BLM OR/WA State Office and USFS Regional Office

Briefing Paper

Date: March 20, 2016 (with update)

Author: Rick Stratton (rdstratton@fs.fed.us)

Topic: **The Case for a Quantitative Wildfire Risk Assessment**

Quantitative Risk Assessments (QRA) as outlined by Scott *et al.* (A Wildfire Risk Assessment Framework… 2013) are becoming more common as technology, expertise, and science evolves. They provide decision support that quantifies where fires are likely to occur, the intensity at which they might occur, and what the potential impacts are on highly valued resources and assets (HVRAs) (e.g., communities, habitat, watersheds, critical infrastructure). QRA are being conducted at local, state, regional, and national scales and can inform strategic, operational, and tactical decisions. They are referenced in the Cohesive Strategy, are consistent with Federal Wildland Fire Management Policy (2009), and are being used in the USFS Pacific Southwest Region to inform forest plan revision.

In 2012 the State Office/Regional Office (SORO) collaborated with scientists at the Rocky Mountain Research Station to use QRA to help inform the Forest Service preparedness allocation process—based primarily on risk to the wildland-urban interface. At that time, a sub-regional or statewide risk assessment was considered, but ultimately deferred. However, there is now a window of opportunity to conduct a SORO-coordinated risk assessment in an integrated fashion with staff from Natural Resources and Planning.

As forests in the Region prepare for plan revision, a QRA would provide a foundation for incorporating fire management planning into forest plans. Also, there is now collective acknowledgement from executives and line officers that a different fire management approach is required given the 2015 fire season. The purpose of this paper is to (1) inform the field and partners of our intention to pursue a QRA, (2) facilitate discussion and support for the project, and (3) provide a more in-depth understanding of how and why a QRA at a statewide scale would be timely and beneficial.

Scope and Timeframe

I am proposing to conduct a QRA statewide in Oregon first—a one year process—followed by Washington in year two. As the Oregon assessment reaches completion, a similar assessment would begin in Washington [UPDATE as of July 1: Both states will be completed at the same time in year one]. The intent is to involve interagency partners from multiple disciplines and cover all lands. It is critical that fire movement is modeled irrespective of ownership and at an adequate resolution—finer than 270 meters produced by the National FSim Project. One of the challenges will be to accurately and seamlessly represent the HVRAs and gain consensus on their response to wildfire and relative

importance. The Fuels and Fire Program of the Forest Service Washington Office is very supportive and has committed to fund the project.

Discussion and Deliverables

QRA would inform the forest plan revision process by aiding in the delineation of fire management zones (FMZs) and potential wildfire operation delineations (PODS), informing ecological effects analysis, and creating a conditional net-value-change layer (cNVC). cNVC is the net effect of fire on HVRAs—which will depict the positive and negative effects of wildfire, landscape wide, on HVRAs given a fire's expected intensity. This information will be implemented using spatial fire planning in the Wildland Fire Decision Support System (WFDSS). FMZs will become the foundational containers for displaying land management guidance spatially (i.e., strategic objectives shapes). PODS can be used as predefined operation blocks to inform fire management planning and actions. Fire effects on ecological, socio-economic, and other resources will be known and reflected in strategic objectives and management requirements in WFDSS.

Other benefits of a QRA include strengthening and developing partnerships, identifying priority areas for fuel treatment, enabling allocation of hazard fuel and preparedness funds based on values at risk both at the unit and regional scale, comparing these outputs to other modeling efforts (e.g., Unit Initial Attack), overlaying the cNVC layer with current fire simulations to quantify risk more accurately, and providing a base analysis to enable discussions about our existing suppression resources and dispatch locations.