Integrating Air Quality Tools into the Wildland Fire Decision Support System

A new "one-stop shopping" air quality portal site is providing wildland fire decision makers with access to a variety of real-time and forecast air quality information.

Smoke and air quality information has an important role in wildland fire decision making as is reinforced in the 2009 Implementation Guidance to the 1995 Federal Wildland Fire Management Policy. Fire and land managers wanting to incorporate air quality information need easy, fast, and centralized access to the latest air quality tools. The Wildland Fire Decision Support System – Air Quality (WFDSS-AQ) portal is a stand-alone site that allows managers to quickly find the information of interest to them. WFDSS-AQ is an experimental product that is initially being tested during the 2010 western wildfire season, although the tools are applicable to prescribed fires and eastern wildland fires as well. The site is being continually updated with additional features and tools.
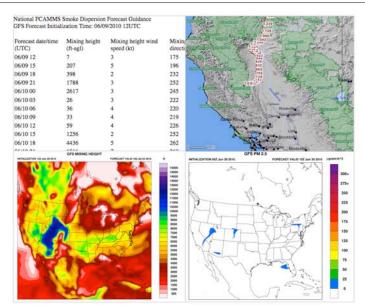
WFDSS-AQ can be accessed starting July 1st by clicking Fire Related Links > Weather Related Links > Air Quality within WFDSS. It can also be accessed by non-federal air quality agencies at http://firesmoke.us

Eight air quality tools of varying complexity have been incorporated into WFDSS-AQ so far, with additional tools being identified and under development. The current set of tools include:

- Point forecast text summaries
- Regional and national maps
- Day and night wind roses
- Climatological mixing heights
- Current air quality conditions
- Custom trajectory modeling
- Custom dispersion modeling
- Probabilistic smoke impacts based on climatological winds

Each tool link attempts to drill down to provide the user with regionalized, custom information in the fewest clicks.

Other features of the site include expanding online help and FAQ pages, with online tutorials coming soon. Additionally users are being asked for write-ups of decisions utilizing the tools so that users can benefit real-world examples.

Some of the different types of output available through the WFDSS-AQ portal tools. Upper-left: text point forecast table; upper-right: custom map and trajectory; lower-left: mixing height 7-day forecast; lower-right: smoke forecast from multiple fires..

Feedback is encouraged, and the site will be modified in response to user comments and questions throughout the western fire season.

WFDSS-AQ development has been led by the USFS PNWRS AIR Team in partnership with the Wildland Fire Management RD&A, the Desert Research Institute's Program for Climate, Ecosystem, and Fire Applications (CEFA), and Sonoma Technology, Inc.

Reference: Larkin *et al.,* 2010: WFDSS air quality tools, *Fire Management Today*, 70(20).

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