Geophysical Research Abstracts
Vol. 18, EGU2016-17836, 2016
EGU General Assembly 2016

A Simple Field Guides to Identify Fire Effects on Soils

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Following wildfires post fire assessment personnel or teams assess immediate post-fire watershed conditions. These assessment teams must determine threats from flooding, soil erosion, and instability in a relatively short time period. Various tools and guides have been developed to assist in that process. A soil burn severity map is often the first step in the rapid assessment process. It enables BAER teams to prioritize field reviews and locate burned areas that may pose a risk to critical values within or downstream of the burned area. Five field parameters are easily determined in the field 1) remaining ground cover and characteristic, 2) ash color and depth, 3) soil structure, 4) fine roots, and 5) soil water repellency. All parameters are visual identified except water repellency which can be determined by the Water Drop Penetration Time (WDPT) test or Mini-Disk Infiltrometer (MDI). Often times the MDI test takes less time, is less subjective, and provides a relative infiltration rate which the WDPT test does not. The MDI test results are often put into “degree of soil water repellency” categories (strong, weak, and none). These field procedures that indicate the fire effects on the soil conditions help assessment teams consistently interpret, field validate and map soil burn severity.