

Euler Vasquez

Professor Bangali

ENGL 21007, Writing for Engineering.

February 27, 2024.

Video: [Do Droughts Make Floods Worse?](#)

Title	<p>Dos dry soil absorb less or more water, and does that affect floods in any way?</p>
Abstract	<p>Based on a video by Rob Thompson a meteorologist, we can observe how dried up grass absorbs water in a slower rate than damp, and moist grass. There for the hypothesis is that dry soil causes more damage and makes floods worse in general.</p> <p>Different types of soil are compared by putting the different soils in a tube and putting water on top of it and calculating the time it takes for the water to absorb. Dry and hydrophobic soil makes water penetrate slower than wet soil. Although in a controlled environment such as a laboratory dry hydrophobic soil does reduce the speed of water absorption it does not necessarily mean that it will increase the damage caused by floods as there are other factors to consider. It is not clear if dry soil makes flooding worse or not, but Dry soil does absorb water in a slower rate.</p>
Introduction	<p>Based on a video by Rob Thompson a meteorologist, we can</p>

	<p>observe how dried up grass absorbs water in a slower rate than damp, and moist grass. There is a hypothesis that dry soil causes more damage and makes floods worse in general; this question impacts my field of engineering to see the possible damage to infrastructure and the environment. There is a Field of Specialization of Civil Engineering named Environmental Engineering/Water Resources that focuses on issues like this regarding floods, etc. In general, the classification of soil and its correlation to water/floods are very crucial for the planning of projects in various areas.</p>
<p>Material</p>	<p>A clear 12 in tube with a diameter of 6 inches. Different soils with different levels of moisture (Dry soil can be replicated with sand, and hydrophobic sand.). A hose and a bowl to collect water.</p>
<p>Methods</p>	<p>Put the tube above grass with high moisture, and above grass with normal moisture, and dry soil. Or in a control environment test putting different soil inside of the tube, this can be the three types of soil with sand replacing dry soil. Test several types of soils and the speed of water absorption, test dry soil (sand) first alone and then with a layer of hydrophobic sand on top of it. Test by first wetting a type of soil and then adding more water to see if there is a difference in water absorption.</p>

Results	<p>When the experiment is done, it should reveal that dry soil (sand) with a layer of hydrophobic sand takes an abnormal rate to absorb water than any other type of soil. But it also reveals that wet soil can absorb water at a high rate, this includes dry soil with hydrophobic sand.</p>
Discussion	<p>Although this experiment does reveal the impact of dry soil in the environment it just opens the door to multiple more questions regarding the severity of floods and if dry soil further boosts the damage floods will have in the environment. When it comes to this last question there is not a right answer but only guesses as many factors can alter the way a flood affects the environment, and engineers cannot rely on a single basis of information.</p>
Conclusion	<p>To conclude, this experiment was done to analyze how difference in soil moisture affects soil's ability to absorb water. It was hypothesized that dry hydrophobic soil takes way longer to absorb water and although it is true based on this experiment it does not resolve the answer if floods occur in drier land this land would be affected worse than normal soil.</p>
Acknowledgements	<p>Practical Engineering: Do Droughts Make Floods Worse? Roblet: Why heavy rain might be dangerous after drought</p>

