Large Fire Risk Probability Graphic User Guide/FAQs

1. What is a large fire, and why is it an important concept?

A. Large fires are defined by Predictive Service Area (PSA), based on historical fire size data in each PSA. The acreage value varies by PSA and by GACC. For OSC, it ranges from 50 to 500 acres. It's an important concept because the GACC is most concerned with predicting the development of large, complex incidents that are likely to require significant resource commitment. A warm, dry climate like Southern California experiences wildfires nearly *every day* during the warm season, but most of them are very small (no more than a few acres) and quickly contained. This approach helps spotlight the "big events".

2. Why are the area-wide large fire probability thresholds (moderate, elevated, etc.) set the way they are?

A. The thresholds were developed using a climatology of large fires within OSC from 2009-2021. The overarching premise of the thresholds is that **what constitutes an elevated risk should be slightly greater than the maximum normal risk during peak fire season.** For OSC, the highest risk of a large fire occurs from June-August. During those months, that daily risk ranges from 20-22%. So by the time a daily risk value of 25% is reached, that constitutes an elevated risk compared to what's normal during the peak of fire season. The individual PSA thresholds are derived from the 7 Day Significant Fire Potential Product, and are also based on large fire climatology for the PSAs.

3. How is an OSC-wide probability of 31-40% considered "high risk"? Aren't those odds less than 50/50?

A. While it's true those odds are less than half (and much less than that for an individual PSA), it does not mean they are not high probabilities. As FAQ #2 indicates, the thresholds are set based on what's normal. A daily risk value of 33% represents a 1 in 3 chance of occurrence, and is considerably higher than the "normal" peak season daily risk value of around 20%. Consider personal values that would be of concern to you if a negative event had a 1 in 3 chance of occurring, and that level of risk starts to appear much more significant.

4. I see one or two PSA's in a low (or moderate) risk, but the area-wide probability is little/none (or low). How is that possible?

A. Mathematically, this condition is acceptable based on how the risk levels are defined. There may be cases where one or two PSA's may reach, for example, a low risk threshold of 1%, but where the overall OSC risk is still little to none (<4%). In many cases, the OSC area-wide risk category will match the highest individual PSA risk category, but not always. Consider the 50

states. If 1 of 50 states had a moderate risk of some event occurring, and the other 49 had a low risk, the overall risk would still be considered low.

5. I see a bunch of PSA's in a low (or moderate) risk, but the area-wide probability is moderate (or elevated). How is this possible?

A. This is the inverse of FAQ #4. There may be times where many PSA's are in, for example, a low risk. Even if no individual PSA achieves a moderate risk level, having many PSA's in a low risk can create an OSC-wide moderate risk condition. Again, consider the 50 states. If 40 of 50 states had a low risk of some event occurring, the overall risk would likely be considered moderate, even if it isn't moderate in one particular state.

6. How should I use this product?

A. That is entirely up to the user. Different users with different responsibilities and risk tolerance levels will use this product differently. Ultimately, it is designed to be a tool to aid in decision making with topics such as staffing, resource placement, and situational awareness. Users are strongly encouraged to familiarize themselves with the product, and direct pertinent feedback and questions to the South Ops GACC so forecasters can improve the product and answer questions.

7. Is this product still in development?

A. Yes! There are multiple avenues of development being pursued with this project. We are exploring methods of more advanced visualization tools to view the data. We will also be closely tracking the accuracy of forecasts. There is also potential for this product to become standardized throughout all of California if it demonstrates positive results within OSC. User feedback will be heavily incorporated into any future updates and changes.

8. Where can I ask questions and provide feedback?

A. The best way is to email the South Ops meteorology team at sm.fs.osc_ps@usda.gov. Your feedback and questions will be pivotal to the success of this product and will determine whether this becomes a permanent product.

9. Where can I find more information on the science and development of this product?

A. For more information on how this product was developed or questions regarding the underlying math and science concepts, email sm.fs.osc_ps@usda.gov.