

Dry Lightning Potential Index

Product Description Document PDD

Part I - Mission Connection

1. Product Description – The Dry Lightning Potential Index (DLPI) is a graphical product produced by forecasters at WFO Las Vegas (VEF) using GFE/IFPS. Ratings of Dry Lightning potential (numbered from 0 through 6) for the next three days (today, tomorrow and the next day) are calculated using forecasts of boundary layer relative humidity and static stability. The DLPI is intended to be used as general guidance, primarily for planning purposes. The DLPI is intended as a seasonal product, issued from June through October, when active wildfires are most likely to occur in our forecast area

2.. Product Type – Operational

3. Purpose - The DLPI gives users a quick three day forecast of the current thinking regarding location and likelihood of significant dry lightning activity developing in the WFO Las Vegas area of forecast responsibility. Users might include interagency communications centers, the U.S. Forest Service, the BLM and other land agencies, fire planners, burn bosses, dispatchers, Fire Weather Center managers and forecasters, etc. The product will provide a graphic depiction of the probability that dry lightning conditions will develop. In this way, the product will add value to the standard thunderstorm forecast by providing a visual image of specific areas of concern for new fire ignitions. However, it is important to note that there are additional decision factors affecting fire ignitions and growth, such as fuel moisture, energy release component, burn index, etc., which are not considered in the preparation of this product. The information provided by this graphic can be useful for general planning with decisions such as resource deployment or prescribed burn scheduling. It is intended to supplement, not replace, the official forecast products (e.g., the FWF and Spot Forecasts). Increasing categories of potential are associated with atmospheric instability exceeding specific thresholds (LI of 0, -2, -4) in low humidity environments.

4. Audience - The main audience includes interagency communications centers, the U.S. Forest Service, the BLM and other land agencies, fire planners, burn bosses, fire dispatchers, fire weather centers, etc. However, since it is available on the internet, a broader audience, including the media, may make use of the information.

5. Presentation Format - The DLPI is a graphical representation (created by GFE/IFPS) posted on the internet, showing areas of Negligible, Low, Moderate, High, Very High and Extreme Risk of dry lightning conditions, identified by an index rating scale of zero (0) through six (6). An explanation of the product is included on the graphic, along with a caveat for what it may and may not be interpreted to imply for decision makers.

6. Feedback Method - We solicit feedback primarily from the land management agencies and fire weather centers. Feedback may also be provided by mail:

E-mail comments or questions can be sent to Stanley.Czyzyk@noaa.gov

7. Examples can be found at URL <http://www.wrh.noaa.gov/lasvegas/dlpi.php>

8. PDD Approved by Vickie Nadolski, WR Director

Part II - Technical Description

1. Format and Science Basis - This product was developed because of the need for a graphical representation of areas where dry lightning is expected to occur during the 12 to 72 hour time frame. The DLPI attempts to address that void. The product does not attempt take into consideration fuel moisture, energy release component or burn index parameters. The DLPI is intended to be used as general guidance information for illustrating current thinking concerning the relative risk of dry lightning conditions developing in the WFO Las Vegas area of forecast responsibility. It is calculated using gridded forecasts of boundary layer relative humidity and static stability in the form of the Lifted Index, along with forecaster expertise. The DLPI is typically initialized using the ETA model to populate GFE/IFPS but any of the available model grids could be used. Prior to being stored and transmitted, a forecaster reviews and if necessary, modifies the grids to ensure consistency and accuracy with respect to other products and the current assessment of expected meteorological conditions during the product valid time.

2. Availability - The DLPI is routinely produced twice each day, about 9 AM and 9 PM, but it may be updated at forecaster discretion.

3. Additional Information - The Las Vegas WFO is producing the DLPI as an experimental guidance product based on interest expressed by customers. The format was developed from suggestions by forecasters and customers alike. Stan Czyzyk is the focal point.