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A Science Service Feature

? WHY THE WEATHER ?

Dr. Charles F. Brooks,
of Clark University,
discusses:

FORESTS AND STREAM FLOW

How does a forest cover affect the run-off from a slope, and the flow of local streams? Considering two similar hill sides, one forested, the other open, on which the same amount of rain falls, we may note first that in the forest perhaps one fourth of the rain is intercepted by the leaves and branches of the trees and fails to reach the ground. Less water, then, reaches the ground in the forest than in the open; part of this water again will be taken up and evaporated by the trees. A forest will evaporate more moisture than will grass or low growth. It is evident that the total run-off will be greater from the open slope than from the forested one. This run-off, however, is too rapid to be useful. The bare ground receives a large amount of water and fails to hold it, the streams quickly become flooded, and if the water is being stored, a large part goes over the dam and is lost. The forested slope, however, although it yields a smaller total run-off, does not allow the surplus to waste itself in a sudden flood. The forest soil is porous and sponge-like and it holds more water. Litter and roots further delay the run-off. A week after a heavy rain, then, there is usually more water in the forest soil than on a similar non-forested slope. Consequently, streams fed from the forest will fill more gradually and allow their water to be stored and used.

(Tomorrow: Climate)

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