Middle Fork American River
05 August 2004 Water Release

Synopsis by E. Holst
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On 05 August 2004 during an electrical mishap at Oxbow Powerhouse, a gate remained open for approximately 60 to 90 minutes, resulting in a surge of water that went from 200 cfs to 5,000 cfs[1]. Various news media accounts of the release reported a 1-2 m (3 to 6 ft) wall of water moving down the canyon.

At the confluence of the Middle Fork and North Fork American River (essentially the Highway 49 bridge crossing), the rise in water level was approximately 1 m (3 ft) (Figures 1, 2, and 3).

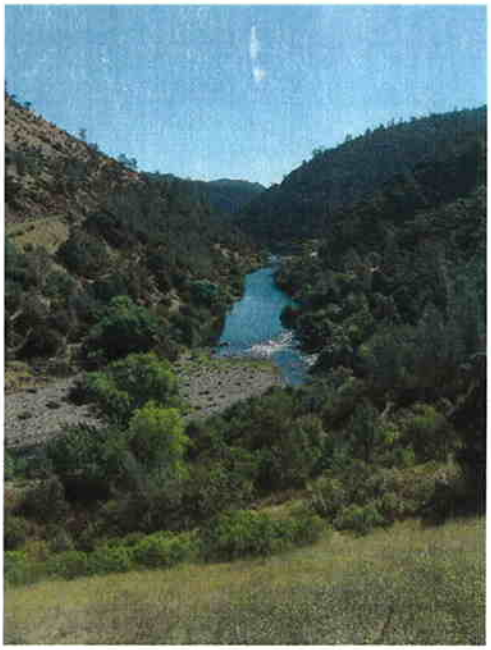

Figure 1. Gravel bar near confluence prior to release at 8:41 AM, 05 August 2004.

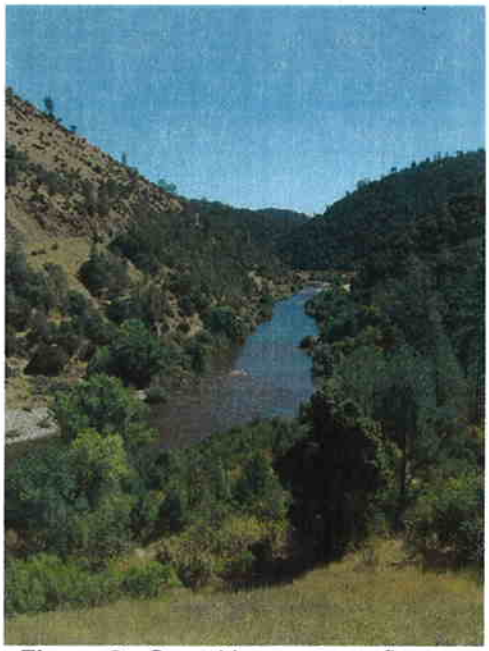

Figure 2. Gravel bar near confluence during release at 10:00 AM, 05 August 2004.

[1] Sacramento Bee, 06 August 2004. *Dam mishap releases water, evacuates river.* By Stuart Leavenworth and Art Campos.

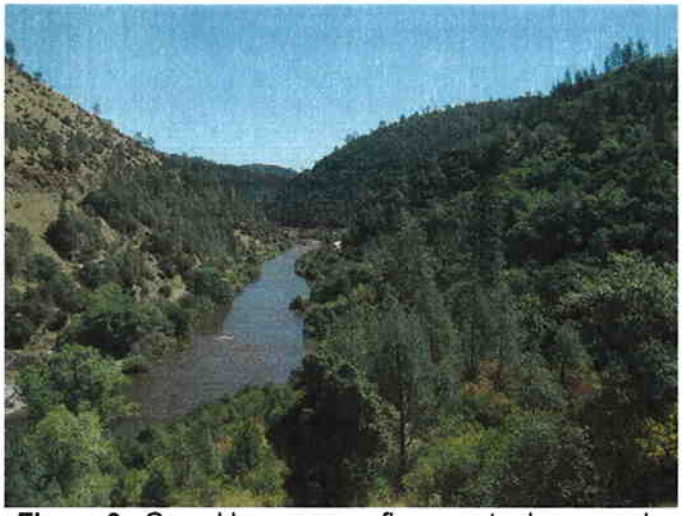

Figure 3. Gravel bar near confluence at release peak.
(Photo taken 10:04 AM, 05 August 2004)

On the afternoon of 05 August 2004, an Eldorado National Forest Fisheries Crew consisting of Mark Daniels and myself, conducted a post-incident foothill yellow-legged frog survey at Cache Bar[2]; a gravel bar that is approximately 8 km (5 mi) downstream from Oxbow Reservoir (Figure 8). Leaves and debris deposited on riparian vegetation along Cache Bar indicated that the water had risen from 1.2-2 m (4-6 ft) (Figures 4 and 5). On rivers such as the Middle Fork American, foothill yellow-legged frog surveys consist of examining and backwater pools on gravel bars for larvae, metamorphs, and adult frogs. No frogs were found on the 05 August survey of Cache Bar; sculpin (5-10 cm [2-4 in] in size) and crawfish were found dead, the sculpin generally being found behind large boulders. A minimal number of aquatic macroinvertebrates were observed during these surveys.

Figure 4. Water level at Cache Bar during release.
(Photo taken 12:55 PM, 05 August 2004)

That same day, contact was made with a miner named Tom Winton who was looking for his aluminum boat. He said that he had been awakened that morning by the "roar of the river" next to his tent and had managed to pull his suction dredge onto the riverbank; however, since the boat was chained to a rock, he hadn't expected it to break loose. Mr. Winton also stated that the release flows were the highest he has seen the river in 4 or 5 years, including spring runoff. During our conversation at approximately 3:00 PM, he also noted that the river had receded well below normal flows (Figures 4 and 5).

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[2] We were originally scheduled to survey Cache Bar the morning of 05 August 2004, but were diverted due to the Oxbow Powerhouse water release.

Figure 5. Water levels at Cache Bar on the Middle Fork American after the 05 August 2004 release.
(Photo taken 1:04 PM, 05 August 2004)

At Cache Bar, watermarks on the riverbank indicated that several of the campsites had been underwater, including the last campsite, where we later learned that a suction dredge had been washed downriver during the water release (Figure 6).

Figure 6. Campsite 6 at Cache Bar.
(Photo taken 1:42 PM, 05 August 2004)

On 06 August 2004, Mark Daniels and I conducted another post-incident foothill yellow-legged frog survey at Gray Eagle Bar below Horseshoe Bar on the Middle Fork American River. Gray Eagle Bar is approximately 2.4 km (1.5 mi) below the Oxbow Powerhouse (Figure 8). Backwater eddies and slack water pools were examined for frog larvae, metamorphs, and adults. No amphibians were found during this survey and all backwater eddies and pools were devoid of animal life. No macroinvertebrates or sculpin were observed and only fragments of crawfish were observed, indicating high water velocities. Water level indicators on vegetation demonstrated that the water levels were generally higher than those found on Cache Bar, ranging from 1.2-2 m (4-6 ft) (Figure 6 vs. 7).

A follow-up conversation with California State Parks Ranger, Bill Deitchman[3] regarding the 05 August release indicated that the character of many of the gravel bars along the Middle Fork American River had been altered by the release; he stated that material, generally fist sized and smaller had been moved and re-deposited by the flows.

Based on observations of crawfish remains and fish remains, it appears that water levels, water velocities, and adverse effects to aquatic species were higher near the Oxbow Powerhouse and subsided corresponding with downstream survey distances from the powerhouse (Figure 8).

Figure 7. Water levels at Gray Eagle Bar on the Middle Fork American after the 05 August 2004 release.
(Photo taken approximately 14:25 PM. 06 August 2004)

[3] Telephonic conversation on 11 August 2004.

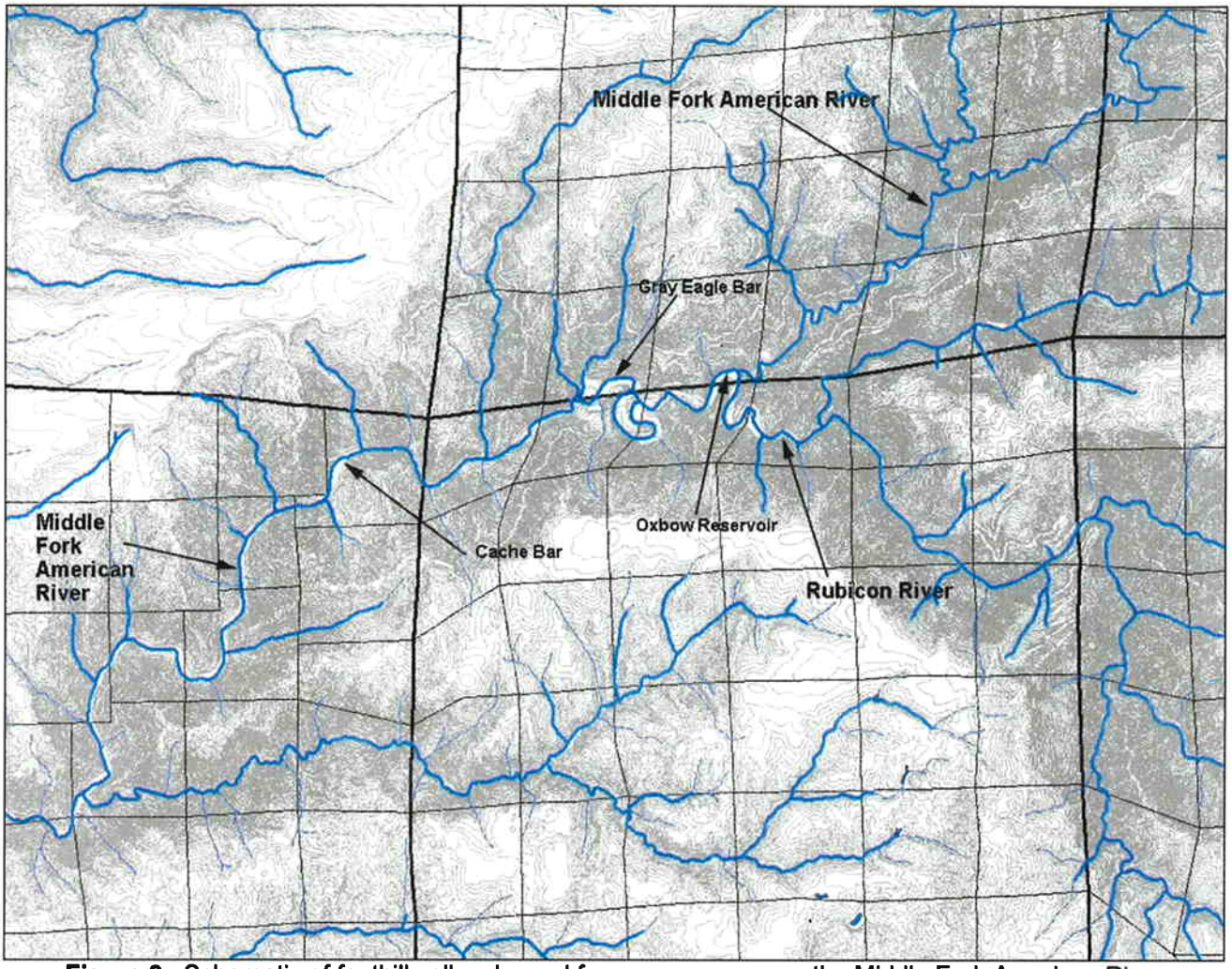

Figure 8. Schematic of foothill yellow-legged frog survey areas on the Middle Fork American River on 05 & 06 August 2004.