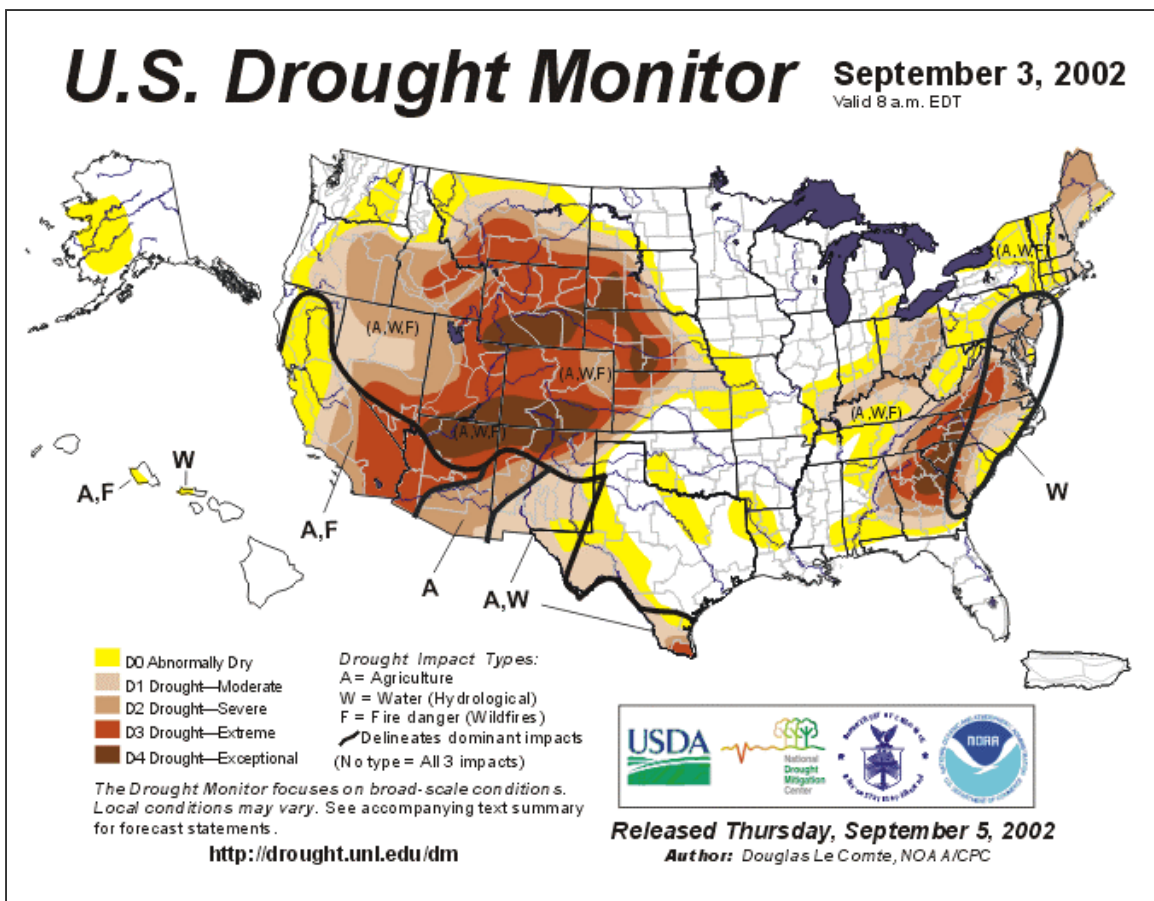


DROUGHT

History

The New River Valley has just come out of an extended severe drought. The drought that began in 1998 and continued through the early Fall of 2002 impacted public water supplies, agriculture and fire dangers (as revealed in Figure 38 below.) The accumulated rainfall deficit was at least 20 inches before rain finally resumed. The effect was more dramatic because most of the limited rainfall was in the summertime, when vegetation used it up, versus the more typical heavy precipitation in the winter when groundwater recharges.

Figure 38



Risk Assessment and Vulnerability

No place in the world is immune to drought. Rainfall fluctuates year to year and a moisture year “below average” is not uncommon. What is not yet well understood, however, is the likelihood of multi-year, severe droughts. A research team from Columbia University is currently researching drought for the past 1,000 years or so in the eastern U.S. to get a sense of frequency and severity of impact.

It is understood from the recent drought, though, that it poses a serious threat to public water supplies, agriculture and wildfire dangers.

Water Supplies

About 70% of NRV residents receive their water from a public water system, and therefore about 50,000 people are dependent on private springs and wells (see Table 20). The public water systems across the NRV are not generally interconnected, leaving systems vulnerable to inadequate supplies. For example the Giles County Public Service Authority system, which supplies five towns and much of the unincorporated area, has only one primary source (well).

Table 20

Locality	Population (2000)*	% on Private Well or Spring, 1990**
Floyd County	13,874	92.0%
Town of Floyd	432	
Giles County	16,657	44.7%
Glen Lyn Town	151	
Narrows Town	2,111	
Pearisburg Town	2,729	
Pembroke Town	1,134	
Rich Creek Town	665	
Montgomery Co. (Unincorporated areas only)	27,109	25.3%
Elliston-Lafayette CDP	1,241	
Merrimac CDP	1,751	
Shawsville CDP	1,029	
Pulaski County	35,127	29.5%
Dublin	2,288	
Fairlawn CDP	2,211	
Pulaski	9,473	

* Source - US Census 2000

**Last time collected in US Census

In areas without public water systems, there were more than 700 dried-up springs and private wells during the recent drought (see replacement wells in Table 19). At \$2,000 to \$10,000 per replacement well, this cost alone totaled \$1,400,000 to \$7,000,000.

Table 21

**New River Drought Report and Surveillance Summary:
8/1/99 to 11/30/02***

	New River Valley
Total well applications	2,957
Replacement wells	726
Floyd County	463
Other NRV Localities	263
NRV Percentage replacement wells	24.6%
Floyd County percentage replacement wells	43.90%
Other NRV Localities % replacement wells	13.90%

Source: Virginia Department of Health, New River Valley District

*Does not include January to July, 2000; data unavailable.

Special Hazard Area

About 63% of the replacement wells in the NRV from August 1999 to November 2002 were in Floyd County, which is the only NRV jurisdiction in the Blue Ridge Physiographic region. Throughout the period more than 43% of well permits in Floyd County were for replacement wells. By the worst part of the drought in 2002, this percentage increased to more than half (Figure 39). Spatial analysis of the well permits revealed that the replacement wells in Floyd County were not clustered around any particular area, but were geographically dispersed. Moreover, 29% of the wells had to go deeper than 400 feet, and 45% of the new wells yielded 5 gallons per minute or less (see maps of each analysis in the Large Map Supplement.) Based on this and the number of households dependent on private water supplies, it is estimated that 5,000 households are still vulnerable to water loss in droughts.

Figure 39

