



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Lauren D. Ivey</b>	<b>Project Number</b> <b>J0611</b>
<b>Project Title</b> <b>Slow The Flow: Controlling Erosion on Dirt Roads</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to determine the most effective water bar to use on dirt roads. A water bar is an alteration of the road terrain to divert water flow in order to minimize erosion.</p> <p><b>Methods/Materials</b> A model road (4'Length x 2'Width x 3"Depth) was built from wood and filled with red earth (the soil most common to this local area). A 45-degree mound water bar was formed on the model. Droplets of water, comparable to a moderate rainfall, were lightly sprayed on the model. This process was repeated with a 30-degree mound water bar, a 45-degree rolling dip water bar, and a 30-degree rolling dip water bar. The experiment was done on a surface with no water bar as well to compare the difference when no water bar of any kind is formed. Three more trials were done following the same process.</p> <p><b>Results</b> The 30-degree angle more effectively controlled erosion than the 45-degree angle, using either the mound or the rolling dip style water bar. When the data from the 30-degree angle trials were averaged, the rolling dip had slightly better results. The data from the 45-degree angle indicated it was not as effective as the 30-degree angle; however, the rolling dip was more effective than the mound. The trials involving the surface with no water bar had more than double the erosion as the least effective water bar.</p> <p><b>Conclusions/Discussion</b> Using the data from this study, I conclude that the rolling dip and mound water bars are equally effective in minimizing erosion on dirt roads at a 30-degree angle. Based on the information collected from interviews with two experts, I recommend a rolling dip style water bar because mounds are quickly flattened by vehicle traffic.</p>	
<b>Summary Statement</b> This project compares four kinds of water bars in order to determine which is most effective in minimizing erosion on dirt roads.	
<b>Help Received</b> Mother edited (except logbook); father supervised building of model	