient. I want to see if one of the new, more environmentally friendly dish soaps will perform as well or better than Dawn.</p> <p><b>Methods</b> Feathers, 4 different dish soaps, digital scale, synthetic motor oil, pipettes, protective gloves. Weighed 5 feathers for each brand of dish soap before applying oil, after applying oil and after each of two cleanings. Measured percent of oil removed for each trial to determine effectiveness of dish soap.</p> <p><b>Results</b> Removing oil from feathers is difficult, none of the dish soaps removed more than 33% of the oil after the first cleaning. After two cleanings Dawn removed 67% of the oil and the best environmentally friendly dish soap only removed 55% with the remaining two only removing about 33%. Dawn performed best in both cleaning stages.</p> <p><b>Conclusions</b> Dawn Ultra was the best dish soap I tested at removing oil from bird feathers. The more environmentally friendly dish soaps did not perform as well. My results show Dawn Ultra should remain the standard for cleaning oil soaked birds.</p>	
<b>Summary Statement</b> I found that Dawn Ultra dish soap should remain the standard for cleaning oil soaked birds, none of the more environmentally friendly dish soaps removed oil from feathers as effectively.	
<b>Help Received</b> Curt Clumpner, Deputy Director, Animal Care Operations, Oiled Wildcare Network, UC Davis, suggested articles for me to read. My parents helped me get supplies and supported me with timing and measurements while I conducted the experiment.	