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Into the Fire: How Effective is Fuel Treatment in the US?

Questions to be Answered

- How effective are fuel treatments? Under which conditions are they the most effective?
- How long are they effective?
- Can modeling offer managers and planners ways to simulate possible treatments on a landscape? Will these models offer ways to be more certain of the effectiveness of possible treatments?

With millions of dollars spent each year on fuel treatments across the United States, there is a lack of solid scientific information on the effectiveness of these treatments. Specifically, questions remain about when, why, and under what conditions treatments may be effective at actually reducing fire damages.

Mark Cochrane is a professor at the Geographic Information Science Center of Excellence (GIScCE) at South Dakota State University, in Brookings, South Dakota. With funding from the Joint Fire Sciences Program, he is setting out to understand just how effective various fuel treatments really are at reducing fire severity or extent; with statistical certainty. By collecting data on treatments applied across the country—including how the treatments have affected subsequent fires, and what the treatment and conditions of the site were—he intends to compile accurate information for managers and planners on treatment effectiveness.

To compile this kind of wind-ranging and extensive data, Cochrane and his colleagues will rely on information already available, as well as comparing “on the ground” work to verify what he finds. The main sources for the information will be the Monitoring Trends Burn Severity (MTBS) Mapping project, fuels treatments data from land managers, and the LANDFIRE Project, a national fuels database. From here he’ll pull numerous far-ranging examples of fuel treatments affected by subsequent fires, the details on how they were applied (and their actual outcomes), and apply the FARSITE modeling program to simulate burned areas with and without treatments. The big question, says Cochrane, is “after we look at the extent of a fire, do we see that the treatments actually reduced the spread or severity of the fire?”



Working with managers and planners



Monitoring Trends in Burn Severity

He is eager to offer managers and planners a quantitative look at whether treatments have actually worked and how various treatments could reduce fire damage. Given the tremendous reliance on fuel treatment across the country, and the remarkable lack of clear data on how effective various treatments really are, Cochrane anticipates offering his findings in ways that make it very easy for managers and planners who need the information to find it. The compilation of his work will eventually be fully available via the Web. As the work unfolds, he will be in contact with various managers across the country as they collaborate about various specific treatments. He also intends plenty of information transfer to land managers, and training courses.

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