

Fire Analysis: A Concept for Integrating Fire-Related Analyses at a Large Scale

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Wildfire poses special problems for land-use planners. Responses to fire must be planned in a short period immediately after a fire, relying heavily on information compiled before the extent and severity of the actual fire is known. Secondly, it has been difficult to learn from past experience because the effects of fire and post-fire rehabilitation are poorly known, especially at a large scale. Thirdly, wildfire sweeps over the landscape commonly without regard to administrative or watershed boundaries, and its effects extend beyond the burned area. This engages a variety of analytical approaches that are difficult to relate because they are based on different jurisdictions, purposes, and worldviews. There are conflicts, gaps, differences in scale, and inconsistencies. In particular fire effects have not been linked to downstream resources over a sufficiently large scale.

A comprehensive fire analysis procedure that incorporates all pre- and post- aspects of fire and related land management does not exist in practice. Our vision of fire analysis resembles watershed analysis by involving a wide range of problems and disciplines over a wide range of scale, designing for later revision, and not deciding land-use practices or policies. Fire analysis is an integrated ecological, social, and economic approach to fire planning. It uses a multi-scale approach to assure that issues are examined in context at relevant scales. At the largest scale, a comprehensive fire analysis incorporates a landscape having the same fire regime and domain of effects, thereby informing smaller-scale, issue-specific analyses. Fire analysis is intended to complement and integrate previous and ongoing analytical efforts, including Watershed Analysis, Roads Analysis, landscape analyses, NEPA analyses, and all other relevant planning and analysis products. Although we envision fire analysis filling the gap for needed information for post-fire rehabilitation and salvage, it must also relate with or be incorporated in Fire Management Plans that analyze for fire suppression and fuels management. Steps in a comprehensive fire analysis are described in our paper.