New Spatial Information in the National Drought Monitor

By Kelly C. Smith, NDMC and Christina Alvord, WWA

An enhanced version of the U.S. Drought Monitor went live this month with state-level breakdowns that include county lines, making it easier to use and interpret. The weekly product now includes information by region and state, along with summary statistics on changes in drought status affecting various areas, according to Mark Svoboda, a climatologist at the National Drought Mitigation Center (NDMC). Svoboda, one of the lead authors and developers of the U.S. Drought Monitor, said, "We've been talking about these changes with our partners at NOAA and USDA since we first launched the U.S. Drought Monitor back in 1999." In a statement to fellow authors and reviewers, he said, "I tip my cap to our GIS programmer Soren Scott here at the NDMC for helping make these features happen so quickly after coming aboard the center here." Scott joined the NDMC earlier this year. The NDMC's expanded capabilities are largely due to funding from the U.S. Department of Agriculture (USDA) Risk Management Agency.

In the near future NDMC hopes to add the capability to generate even more spatially fine-tuned images. The U.S. Drought Monitor, which was first launched in 1999, combines the expertise of 225 federal, state, and academic reviewers from across the country with that of sophisticated climate monitoring tools in attempt to provide a big-picture view of current drought conditions in the United States.

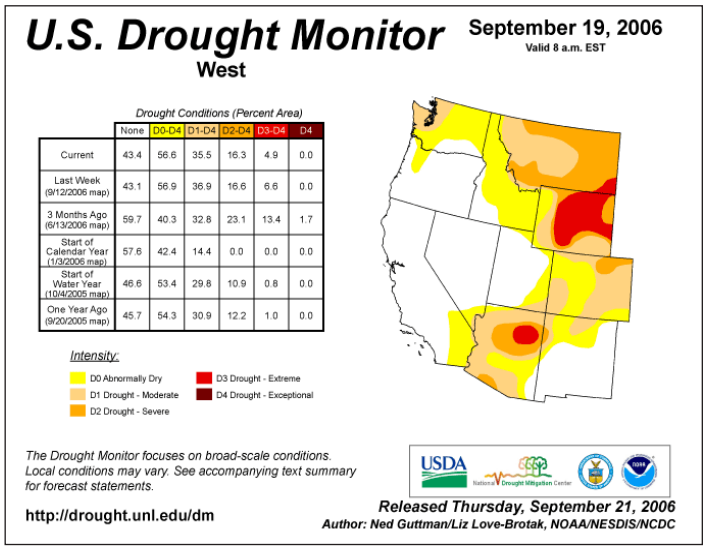

Figure 1a. Beginning last month, the U.S. Drought Monitor released new regional and state level breakdowns of drought conditions including changes in various areas over a given time-frame. As of September 21, the U.S. Drought Monitor reported that 4.9% of the area shown is assigned under the drought intensity category of D3 and D4, in comparison to last year's estimate of 1.0%.

U.S. Drought Monitor Applications: Use by USDA

The enhanced image resolutions were first released in a beta, i.e. test, version in July 2006 and are part of the first phase of turning the U.S. Drought Monitor into a more robust, interactive Decision Support System. The new enhancements came out at nearly the same time that Department of Agriculture officials announced endorsement of emergency assistance for ranchers residing in counties officially identified as being in extreme drought (D3) or exceptional drought (D4) conditions during the growing season. The federal announcement touched off a flurry of debate among U.S. Drought Monitor authors and reviewers as to whether the Drought Monitor is sufficiently accurate to allocate assistance at the local level. It illustrated the characteristic tension between scientists, who prefer very precise, highly qualified information, and policy makers, who need the best possible information and generally recognize that some uncertainty is inevitable. "I think it's great that USDA is using the Drought Monitor to make decisions. It simply is the best thing out there," said Mark Shafer, Director of Climate Information for the Oklahoma Climatological Survey. Shafer indicated that without the Drought Monitor, decisions such as emergency assistance were largely made without much objective information. Shafer and others also highlighted the need to combine the Drought Monitor's big-picture view with locally generated information – for example, by tapping into USDA county-level reports. "In making county-level designations from a national product, there are bound to be some areas that are imperfectly attributed," he said.

In another opinion, Brian Wolford, Executive Director of the Nebraska State Farm Service Agency, said the Drought Monitor is a good indicator of where to look for drought impacts, although it's often fruitful to include counties next to those that are officially in D3 or D4 drought." Whenever you draw a line, there's going to be people on one side that may not be in agreement with where it is," he said. Wolford emphasized that the U.S.

On the Web

- National Drought Mitigation Center: http://drought.unl.edu/
- Drought Monitor: http://drought.unl.edu/dm/monitor.html
- Drought Impact Reporter: http://droughtreporter.unl.edu

The Intermountain West Climate Summary is published monthly by Western Water Assessment, a joint project of University of Colorado and NOAA/ESRL Physical Sciences Division; researching water, climate and societal interactions.

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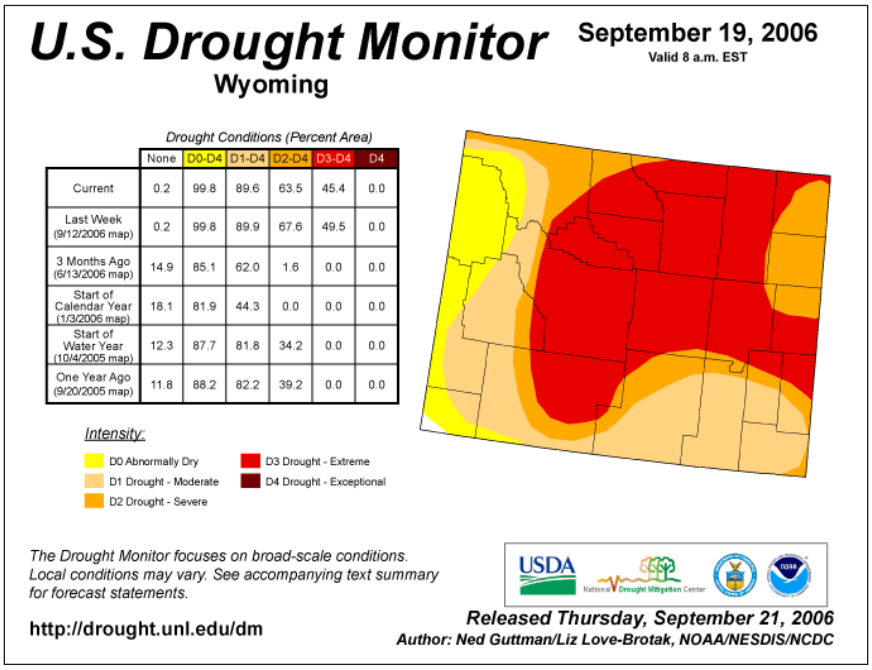

Figure 1b. State level drought condition product for Wyoming.

Drought Monitor brings an additional focus to the FSA's standard data collection methods, quantifying crop yields and losses on a county-by-county basis.

Wolford observed that in the past five years, "The USDA has begun using the Drought Monitor more in program administration." In addition to the newly announced Livestock Assistance Grant Program, the USDA has used the Drought Monitor to determine eligibility for emergency haying and grazing of Conservation Reserve Program land and to qualify producers in designated counties for the Cattle Feed Program and the Livestock Compensation Program. "We're trying to provide better tools to help producers make their case when these kinds of issues come up," Svoboda said. However, he cautioned, farmers and ranchers should assume that they bear the burden of proof in making the case that their specific circumstances warrant assistance.

Drought Impact Reporter

Recognizing the need for impacts information to complement the data on physical systems, the NDMC is also working to improve the Drought Impact Reporter. The Reporter went live in July 2005, relying mainly on collected media reports and other submitted impacts. Mike Hayes, NDMC Associate Director, said, "In our workshops and interactions with producers, we tell them that one of the best mitigation strategies a producer can take -- in other words, an action taken before a drought occurs -- is great record keeping. That might include historical yield data, planting data, climate data, and pictures. If a producer has documentation, and then can get supplemental information from their Regional Climate Centers, State Climatologists, local county extension agents, and local National Weather Service offices, they are going to be well-prepared to offer an argument for an exception."