

Water-Data Report 2009

**03584600 ELK RIVER AT PROSPECT, TN**

Middle Tennessee-Elk Basin  
Lower Elk Subbasin

LOCATION.--Lat 35°00'50.95", long 86°59'40.74" referenced to North American Datum of 1927, Giles County, TN, Hydrologic Unit 06030004, on right bank 25 ft upstream from county road bridge, 800 ft above abandoned L&N Railroad bridge, 0.4 mi above Ford Creek, 0.8 mi south of Prospect, 2.9 mi upstream from Tennessee-Alabama State line, and at mile 36.5.

DRAINAGE AREA.--1,805 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--July 1904 to February 1908, January 1919 to September 1994, August 2003 to current year. Published as "near Elkmont, Ala." 1904-8, 1919-34. Record for both sites published January to March 1934. Published as "near Prospect, Tenn." 1935-89.

REVISED RECORDS.--WSP 523: 1904-8, 1919-20. WSP 823: Drainage area. WSP 1436: 1920-22, 1923(M), 1924, 1927, 1929, 1931-32(M).

GAGE.--Data collection platform and pressure sensor and crest-stage gage. Datum of gage is 558.70 ft above NGVD of 1929. July 1, 1904, to Feb. 2, 1908, and Jan. 20, 1919, to Mar. 31, 1934: nonrecording gage 6.9 mi downstream at datum 8.93 ft. lower. January 1934 to September 1989, water-stage recorder at site 5.0 mi upstream at datum 4.59 ft higher.

REMARKS.--Records good. Flow regulated by Woods Reservoir (station 03579000) since May 1952, and Tims Ford Lake (station 03580740) since December 1970. (+) Adjusted for change in contents in Woods Reservoir and Tims Ford Lake. Contents (cfs-days) for adjustments furnished by Arnold Engineering Development Center and Tennessee Valley Authority.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1902 reach a stage of 40.9 ft, site and datum then in use, discharge, 130,000 ft<sup>3</sup>/s, and may have been equaled by a flood in March 1897, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,800 ft<sup>3</sup>/s, Dec. 12, gage height 20.16 ft; minimum, 218 ft<sup>3</sup>/s, Oct. 3 and 4.

## 03584600 ELK RIVER AT PROSPECT, TN—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	227	1,030	989	4,990	2,400	1,230	3,100	2,330	843	335	918	323
2	224	757	959	4,720	1,400	1,850	2,890	12,000	802	319	1,260	325
3	219	644	1,860	3,980	1,570	2,200	10,700	17,900	829	312	1,300	327
4	222	732	1,720	3,540	1,220	2,050	13,500	18,200	887	320	827	325
5	229	1,010	1,760	2,640	1,050	1,790	6,320	14,200	890	800	647	322
6	228	1,010	1,820	5,060	962	1,750	4,570	13,700	817	1,400	576	309
7	226	1,110	1,940	13,700	1,080	1,630	3,600	17,400	751	871	540	304
8	418	1,010	996	12,100	1,020	1,490	3,910	13,100	714	610	485	434
9	1,450	630	1,320	7,180	809	1,360	3,480	10,800	689	499	439	523
10	1,310	477	13,900	6,750	1,180	1,250	3,460	9,650	683	415	404	974
11	623	409	19,800	6,230	1,510	1,140	5,410	8,850	717	382	407	506
12	515	385	22,200	6,310	1,940	1,040	4,560	8,320	680	372	539	480
13	406	383	13,800	5,720	1,920	1,040	3,780	7,920	673	2,600	505	400
14	344	398	6,180	5,060	1,780	2,840	4,890	7,630	652	1,280	484	368
15	324	414	5,740	5,280	1,500	9,420	6,540	7,390	639	844	425	357
16	312	882	6,440	4,000	872	8,340	5,090	6,960	637	648	389	400
17	415	923	8,050	4,560	782	5,600	4,340	5,900	589	605	370	1,230
18	711	698	8,910	4,360	919	4,050	3,950	4,600	493	577	408	2,360
19	726	579	7,460	2,400	1,270	3,140	3,390	2,660	461	495	437	6,560
20	585	510	4,950	3,470	1,250	2,550	5,810	2,010	446	453	411	6,430
21	567	470	7,420	3,460	1,090	2,120	6,170	1,680	433	431	415	13,500
22	734	440	6,850	3,570	1,020	1,840	5,260	1,460	423	458	428	9,440
23	934	667	6,270	3,280	928	1,650	4,530	1,310	404	463	411	8,730
24	962	1,070	6,140	3,110	858	1,500	3,940	1,230	380	452	382	7,940
25	1,270	1,060	7,360	2,620	825	1,890	4,470	1,250	363	420	364	4,420
26	1,380	1,600	7,000	2,260	818	12,800	3,230	1,280	358	400	348	3,800
27	925	1,860	6,310	2,090	829	20,300	2,570	1,280	355	380	334	7,260
28	772	1,890	6,430	2,620	903	9,950	3,250	1,180	367	427	323	5,050
29	713	1,100	7,310	2,740	---	5,870	3,150	1,060	362	1,030	345	3,020
30	672	1,710	6,530	3,210	---	4,580	2,400	965	351	678	356	2,170
31	816	---	5,750	2,970	---	3,510	---	901	---	656	351	---
<b>Total</b>	19,459	25,858	204,164	143,980	33,705	121,770	142,260	205,116	17,688	19,932	15,828	88,587
<b>Mean</b>	628	862	6,586	4,645	1,204	3,928	4,742	6,617	590	643	511	2,953
<b>Max</b>	1,450	1,890	22,200	13,700	2,400	20,300	13,500	18,200	890	2,600	1,300	13,500
<b>Min</b>	219	383	959	2,090	782	1,040	2,400	901	351	312	323	304
<b>MEAN(†)</b>	318	449	6,521	3,851	1,262	5,041	5,365	6,907	546	653	494	3,253
<b>CFSM(†)</b>	0.18	0.25	3.61	2.13	0.70	2.79	2.97	3.83	0.30	0.36	0.27	1.80
<b>IN.(†)</b>	0.20	0.28	4.17	2.46	0.75	3.22	3.32	4.41	0.34	0.42	0.32	2.01

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	1,589	2,827	5,438	5,594	5,227	5,727	3,957	2,640	1,700	1,150	838	1,143
<b>Max</b>	8,699	8,888	15,320	17,290	13,680	17,700	10,220	9,806	8,011	6,260	2,439	4,389
<b>(WY)</b>	(1976)	(1978)	(1991)	(1974)	(1994)	(1973)	(1983)	(1983)	(1989)	(1989)	(2001)	(1979)
<b>Min</b>	188	301	532	629	1,204	1,464	728	445	201	329	241	169
<b>(WY)</b>	(2008)	(2008)	(2008)	(2008)	(2009)	(1985)	(1986)	(1988)	(1988)	(2007)	(1987)	(1999)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		*Water Years 1972 - 2009	
<b>Annual total</b>	704,361		1,038,347			
<b>Annual mean</b>	1,924		2,845		3,137	
<b>Highest annual mean</b>					5,214	1973
<b>Lowest annual mean</b>					1,013	1981
<b>Highest daily mean</b>	22,200	Dec 12	22,200	Dec 12	105,000	Mar 17, 1973
<b>Lowest daily mean</b>	219	Oct 3	219	Oct 3	101	Sep 6, 1999
<b>Annual seven-day minimum</b>	225	Oct 1	225	Oct 1	114	Aug 31, 1999
<b>Maximum peak flow</b>			22,800	Dec 12	<sup>a</sup> 117,000	Mar 17, 1973
<b>Maximum peak stage</b>			20.16	Dec 12	40.12	Mar 17, 1973
<b>Instantaneous low flow</b>			<sup>b</sup> 218	Oct 3	<sup>c</sup> 78	Sep 29, 1961
<b>10 percent exceeds</b>	5,580		7,330		6,940	
<b>50 percent exceeds</b>	802		1,180		1,550	
<b>90 percent exceeds</b>	354		369		389	

\* Regulated period only.

<sup>a</sup> From rating curve extended above 63,000 ft<sup>3</sup>/s on basis of slope-area measurement of gage height 38.17 ft and contracted-opening measurement at gage height 38.96 ft, site and datum then in use.

<sup>b</sup> Also occurred Oct. 4.

<sup>c</sup> Caused by highway construction.

