

FACT SHEET

No. 28

Timber & Timber Harvesting in West Virginia

Spring, 2001

Revised, June, 2002

Timber Harvesting And Flooding.

Rainfall on severely compacted soils and impervious surfaces results in surface runoff. In forests, however, water is infiltrated rapidly and thereafter moves underground instead of overland, a characteristic that sets forests apart from all other ecosystems. When streamflow exceeds the capacity of stream channels, it spills over on the flood-plain causing flooding. This is a natural process that prior to human occupation, when these areas were in forests, did not cause much damage. However, human encroachment on flood plains has resulted in the construction of residences and other structures that are highly susceptible to damage from large flood events. The key point to remember is that the main contributor to large flood events is excessive amounts of rainfall over a short period of time.

In Appalachia, after nearly every flood event, activists claim that timbering and/or surface mining contributed greatly to the event. This is a possibility, but it is seldom true. The real cause is nearly always too much water in too short a time. Consider that one inch of rain per acre is 6, 272,640 cubic inches or 3,630 cubic feet or 27, 154 gallons or 113 tons. A small watershed of 1,000 acres would receive 113,000 tons of water for each inch of rain. If the soil storage capacity is already filled, much of it will move to the streams. Consequently, when a large part of 113,000 tons of water flows rapidly down a narrow valley in a short time it can be and sometimes is a tremendously destructive force.

In April of 1973, the President's Advisory Panel on Timber and the Environment, released a study conducted by Dr. Earl Stone. Dr. Stone concluded (Appendix M): **"Cutting of trees, even clearcutting, does not immediately change the water handling capacity of a forest soil. Unless otherwise disturbed, the forest floor is still physically intact, water entry rates remain very high and no overland flow occurs. Even on heavily cut areas, regrowth of trees or other vegetation normally occupies the soil long before the stabilizing influences of the former forest have disappeared."** Data has not been forthcoming to change this conclusion.

In West Virginia, forest fires are a contributing factor to rapid runoff. Fire removes the leaf litter and humus and the infiltration or percolation powers of the soil are greatly changed. Each raindrop dislodges a bit of soil and the resultant flow of excessive water is muddy from the contained sediment. A pebbly surface soon results. Thus, **fire greatly lessens the absorbent potential of the forest floor. Forest fire burned land, particularly repeatedly burned land, can accelerate overland flow.**

(Jim Kochenderfer)

This publication is distributed free by the Timber Committee, West Virginia Forestry Association, P. O. Box 718, Ripley, WV 25271. Please call (304-372-1955) or write for additional copies, topics or for a list of speakers and their availability.