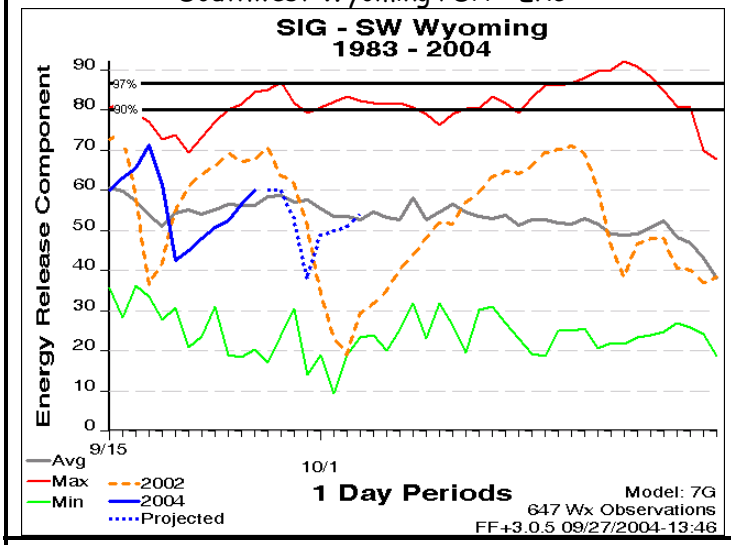
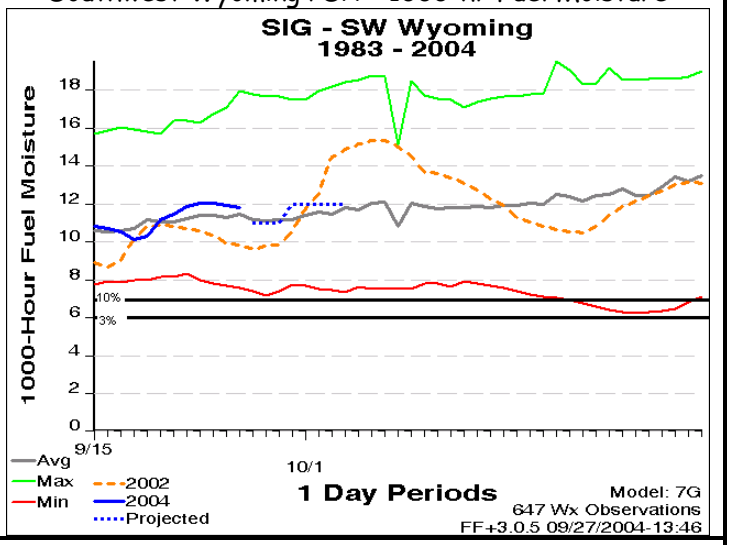
RMA Fire Danger Rating Network
7-day Projections and NDVI

Date Updated: **September 27, 2004**

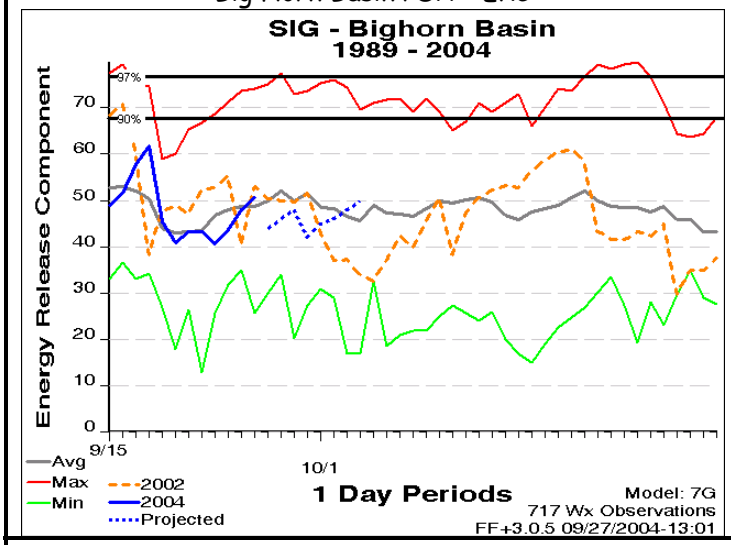
Southwest Wyoming PSA - ERC



Southwest Wyoming PSA – 1000-hr Fuel Moisture



Big Horn Basin PSA - ERC



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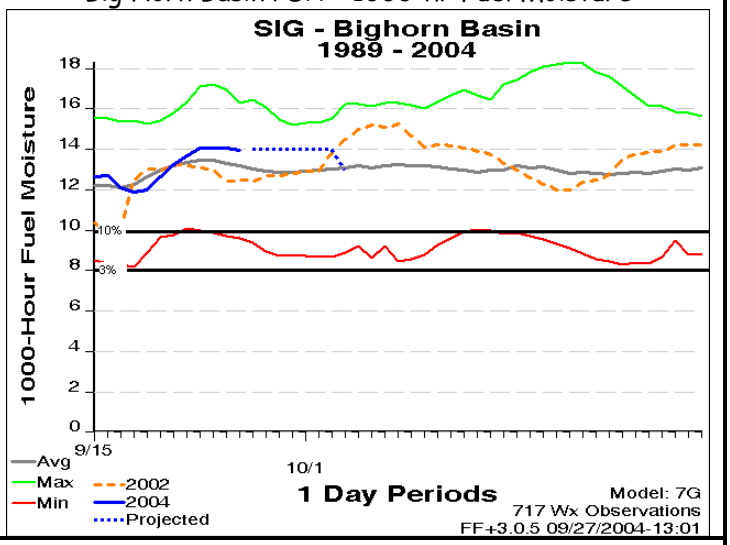
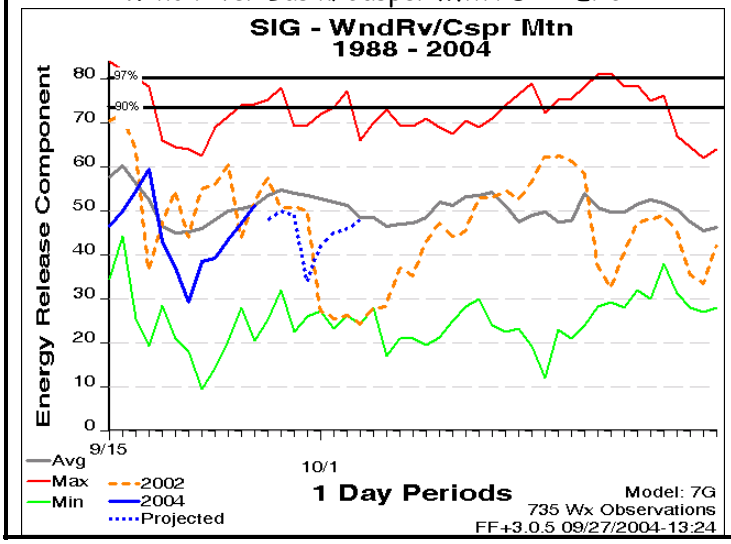
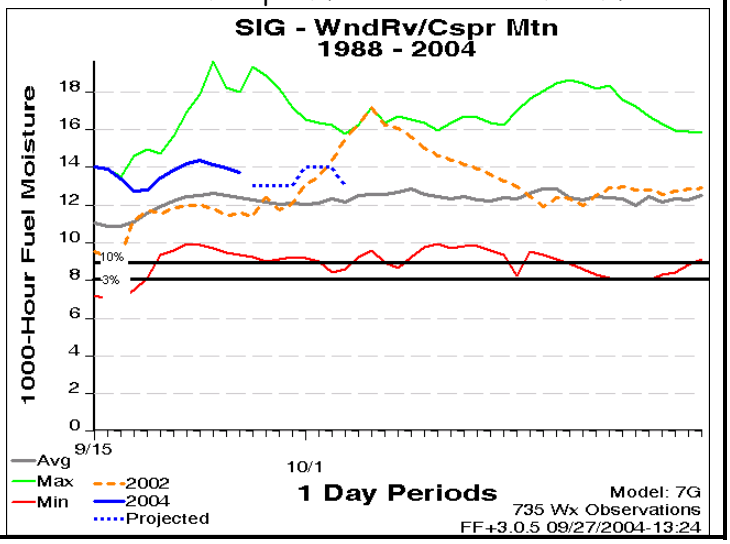


Wind River Basin/Casper Mtn PSA - ERC



Wind River Basin/Casper Mtn PSA – 1000-hr Fuel Moisture



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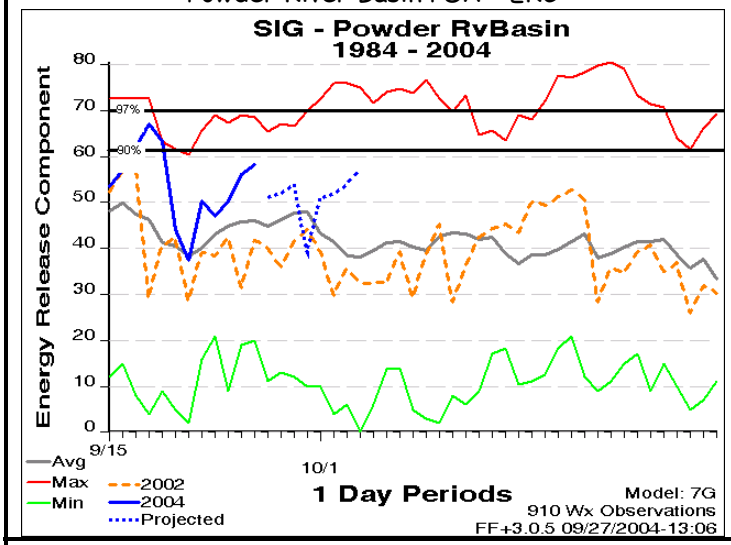
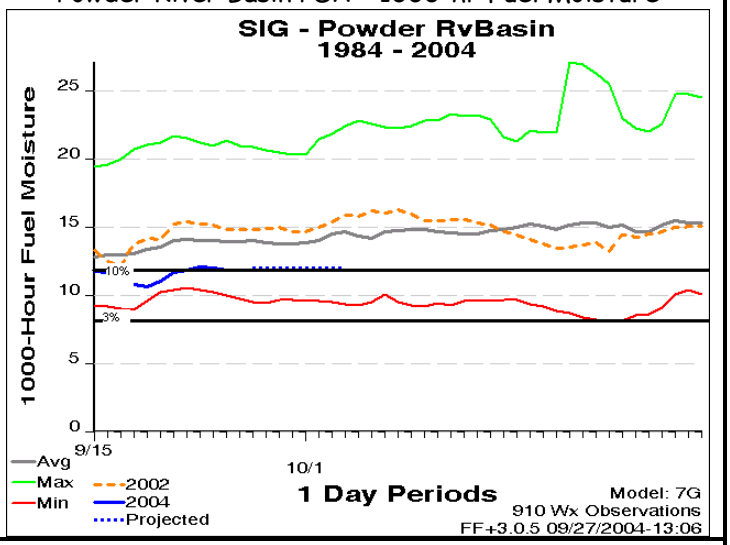
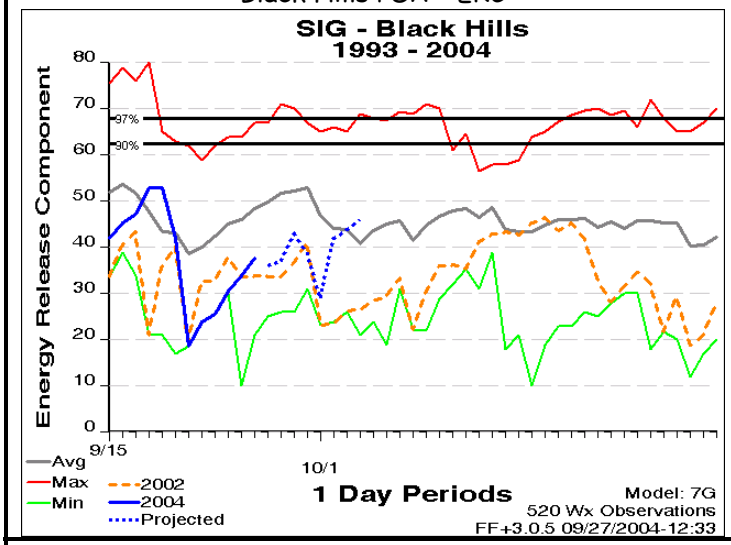
Powder River Basin PSA - ERC



Powder River Basin PSA – 1000-hr Fuel Moisture



Black Hills PSA - ERC



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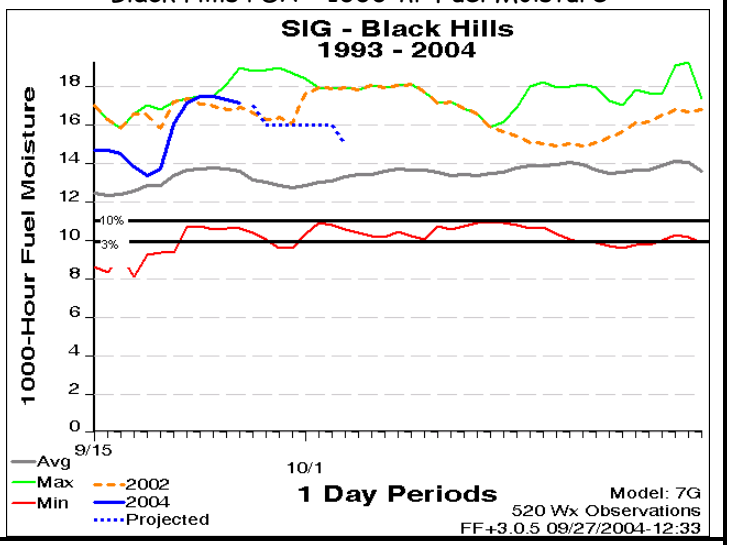
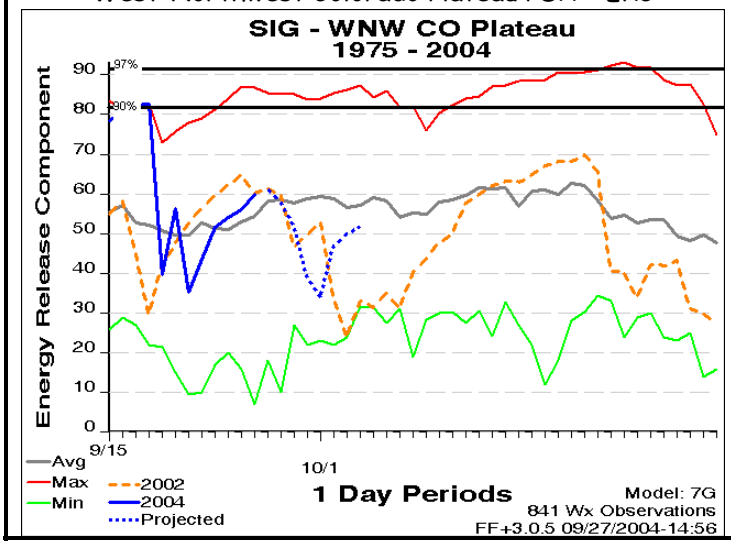
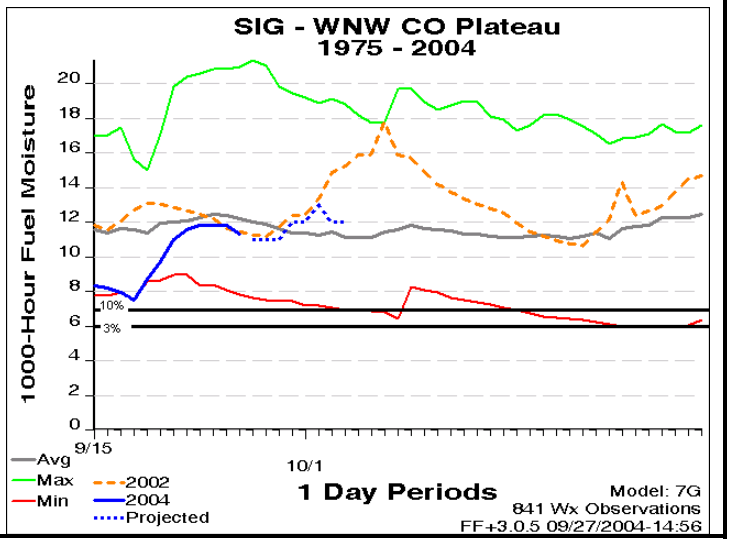


West-Northwest Colorado Plateau PSA - ERC



West-Northwest Colorado Plateau PSA – 1000-hr Fuel Moisture



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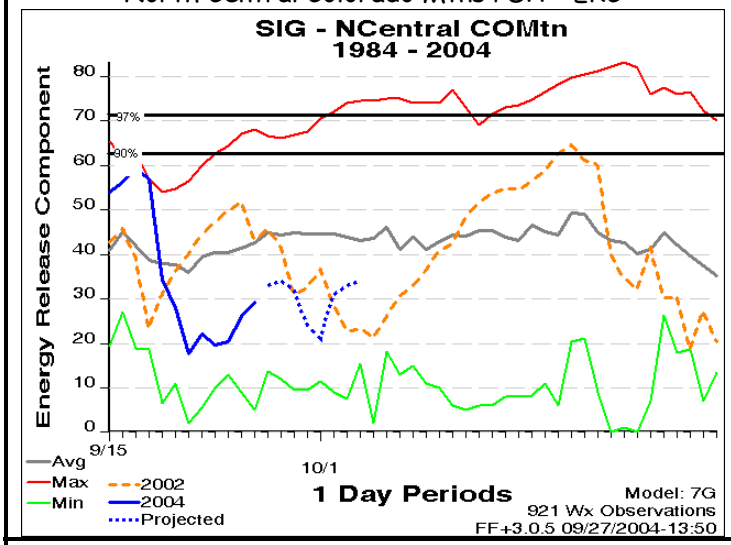
North Central Colorado Mtns PSA - ERC



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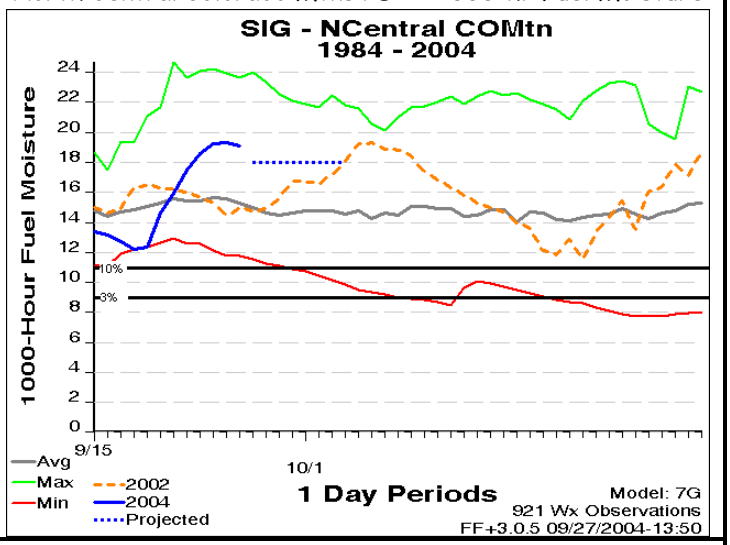
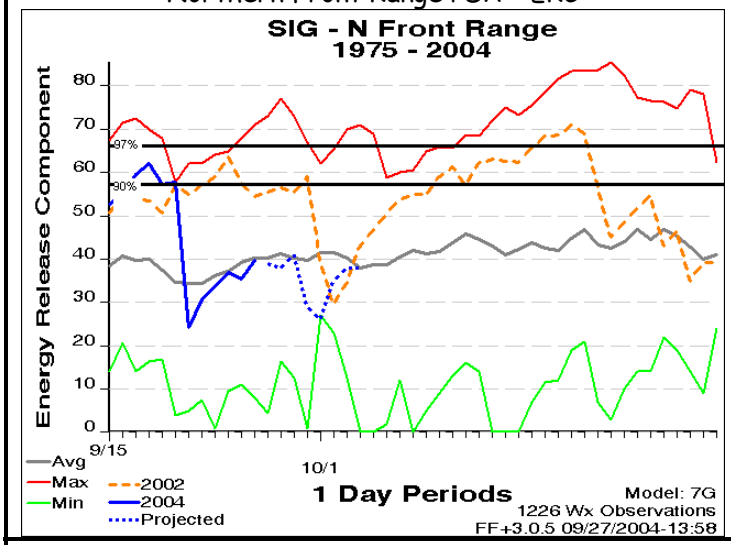


Northern Front Range PSA - ERC



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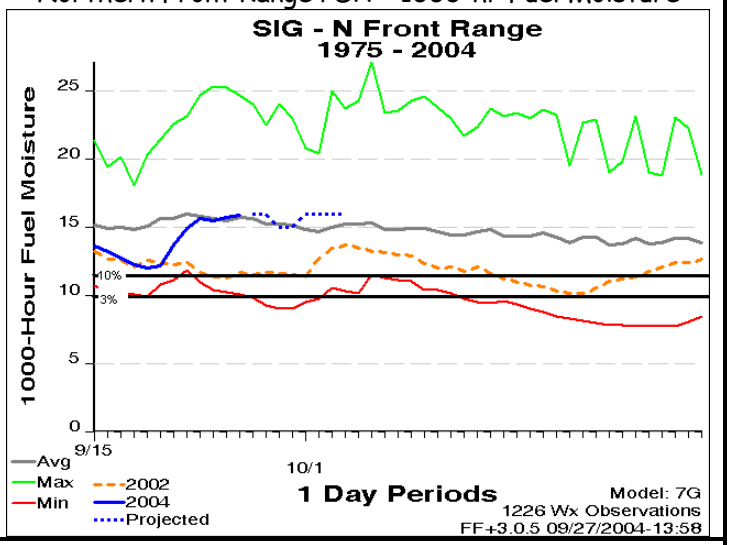
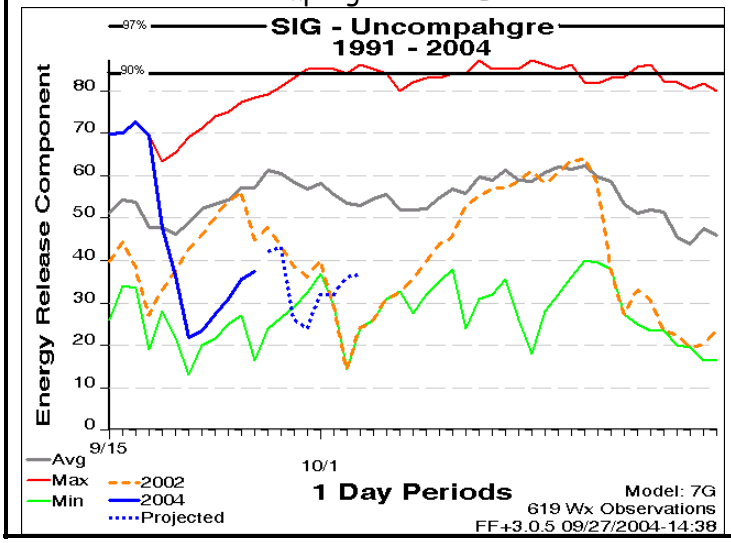


Uncompahgre PSA - ERC



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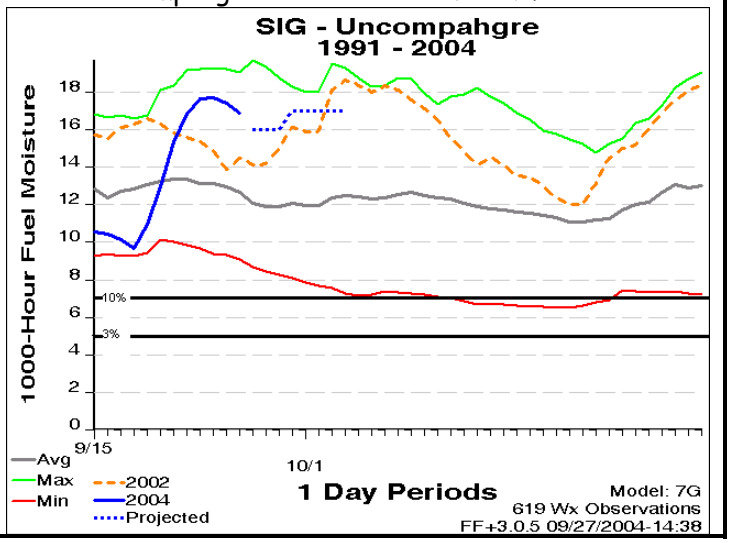

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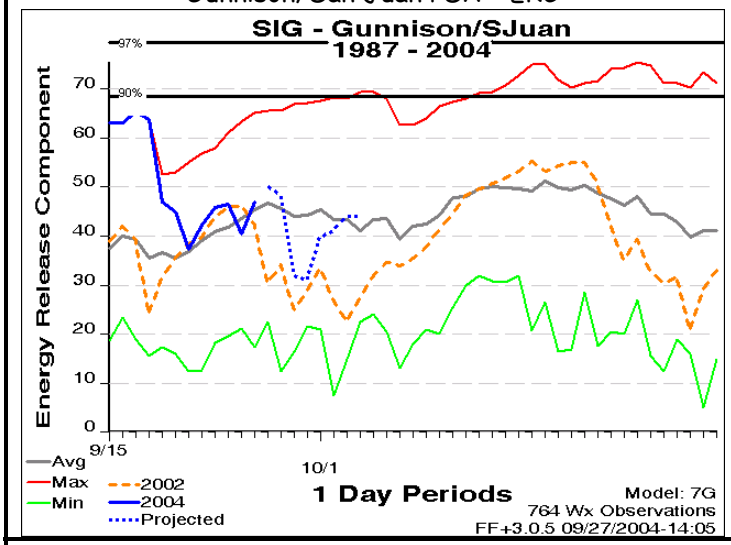
Gunnison/San Juan PSA - ERC



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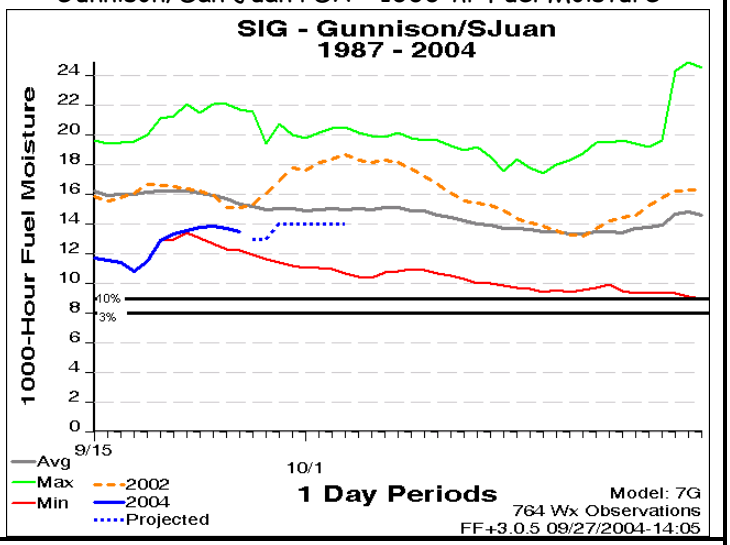
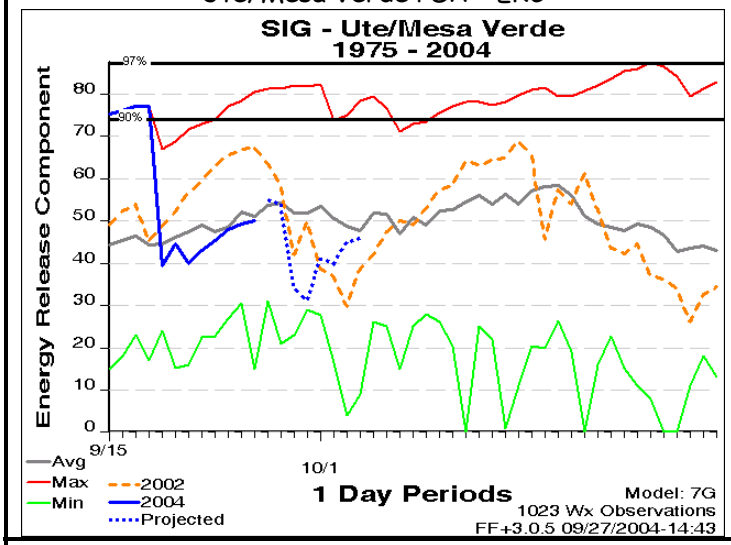


Ute/Mesa Verde PSA - ERC



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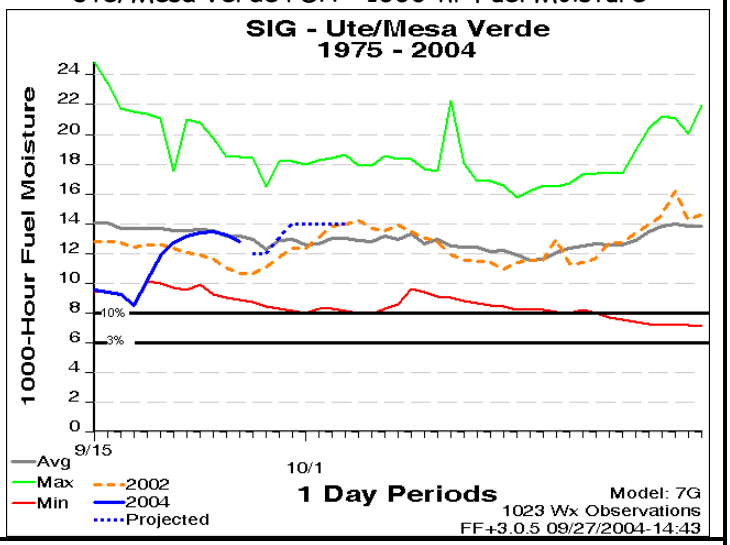
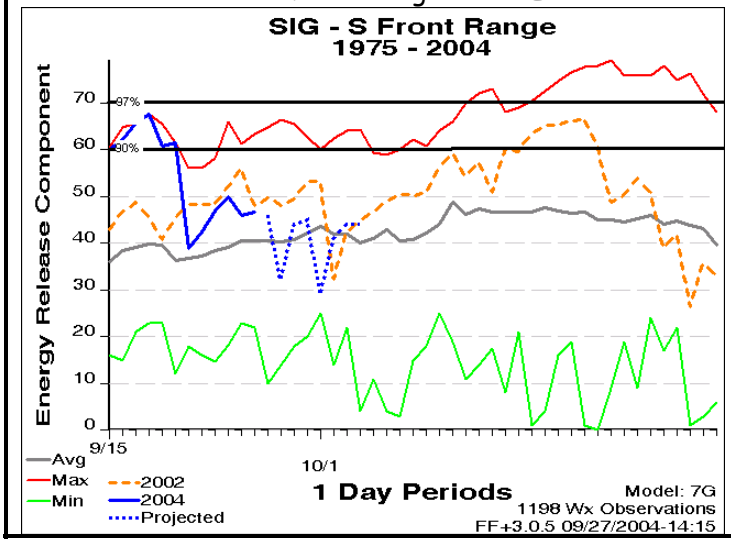


Southern Front Range PSA - ERC



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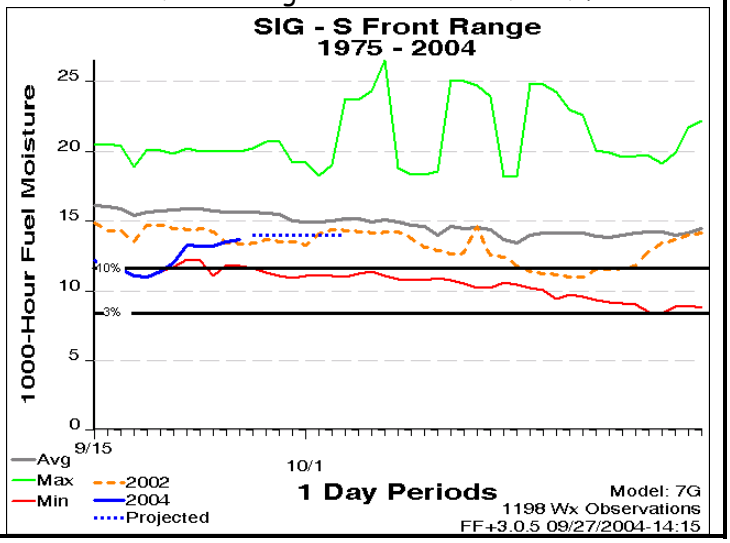

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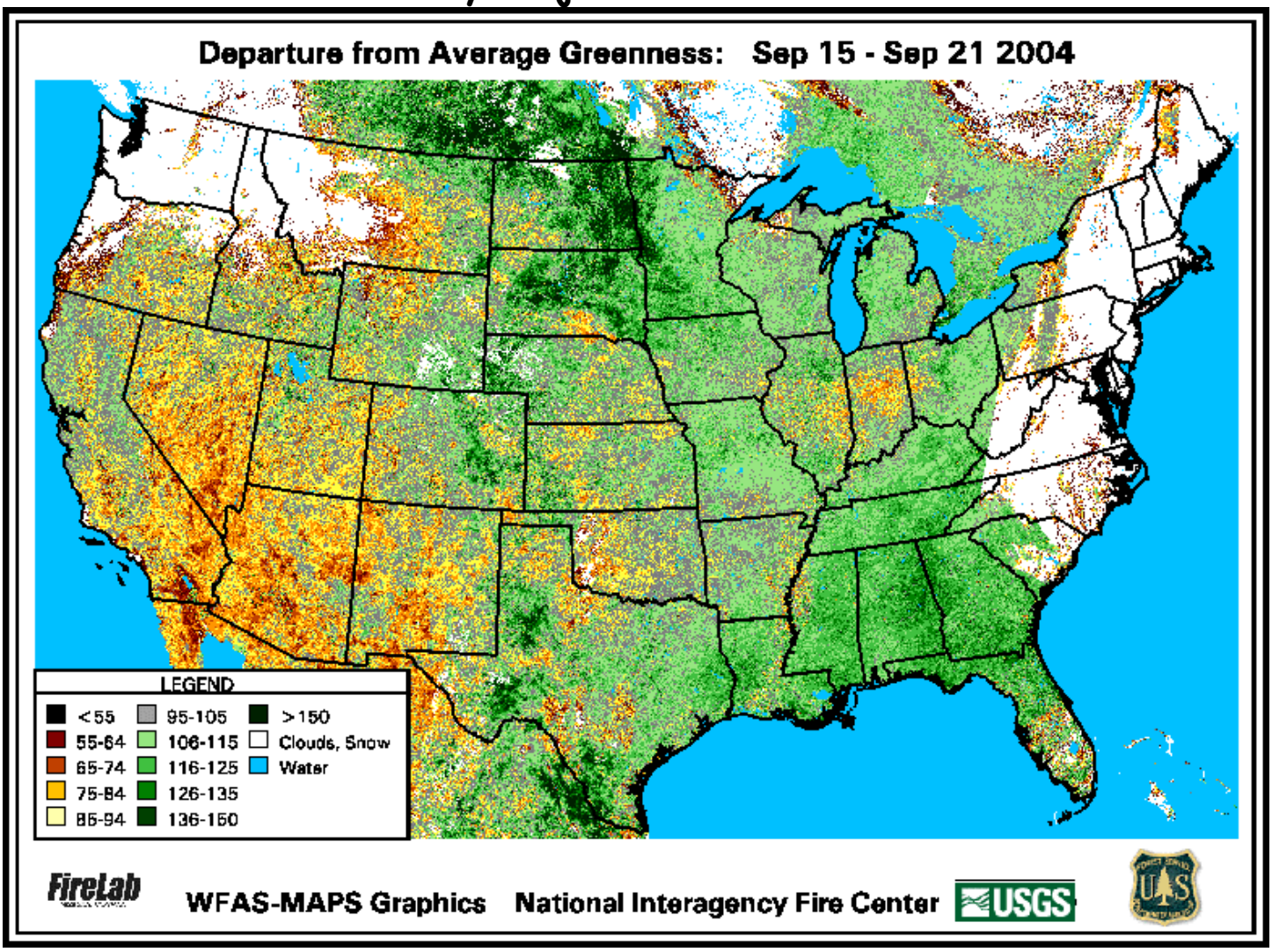

Definitions of ERC, 1000-hr Fuel Moisture and Departure from Average Greenness

Energy Release Component (ERC) is a number related to the 24-hour, potential worst case, total energy released per unit area within the flaming front at the head of a fire. It is directly related to the available energy (expressed as BTU's) per unit area (square foot) within the flaming front at the head of a fire. ERC is derived from predictions of the rate of heat release per unit area during flaming combustion and the duration of the flaming that are functions of:

1. Fuel Model, particularly fuel loading
2. Dead fuel moistures, particularly the 100 and 1000 hour
3. Live fuel moistures, particularly woody fuel moisture.

The index's day-to-day variability is minimal because it is not affected by wind speed. It is an excellent indicator to aid in determining the effects of long-term drying on fire behavior. It is also a useful index to help recognize an early fire season and for seasonal trend analysis. As a result, it can be a valuable tool for proactive decision support to Fire Managers when a longer-range prediction of potential business is desired.

1000-hr Fuel Moisture is a calculated value that represents the dead fuel moisture content of a fuel particle, with a 3 – 8 inch diameter (expressed as a percentage). This model has excellent memory, where daily fluctuations have only a small impact on their changes in moisture. As a result, the model provides an excellent estimate of the slowly changing seasonal moisture trends. The index is no better at predicting levels of business than ERC, but is another tool to assist with validating decisions.

The Normalized Difference Vegetation Index (NDVI) Departure from Average Greenness portrays how green each pixel is compared to its average greenness for the current week of the year based on 1989-2003 data. On the map's legend, 95 – 105% means that the area has an average level of greenness for this time of year; anything lower than 95% means that the pixel (area) is less green than average for this time of year; anything higher than 105% means that the pixel (area) is greener than average for this time of year. White areas may be seen in some images. These indicate clouds, snow, or other very non-green surfaces. Often a "fringe," sometimes rather large, may be evident around cloudy pixels. Snowy areas viewed under clear conditions generally have a narrow band of surrounding low vegetation greenness.

The information from the Departure from Average Greenness map is used in analysis by RMA Predictive Services in the 7-day Fire Weather/Fire Danger Outlook for: general fuels conditions in the Northern High Plains, Southern High Plains and Eastern Plains (SIGS were not developed for those areas because of the limited number of RAWS covering a wide expanse) and for an overview of fine fuel moisture across the RMA.