

90% pulse flow designation

Nueces BBEST

October 7, 2011

Streams with 90% rule applied

- Dry Frio: adds a 2/season winter pulse
- Frio at Concan: adds a 2/season summer pulse
- Nueces at Laguna: adds winter and fall 1/season pulses
- Sabinal below Edwards Outcrop: adds summer 1/season and spring 2/season pulses

Frio at Concan: 79 years of flow

- Subsistence = 10 cfs
- Base flows = 10, 33, 47 cfs
- 1/season summer pulse \geq 240 cfs
- 2/season summer pulses \geq 43 cfs

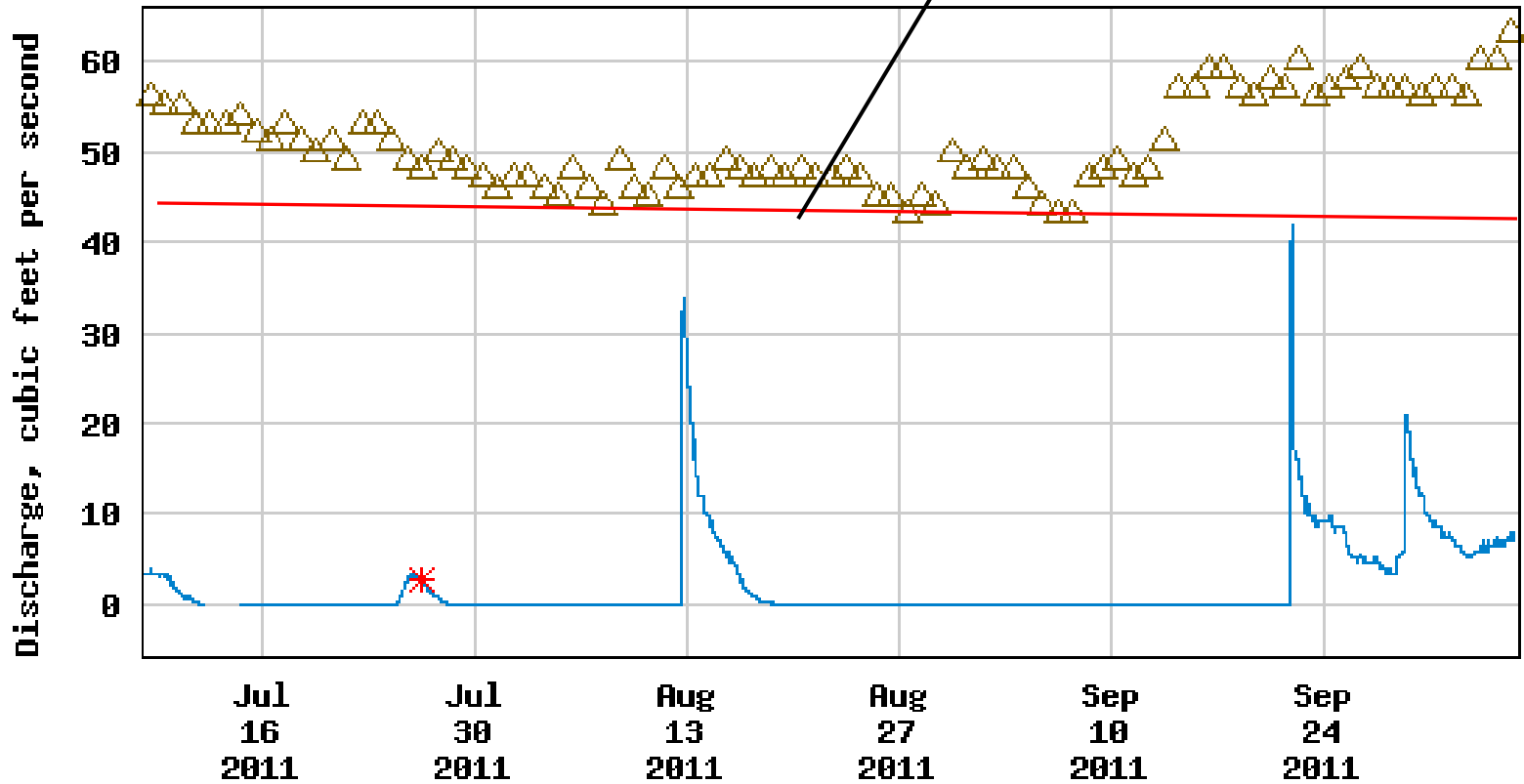
Application of our implementation rules

- If the first and/or second pulse of the summer, \geq a peak flow of 43 cfs, but does not exceed a peak flow of 239 cfs, the pulse would be passed until the volume (400 acre-feet) or duration (4 days is exceeded): 29 years
- If the first two pulses of the summer exceed a peak of 239 cfs, all subsequent pulses less than 240 cfs are potentially subject to diversion: approx. 22 years
- If there are no pulses \geq 43 cfs, all pulses less than 43 cfs are potentially subject to diversion: 15 years
- If the first and only pulse of the summer \geq 240 cfs, all pulses less than 43 cfs are potentially subject to diversion: 11 years
- If the first pulse of the summer is \geq 240 cfs, and the second pulse is between 43 and 240 cfs, the second pulse would be protected: 8 years



USGS 08195000 Frio Rv at Concan, TX

Summer 2/season pulse,
43 cfs



---- Provisional Data Subject to Revision ----

- △ Median daily statistic (85 years)
- * Measured discharge
- Discharge

Frio at Concan, 2/season summer pulses

Only summer pulses in:

- 1933, **1937, 1938, 1945, 1946, 1948, 1949, 1950**, 1953, 1965, 1975, **1982, 1983, 1985, 1986**, 1989, **1992, 1993**, 2003, **2008, 2009** (21 yrs only pulses were 2/season)
- Only seasonal pulse in: 1948, 1950, 1953, 2008
- 23 years had 2 or more, 1/season or higher, qualifying summer pulses
- 8 years had the 2/season summer pulse providing the second pulse
- 152 of 158 pulses occurred in summer (96% of the number needed to have 2/season summer pulses)

Frio at Concan, 2/season summer pulses

- Range from 43 to 236 cfs
- Median = 89 cfs, maximum duration of 16 days
- 71 pulses
- 23,364 acre feet

Application of our implementation rules

Dry Frio at Reagan Wells

- Base flows = 7, 12, 17 cfs
- 2/season winter pulses have to exceed 7 cfs
- 1/season winter pulse is 32 cfs
- If the first or second pulse of the winter, exceeds a peak flow of 7 cfs, but does not exceed a peak flow of 31 cfs, the pulse would be passed until the volume (98 acre-feet) or duration (5 days is exceeded)