



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Elizabeth Avalos	Project Number J0903
Project Title Does Repetitive Flooding Affect Soil Absorption?	
Objectives/Goals My goal was to test the soil to see if repetitive flooding would affect it. Differences in soil absorption in my local neighborhood gave me the idea for this project. I studied soils from different places. I hypothesized that flooding was going to affect the soil.	
Abstract Methods/Materials Thirteen of my classmates brought in soil samples from their homes. I used thirteen cups to isolate each soil sample. I weighed each sample so it would weigh 200 g, then I used a graduated cylinder and poured 30 mL of water into each sample. The next day, I would pour off the water that remained. I measured this water and poured it back in the soil. I kept on doing this process for about 10 days. Also, prior to flooding, I screened each sample with sieves to determine the soil components and percentages of gravels and sands.	
Results My results showed that repetitive flooding did affect soil absorption. Soil can contain only a certain amount of water because once it reaches its field capacity, it will not absorb more until water movement occurs outward from the soil. Soils disperse water better throughout substance material with lower gravel contents. Sands in the medium range are ideal at soaking up large amounts of water, dissipating it below to the soil horizons, and also for allowing rapid evaporation. The more sand a soil has, the more water it absorbs.	
Conclusions/Discussion During my project, I was particularly interested in the relationship of the texture of each soil sample and how much water it could hold during the flooding. Gravel does not allow as much water retention within a soil because it does not make as many open pockets as sand does. The closeness of the spaces of the sand particles and the small size of the pores allows more water to quickly pass from one layer to the next. Proper attention must be given to soil analysis where flooding is likely due to poor soil conditions. Attention must be given to the sand content, as sand should be the largest component of flood-prone soils.	
Summary Statement Repetitive flooding affects soil absorption.	
Help Received Teacher as facilitator.	