

**Holdover Threat Index
WFO Elko (Local)
Product Description Document (PDD)**

Part I – Mission Connection

- a. Product Description: In the Great Basin a significant threat to large fire spread occurs when relative humidity is low and strong winds develop a day or two after a lightning event. The Holdover Threat Index (HoTI) is a GFE graphic that displays the threat of “holdover fires” to grow and spread within specific fire weather forecast zones within the WFO Elko county warning area. In addition to the actual Holdover Threat Index graphic the 4 elements that go into the index calculation will be displayed for the fire weather community and for forecasters.

- b. Purpose:
 - 1. The purpose of the HoTI is to provide increased situational awareness on days when conditions are favorable for smoldering fires to grow.

 - 2. The goal will be to help protect life and property, mitigate economic losses, and maximize economic gains by giving customers and partners information that will 1) give them increased situational awareness; and 2) allow them to pre-position initial attack resources during crucial fire weather periods.

- c. Audience: The primary audience for the HoTI includes NWS internal users, federal, state, and local fire managers and fire fighters. This product will be available to everyone via the WFO Elko internet page.

- d. Presentation Format:

The product will be in the form of images available on WFO Elko’s internet page. Each image product will display the individual components of the HoTI (Fig. 1). The components include the Relative Humidity Threat Index (Fig. 2), the Lightning Threat Index (Fig. 3), Wind Threat Index (Fig. 4) and the Dryness grid (Fig. 5). Figure 6 shows a screen capture of what the webpage interface will look for all the graphics.

- e. Example:

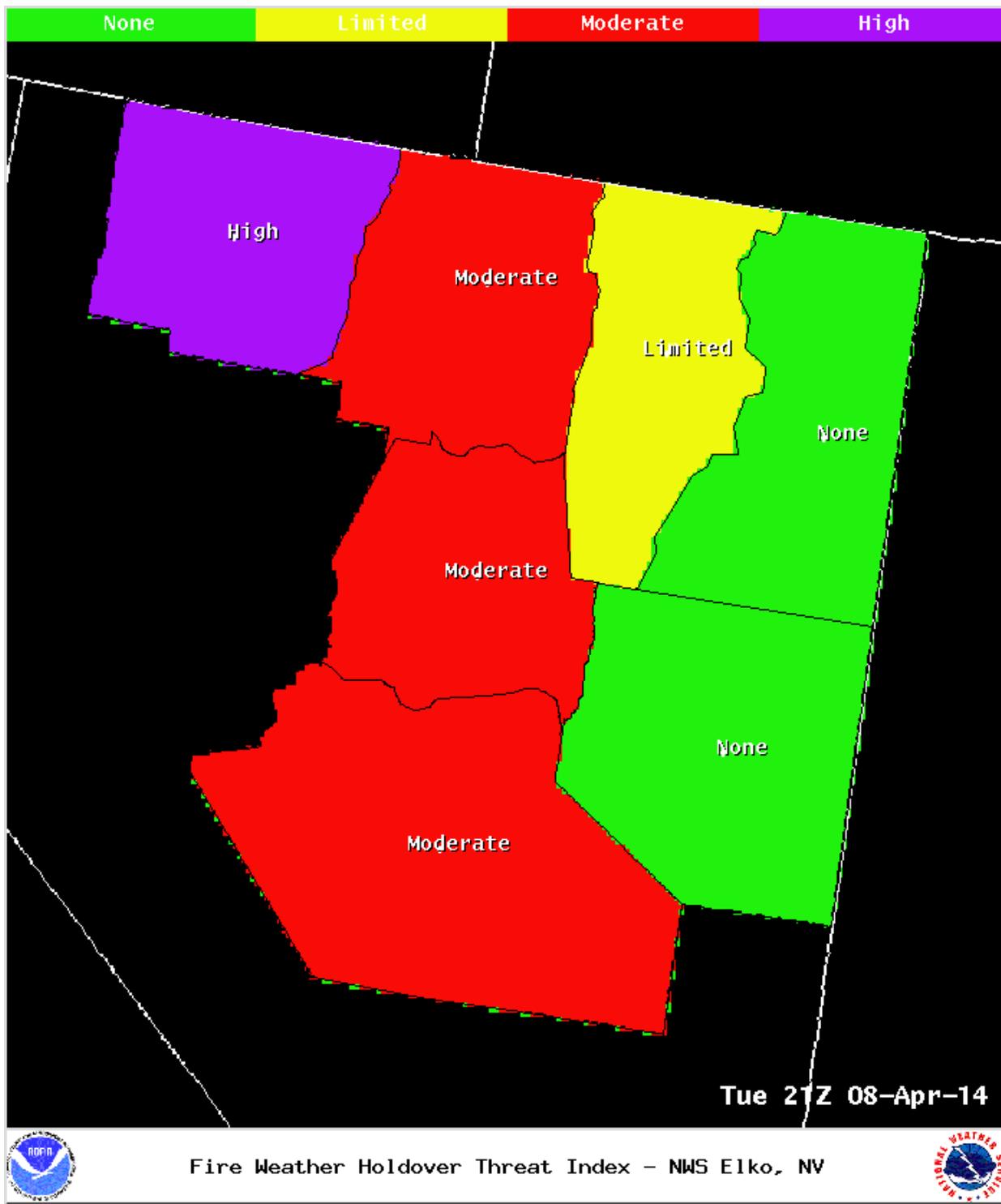


Figure 1: Example of completed HoTI grid for Elko, NV.

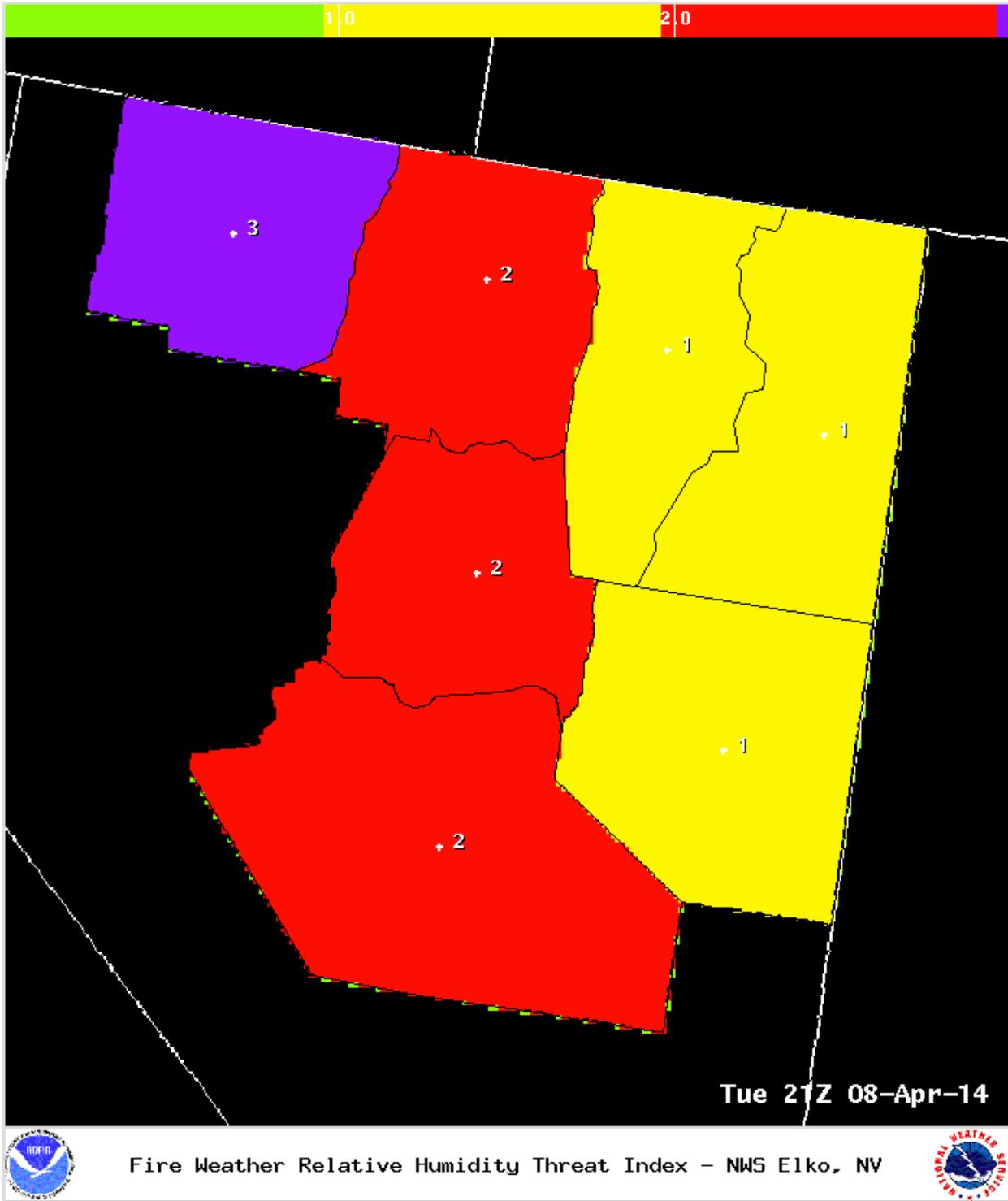


Figure 2: Example of Relative Humidity Threat Index grid for Elko, NV.

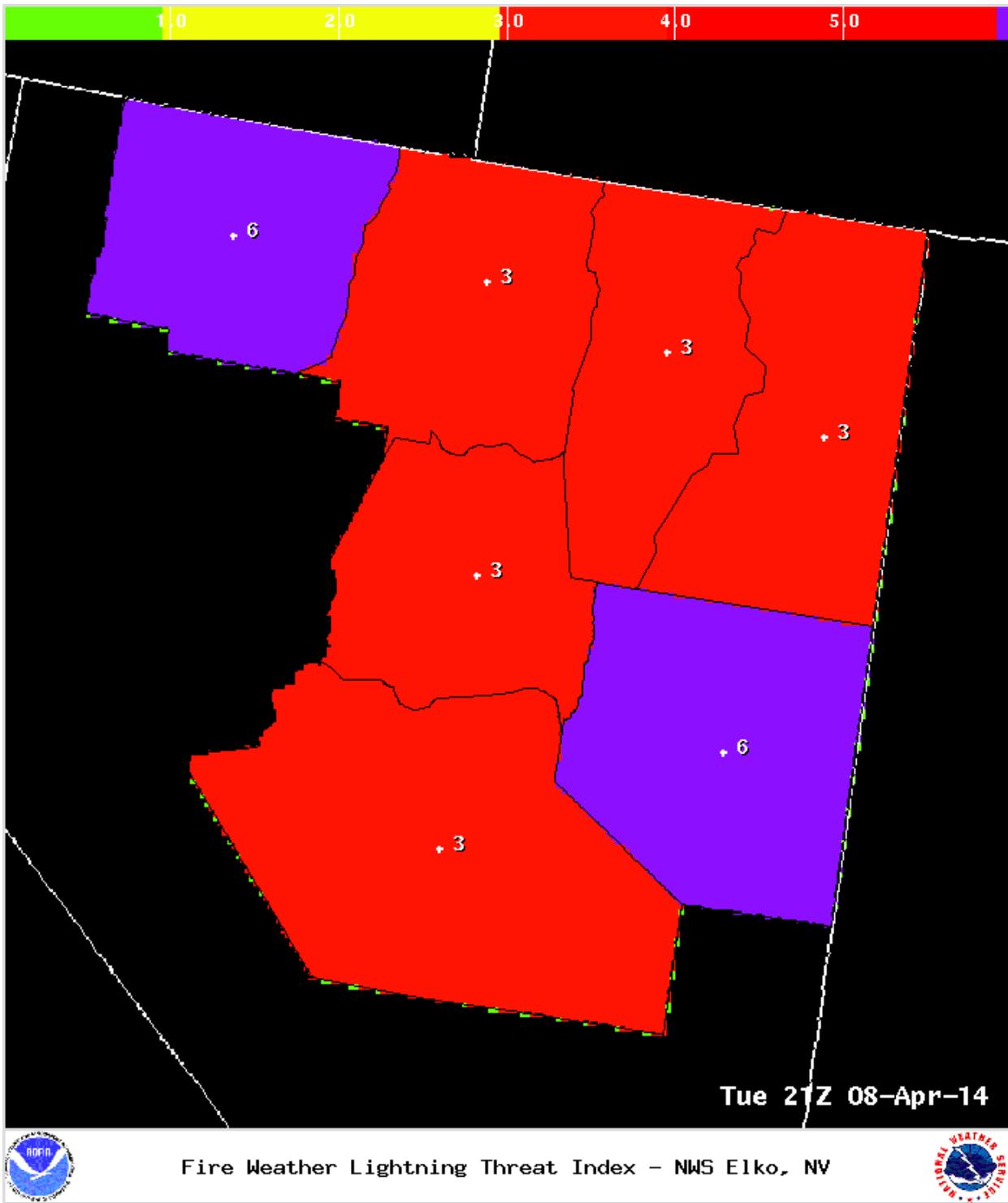
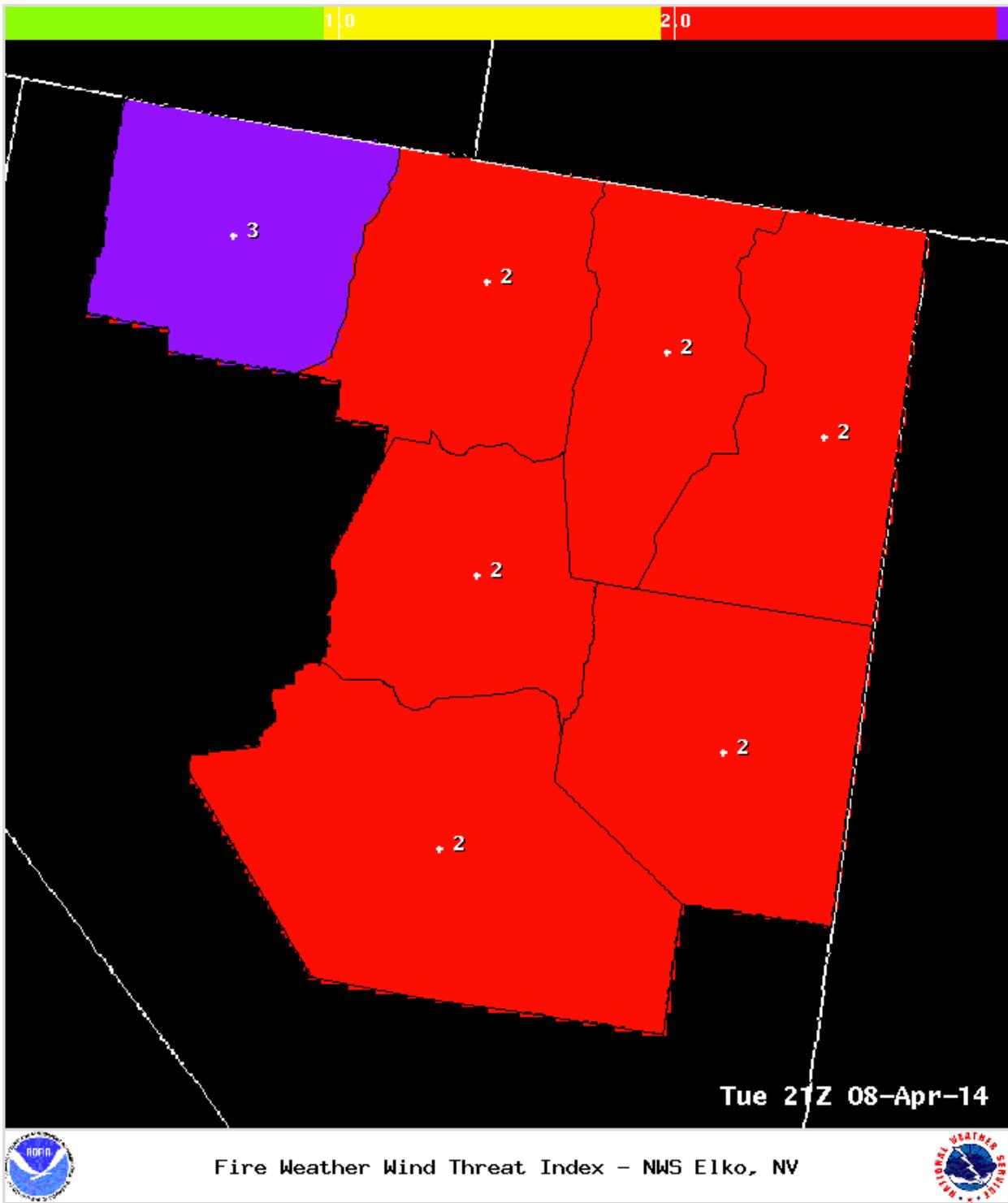
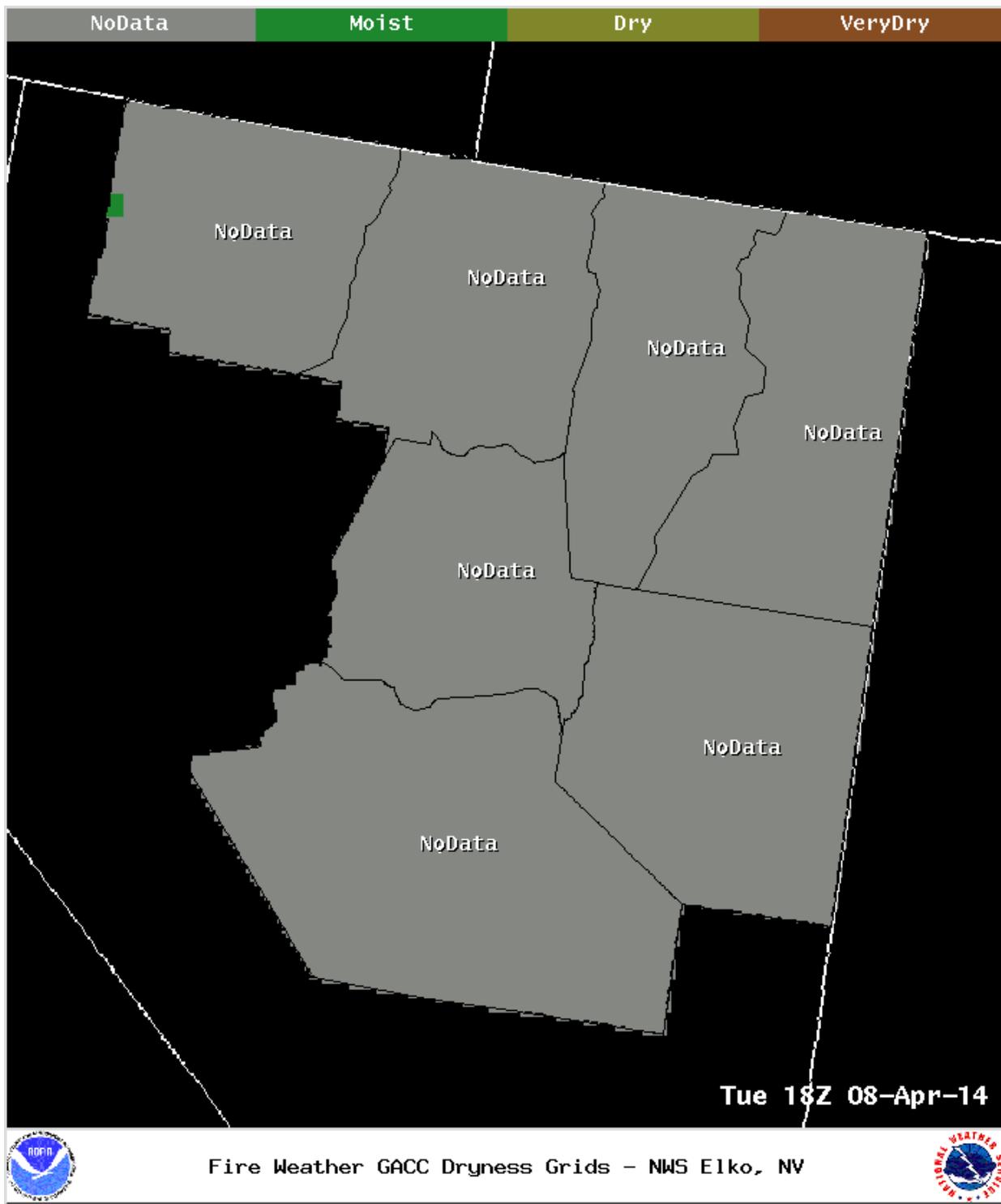


Figure 3: Example of Lightning Threat Index grid for Elko, NV.



Fire Weather Wind Threat Index - NWS Elko, NV

Figure 4: Example of Wind Threat Index grid for Elko, NV.



Fire Weather GACC Dryness Grids – NWS Elko, NV

Figure 5: Example of a GACC Dryness grid for Elko, NV.

The HoTI maps below show the threat as to when meteorological conditions are favorable for smoldering fires to grow. The HoTI takes into account minimum humidity, maximum wind gust, previous day's lightning areal coverage, and fuel moisture. These variables are combined into one all-encompassing product, with values ranging from "None" to "High". You can click on the maps to display a larger map as well as click on the smaller maps to view the individual components that make up the HoTI.

In order to access a larger image of the thumbnails below, please click on any image.

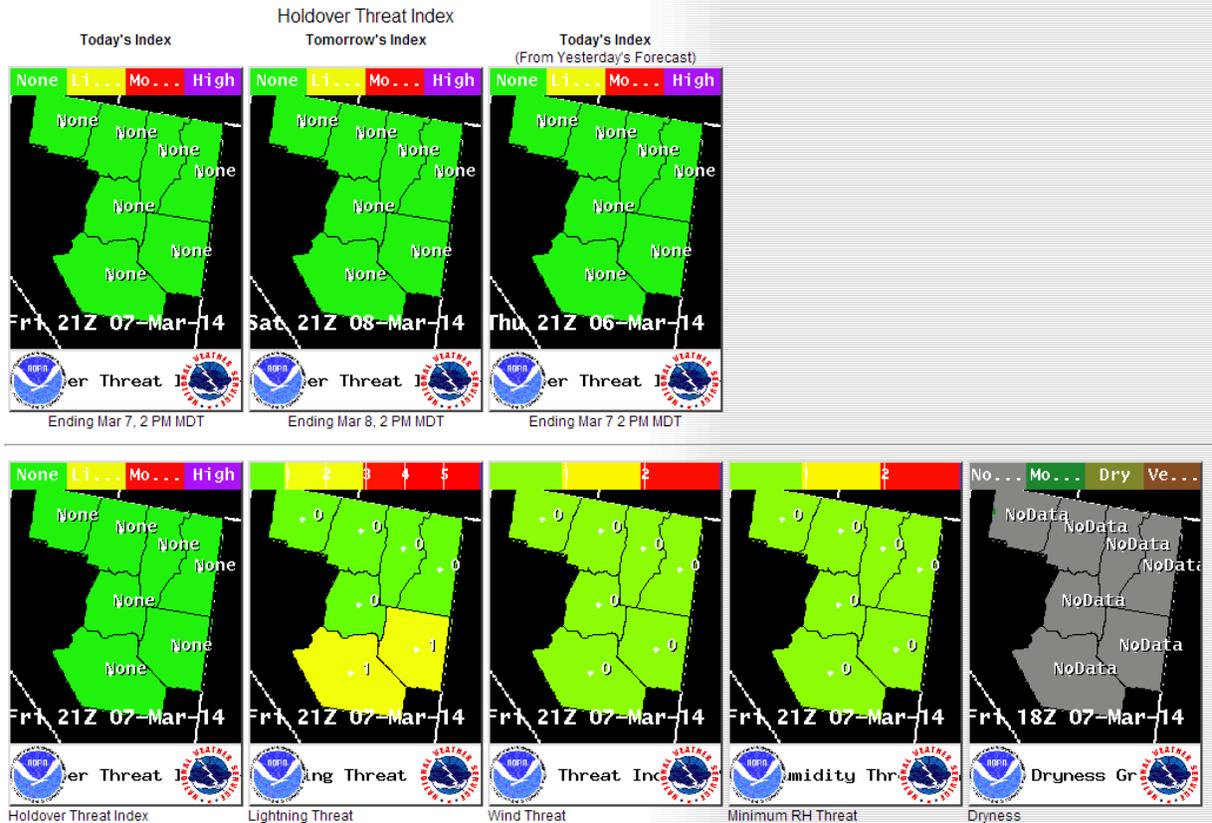


Figure 6: Example of webpage and all the forecast graphics

- f. Feedback Method: Customers will be encouraged to provide feedback through e-mail with directions on the webpage of how to email your questions to donald.dumont@noaa.gov.

Part II – Technical Description

a. Format and Science Basis:

1. WFO Elko will be producing an experimental HoTI grid at least once per day. The methodology is based upon a forecast process developed at WFO Elko.
2. For each fire weather zone, a category value (called a threat index) will be determined for:
 - i. Observed lightning strike coverage – For the past 24 hours
 - ii. Forecast average minimum relative humidity – Days 1 and 2
 - iii. Forecast average wind gust – Days 1 and 2
 - iv. Current fuel status – Days 1 and 2

3. From these threat index values (i through iii above), a weighted threat index value will be assigned for each meteorological category. Assign these values to the fire weather zones.
 4. Combine the three threat index values into one all-inclusive HoTI.
 5. Run a pass of values if fuels are dry or not. If the fuels are considered “dry” or “very dry”, assign the HoTI to the fire zone. If fuels are “moist” or “no data”, assign 0 (no value) to the HoTI.
- b. Availability: This product will be available on the internet at WFO Elko’s website (<http://newweb.wrh.noaa.gov/lkn/hoti/hoti.php>) and will be produced at least once per day (6 AM) during the fire weather season (May 15 – October 15).
- c. Contact Information: Donald Dumont, WFO Elko, SOO, donald.dumont@noaa.gov or Claudia Bell, Western Region Headquarters, claudia.bell@noaa.gov