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**Arizona Stream Navigability Study
for the
Verde River:
Salt River Confluence to Sullivan Lake
Draft Final Report**

Prepared for the

Arizona State Land Department



Date of Original Report: November 1993

Prepared by



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Revised:

June 2003:

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Flood Hydraulics. Limited flood hydraulics data are available from Flood Insurance Studies for the Verde River, since much of the Verde River flows on public land. Flood studies have been completed for all of the Verde Valley area, a reach within the middle Verde River. Flood depths, of course, are not limiting with respect to boating. In the Verde Valley, velocities for the 100-year flood average about 8 feet per second (fps), and range from about 4 fps to 19 fps. Higher velocities typically occur in constricted reaches, such as under bridges. Lower velocities typically occur upstream of constrictions and in relatively wider, shallower reaches. The average velocities reported do not exceed federal maximum recommended velocities for floating-type boats such as canoes. However, other river conditions during floods, such as floating debris, could indeed making boating hazardous.

Irrigation

Irrigation has been practiced on the Verde River since prehistoric times. Several reports published from 1890 to 1914 describe in detail irrigation works along the river. Hancock (1914) describes irrigation diversions along the entire Verde River at the time of statehood (Table 7-16). In 1914, 25 diversions diverted more than 121 cfs for more than 5,000 acres of farm land between Perkinsville and the Salt River. Diversions lowered measured streamflow, depleted stream resources (Hayden, 1940) and may have contributed to channelization of the middle Verde River. By 1980, about 30 irrigation diversions existed in the upper and middle Verde, providing water for about 7,800 acres. Near Cottonwood and Camp Verde, these diversions took more than half the ordinary flow of the Verde River, and all or portions of the flow several tributaries, including West Clear Creek (Owen-Joyce and Bell, 1983). Similarity of modern and historical irrigation rates give further evidence of the hydrologic similarity of the statehood and modern periods.

**Table 7-16
Historical Irrigation Diversions on the Verde River (cfs)**

Diversion	Capacity	Normal Diversion Rate	Construction Date	Approximate Location
Campbell	3	3	1874	
Perkins	2	2	1864	Perkinsville
Alvarez	1	1	1901	
Thorbeck	2	2	1880	Sycamore Ck
Duff	4	1	1879	
Sullivan	2	1	1896	
E. Jordan	4	4	1882	
W. Jordan	2	1	1880	
Humbert	1	1	1898	Clarkdale
Allen	9	5	1898	
Hickey	6	5	1874	
Cottonwood	31	25	1874	Cottonwood
O.K.	33	26	1875	
Central Verde	15	0	1875	
Verde	29	25	1868	
Eureka	13	12	1893	
Enterprise	4	0	1892	
Eman	6	6	1895	Camp Verde
Newman	2	0	1870	
Starks	1	0	1913	
Asher	-	-	1895	Ft. McDowell

Source: Hancock, 1914 (see also Straud and Prathan, 1899)

Note: Does not include diversion from springs, tributaries to Verde, or pumping from Verde