

Nueces BBEST Hydrology Update

April 29, 2011

Notes

- This powerpoint contains preliminary HEFR outputs for all Nueces BBEST gages.
- The 1 in 5 year event is arbitrarily labeled as overbank. Smaller events are arbitrarily labeled as HFPs. Actual data defining bankfull will be used to correct these labels at a later date.
- The BBEST is considering filling in HFP white spaces if observed events come within X% of the #/season requirement (e.g., 95 winter events in a 100 year POR for 1/winter season). No changes have been made to the HEFR tables yet. Awaiting final decision.

Notes

- Additional figures are provided at four locations to explore duration of zero flow events, duration of non-zero flow events, and monthly pattern of zero flow days.
 - Nueces River below Uvalde
 - Nueces River at Cotulla
 - Sabinal River near Sabinal
 - (Above Edwards Outcrop, aka AEO)
 - San Miguel Creek near Tilden

Notes

- Also included is a frequency plot of base flows at Nueces River at Cotulla
 - This figure shows that about one-half of the base flows are very low flows ($< \sim 1$ cfs) and about one-half are higher.

For Reference:

ShortGageName	5th %ile	Perennial?	Edwards Plateau or Desert & Coastal?
NRLaguna	18.0000	Yes	EP
WNRBrackettville	0.0001	No	EP
NRUvalde	0.0001	No	DC
NRCotulla	0.0001	No	DC
NRTilden	0.0001	No	DC
NRThree	1.1000	Yes	DC
NRMathis	42.0000	Yes	DC
LeonaSpgs	0.0001	No	EP
FRConcan	12.0000	Yes	EP
DFRReagan	1.1000	Yes	EP
FRDerby	0.0001	No	DC
FRTilden	0.0000	No	DC
SRSabinal	0.0001	No	EP
SRSabinalBEO	0.0001	No	EP
SCUtopia	0.1200	Yes	EP
HCTarpley	0.0001	No	EP
SMCTilden	0.0001	No	DC
ARWhitsett	0.1500	Yes	DC
OCCorpus	0.8900	Yes	DC
SFCAllice	0.6835	Yes	DC

P

I

Overbank Flows	Qp: 15,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 54,390 to 280,918 (123,609) Regressed Duration is 17 to 107 (43)											
	Qp: 4,750 cfs with Average Frequency 1 per 2 years Regressed Volume is 17,039 to 87,605 (38,635) Regressed Duration is 10 to 64 (26)											
High Flow Pulses	Qp: 2,220 cfs with Average Frequency 1 per year Regressed Volume is 8,106 to 41,594 (18,362) Regressed Duration is 7 to 46 (18)											
	Qp: 393 cfs with Average Frequency 1 per season Regressed Volume is 1,570 to 6,070 (3,087) Regressed Duration is 4 to 17 (8)						Qp: 171 cfs with Average Frequency 1 per season Regressed Volume is 599 to 3,099 (1,362) Regressed Duration is 2 to 14 (6)					
	Qp: 99 cfs with Average Frequency 2 per season Regressed Volume is 401 to 1,556 (790) Regressed Duration is 2 to 9 (4)											
Base Flows (cfs)	94 (42.5%)			86 (47.1%)			76 (41.5%)			97 (48.9%)		
	69 (61.2%)			63 (64.9%)			48 (56.8%)			62 (64.4%)		
	51 (78.9%)			44 (81.5%)			32 (71.2%)			41 (78.1%)		
Subsistence Flows (cfs)	14 (98.1%)			18 (99.0%)			16 (92.5%)			13 (95.7%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter			Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1924 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 15,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 46,804 to 237,292 (105,386) Regressed Duration is 14 to 81 (33)											
	Qp: 4,450 cfs with Average Frequency 1 per 2 years Regressed Volume is 13,972 to 70,195 (31,317) Regressed Duration is 8 to 49 (20)											
High Flow Pulses	Qp: 1,910 cfs with Average Frequency 1 per year Regressed Volume is 6,177 to 30,907 (13,818) Regressed Duration is 6 to 35 (15)											
					Qp: 358 cfs with Average Frequency 1 per season Regressed Volume is 1,298 to 5,182 (2,594) Regressed Duration is 3 to 15 (7)				Qp: 145 cfs with Average Frequency 1 per season Regressed Volume is 471 to 2,055 (983) Regressed Duration is 2 to 11 (5)			
					Qp: 105 cfs with Average Frequency 2 per season Regressed Volume is 399 to 1,597 (798) Regressed Duration is 2 to 9 (4)							
Base Flows (cfs)	86 (36.5%)			80 (42.3%)			66 (37.1%)			87 (43.5%)		
	61 (56.9%)			59 (61.3%)			40 (54.7%)			46 (59.8%)		
	40 (76.5%)			37 (80.2%)			26 (70.1%)			32 (74.0%)		
Subsistence Flows (cfs)	9.6 (97.3%)			15 (99.3%)			13 (93.4%)			8.5 (94.9%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring				Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1924 to 12/31/1969.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 16,800 cfs with Average Frequency 1 per 5 years Regressed Volume is 65,643 to 344,258 (150,327) Regressed Duration is 21 to 142 (55)											
	Qp: 5,650 cfs with Average Frequency 1 per 2 years Regressed Volume is 22,785 to 118,448 (51,951) Regressed Duration is 13 to 86 (33)											
High Flow Pulses	Qp: 2,730 cfs with Average Frequency 1 per year Regressed Volume is 11,234 to 58,161 (25,562) Regressed Duration is 9 to 61 (24)											
				Qp: 404 cfs with Average Frequency 1 per season Regressed Volume is 1,824 to 6,747 (3,508) Regressed Duration is 4 to 19 (9)			Qp: 311 cfs with Average Frequency 1 per season Regressed Volume is 1,209 to 7,131 (2,936) Regressed Duration is 3 to 22 (8)			Qp: 88 cfs with Average Frequency 1 per season Regressed Volume is 409 to 2,037 (913)		
				Qp: 90 cfs with Average Frequency 2 per season Regressed Volume is 401 to 1,496 (775) Regressed Duration is 2 to 10 (4)								
Base Flows (cfs)	100 (51.2%)			94 (52.2%)			92 (44.8%)			104 (55.2%)		
	77 (68.0%)			69 (68.4%)			64 (57.5%)			75 (69.5%)		
	62 (84.7%)			54 (82.9%)			45 (69.3%)			52 (83.4%)		
Subsistence Flows (cfs)	N/A			28 (98.8%)			22 (90.5%)			29 (97.8%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 11,200 cfs with Average Frequency 1 per 5 years Regressed Volume is 33,622 to 136,090 (67,644) Regressed Duration is 18 to 92 (41)											
	Qp: 4,090 cfs with Average Frequency 1 per 2 years Regressed Volume is 12,504 to 50,535 (25,138) Regressed Duration is 15 to 75 (33)											
High Flow Pulses	Qp: 1,020 cfs with Average Frequency 1 per year Regressed Volume is 3,197 to 12,899 (6,422) Regressed Duration is 11 to 57 (26)											
	Qp: 1 cfs with Average Frequency 1 per season Regressed Volume is 3 to 13 (6) Regressed Duration is 3 to 14 (6)			Qp: 3 cfs with Average Frequency 1 per season Regressed Volume is 12 to 43 (23) Regressed Duration is 4 to 17 (8)			Qp: 2 cfs with Average Frequency 1 per season Regressed Volume is 8 to 29 (15) Regressed Duration is 3 to 19 (8)			Qp: 0 cfs with Average Frequency 1 per season Regressed Volume is 1 to 4 (2) Regressed		
	Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 0 to 1 (0) Regressed Duration is 2 to 8 (3)			Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 1 to 3 (1) Regressed Duration is 2 to 10 (5)			Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 0 to 0 (0) Regressed Duration is 2 to 9 (4)					
Base Flows (cfs)	0.57 (30.3%)			0.67 (31.3%)			0.6 (36.5%)			0.52 (43.0%)		
	0.3 (39.7%)			0.36 (39.2%)			0.23 (42.7%)			0.23 (51.2%)		
	0.12 (49.3%)			0.15 (46.7%)			0.1 (48.9%)			0.13 (58.2%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring				Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1946 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

WNRBrackettville19462009

Overbank Flows	Qp: 12,400 cfs with Average Frequency 1 per 5 years Regressed Volume is 26,604 to 102,305 (52,170) Regressed Duration is 11 to 68 (27)											
	Qp: 2,910 cfs with Average Frequency 1 per 2 years Regressed Volume is 6,953 to 26,507 (13,576) Regressed Duration is 9 to 54 (22)											
	Qp: 585 cfs with Average Frequency 1 per year Regressed Volume is 1,573 to 5,953 (3,060) Regressed Duration is 7 to 43 (17)											
	Qp: 0 cfs with Average Frequency 1 per season Regressed Volume is 1 to 2 (1) Regressed Duration is 2 to 7 (3)											
High Flow Pulses												
Base Flows (cfs)	0.57 (13.5%)			0.4 (16.0%)			0.4 (17.6%)			0.8 (26.5%)		
	0.3 (15.6%)			0.2 (17.9%)			0.2 (18.5%)			0.45 (28.1%)		
	0.14 (16.5%)			0.1 (19.9%)			0.1 (19.2%)			0.2 (30.1%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1946 to 12/31/1969.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 10,300 cfs with Average Frequency 1 per 5 years Regressed Volume is 34,596 to 140,877 (69,812) Regressed Duration is 21 to 103 (47)											
High Flow Pulses	Qp: 4,260 cfs with Average Frequency 1 per 2 years Regressed Volume is 14,382 to 58,458 (28,995) Regressed Duration is 18 to 86 (39)											
	Qp: 1,480 cfs with Average Frequency 1 per year Regressed Volume is 5,027 to 20,392 (10,124) Regressed Duration is 14 to 69 (31)											
	Qp: 1 cfs with Average Frequency 1 per season Regressed Volume is 4 to 18 (9) Regressed Duration is 3 to 15 (7)	Qp: 6 cfs with Average Frequency 1 per season Regressed Volume is 23 to 81 (43) Regressed Duration is 4 to 20 (9)	Qp: 4 cfs with Average Frequency 1 per season Regressed Volume is 15 to 53 (28) Regressed Duration is 5 to 20 (10)	Qp: 0 cfs with Average Frequency 1 per season Regressed Volume is 1 to 7 (3) Regressed								
	Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 1 to 5 (2) Regressed Duration is 2 to 11 (5)	Qp: 1 cfs with Average Frequency 2 per season Regressed Volume is 2 to 9 (5) Regressed Duration is 3 to 13 (6)	Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 1 to 2 (1) Regressed Duration is 2 to 10 (5)									
Base Flows (cfs)	0.57 (40.4%)			0.7 (41.1%)			0.61 (48.1%)			0.52 (52.2%)		
	0.3 (54.1%)			0.38 (52.4%)			0.23 (57.5%)			0.23 (64.2%)		
	0.12 (69.0%)			0.18 (62.6%)			0.1 (66.7%)			0.12 (75.7%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter			Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

WNRBrackettville19702009

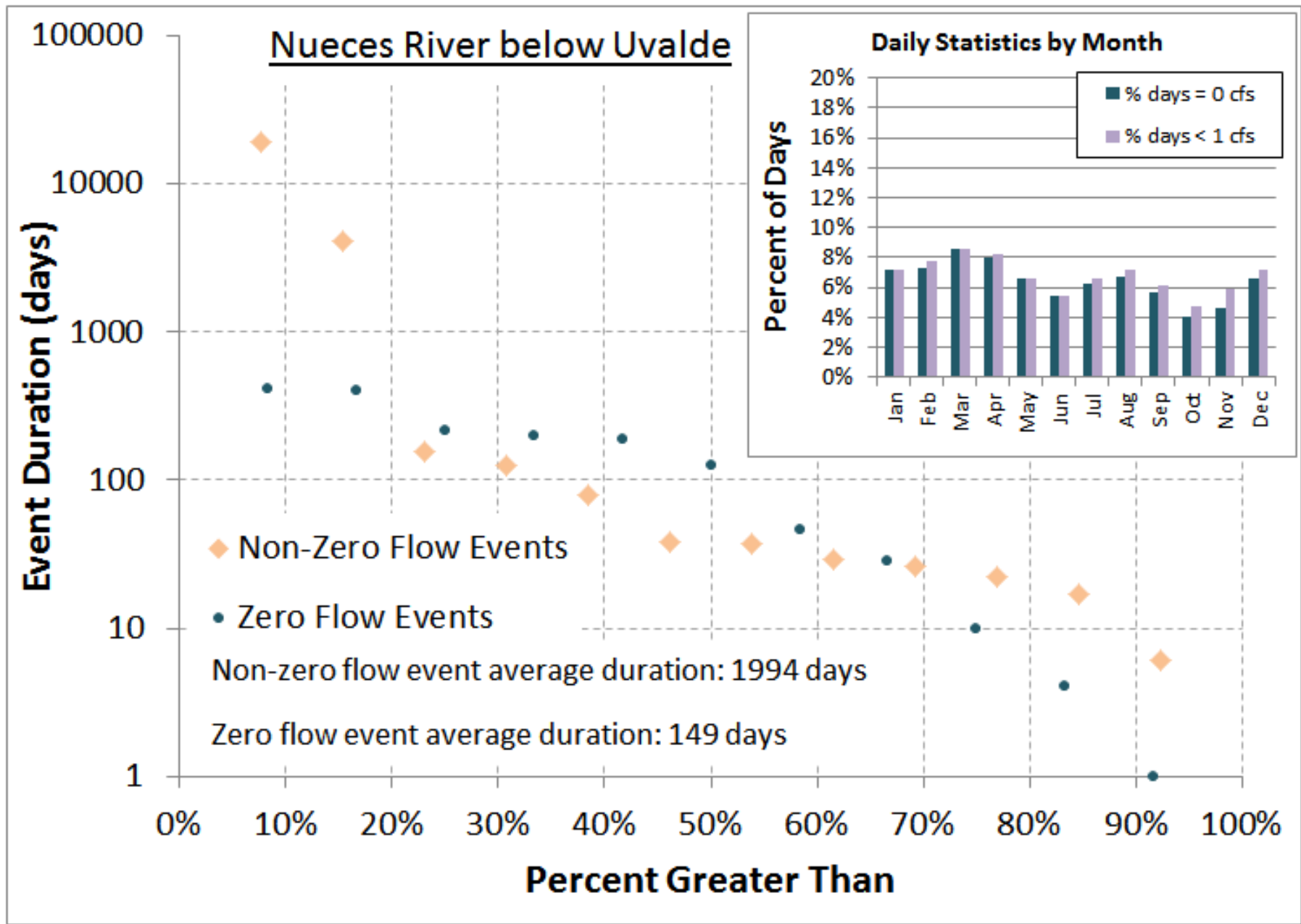
Overbank Flows	Qp: 18,700 cfs with Average Frequency 1 per 5 years Regressed Volume is 69,889 to 395,080 (166,168) Regressed Duration is 15 to 108 (40)											
	Qp: 6,920 cfs with Average Frequency 1 per 2 years Regressed Volume is 24,053 to 135,513 (57,092) Regressed Duration is 10 to 73 (27)											
High Flow Pulses	Qp: 2,550 cfs with Average Frequency 1 per year Regressed Volume is 8,237 to 46,290 (19,527) Regressed Duration is 7 to 49 (18)											
	Qp: 13 cfs with Average Frequency 1 per season Regressed Volume is 24 to 252 (77) Regressed Duration is 1 to 9 (3)				Qp: 110 cfs with Average Frequency 1 per season Regressed Volume is 303 to 1,276 (622) Regressed Duration is 2 to 11 (5)				Qp: 15 cfs with Average Frequency 1 per season Regressed Volume is 37 to 142 (72) Regressed		Qp: 50 cfs with Average Frequency 1 per season Regressed Volume is 116 to 686 (282)	
	Qp: 20 cfs with Average Frequency 2 per season Regressed Volume is 47 to 201 (98) Regressed Duration is 1 to 6 (3)											
Base Flows (cfs)	35 (44.7%)				38 (41.1%)				32 (43.4%)		37 (45.0%)	
	22 (60.7%)				20 (59.3%)				17 (59.7%)		19 (62.0%)	
	12 (77.6%)				12 (77.3%)				8.8 (76.5%)		9.3 (78.6%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter				Spring				Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1940 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRUvalde19402009



Overbank Flows	Qp: 17,800 cfs with Average Frequency 1 per 5 years Regressed Volume is 52,495 to 225,637 (108,834) Regressed Duration is 11 to 59 (26)											
	Qp: 6,850 cfs with Average Frequency 1 per 2 years Regressed Volume is 19,479 to 83,134 (40,242) Regressed Duration is 8 to 43 (19)											
High Flow Pulses	Qp: 1,730 cfs with Average Frequency 1 per year Regressed Volume is 4,662 to 19,745 (9,594) Regressed Duration is 5 to 26 (12)											
	Qp: 64 cfs with Average Frequency 1 per season Regressed Volume is 152 to 554 (290) Regressed Duration is 2 to 7 (3)						Qp: 47 cfs with Average Frequency 1 per season Regressed Volume is 103 to 411 (205)					
	Qp: 24 cfs with Average Frequency 2 per season Regressed Volume is 55 to 202 (106) Regressed Duration is 1 to 5 (3)											
Base Flows (cfs)	22 (32.5%)			26 (29.0%)			23 (32.5%)			24 (37.9%)		
	14 (50.4%)			14 (53.6%)			12 (52.5%)			13 (58.4%)		
	7.2 (67.1%)			9.1 (67.4%)			7 (68.5%)			7.1 (72.2%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1940 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

NRUvalde19401969

Overbank Flows	Qp: 19,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 78,236 to 515,277 (200,781) Regressed Duration is 17 to 149 (50)											
	Qp: 7,130 cfs with Average Frequency 1 per 2 years Regressed Volume is 26,728 to 174,928 (68,377) Regressed Duration is 11 to 98 (33)											
	Qp: 3,470 cfs with Average Frequency 1 per year Regressed Volume is 12,432 to 81,088 (31,751) Regressed Duration is 8 to 73 (25)											
	Qp: 14 cfs with Average Frequency 1 per season Regressed Volume is 27 to 365 (98) Regressed Duration is 1 to 10 (3)				Qp: 234 cfs with Average Frequency 1 per season Regressed Volume is 838 to 3,676 (1,755) Regressed Duration is 3 to 20 (8)				Qp: 42 cfs with Average Frequency 1 per season Regressed Volume is 111 to 456 (224)		Qp: 51 cfs with Average Frequency 1 per season Regressed Volume is 133 to 980 (361)	
High Flow Pulses												
Base Flows (cfs)	41 (54.7%)				48 (48.4%)				42 (47.4%)		48 (49.6%)	
	28 (70.0%)				29 (64.9%)				29 (61.4%)		30 (64.4%)	
	21 (83.7%)				18 (80.7%)				17 (75.1%)		19 (77.0%)	
Subsistence Flows (cfs)	8.3 (98.8%)				6.4 (97.4%)				3.7 (94.0%)		5.2 (95.6%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRUvalde19702009

Overbank Flows	Qp: 15,100 cfs with Average Frequency 1 per 5 years Regressed Volume is 83,509 to 271,431 (150,555) Regressed Duration is 10 to 42 (21)													
	Qp: 8,410 cfs with Average Frequency 1 per 2 years Regressed Volume is 44,768 to 145,466 (80,699) Regressed Duration is 9 to 38 (19)													
High Flow Pulses	Qp: 4,460 cfs with Average Frequency 1 per year Regressed Volume is 22,779 to 73,993 (41,055) Regressed Duration is 8 to 34 (17)													
	Qp: 96 cfs with Average Frequency 1 per season Regressed Volume is 438 to 1,572 (830) Regressed Duration is 5 to 20 (10)				Qp: 1,180 cfs with Average Frequency 1 per season Regressed Volume is 5,654 to 17,154 (9,848) Regressed Duration is 7 to 24 (13)				Qp: 103 cfs with Average Frequency 1 per season Regressed Volume is 376 to 1,027 (622)		Qp: 644 cfs with Average Frequency 1 per season Regressed Volume is 2,952 to 8,609 (5,041)			
	Qp: 8 cfs with Average Frequency 2 per season Regressed Volume is 29 to 104 (55) Regressed Duration is 3 to 13 (6)				Qp: 192 cfs with Average Frequency 2 per season Regressed Volume is 782 to 2,370 (1,361) Regressed Duration is 5 to 17 (9)						Qp: 35 cfs with Average Frequency 2 per season Regressed Volume is 123 to 358 (210)			
	Base Flows (cfs)			38 (29.9%)			30 (36.4%)			32 (30.5%)		42 (38.7%)		
			6.2 (39.6%)			10 (44.2%)			6.9 (37.3%)		15 (46.7%)			
			0.33 (52.2%)			1.3 (53.3%)			0.49 (43.5%)		1.3 (56.2%)			
Subsistence Flows (cfs)			0 (100.0%)			0 (100.0%)			0 (100.0%)		0 (100.0%)			
			Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
			Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1927 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRCotulla19272009

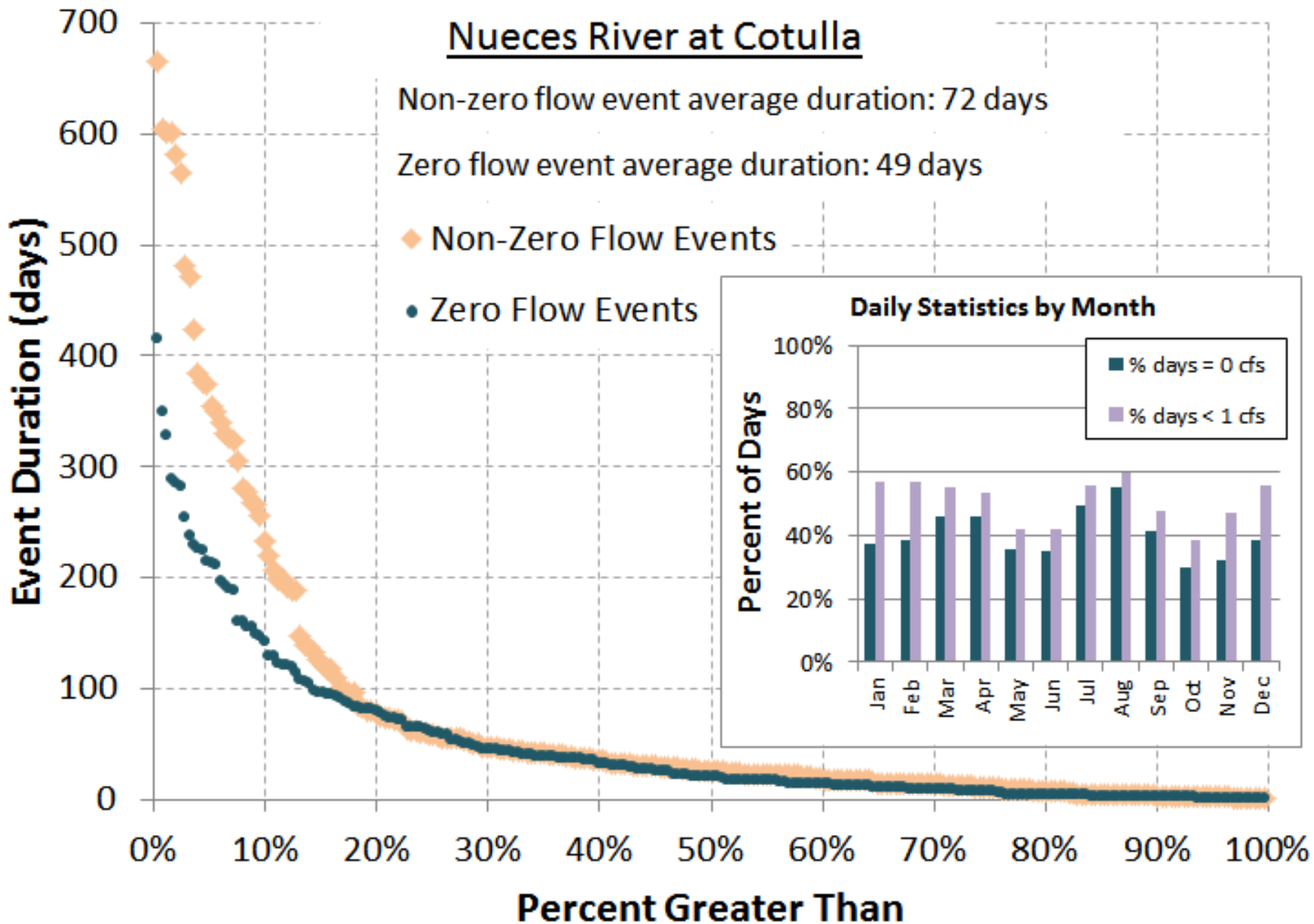
Nueces River at Cotulla

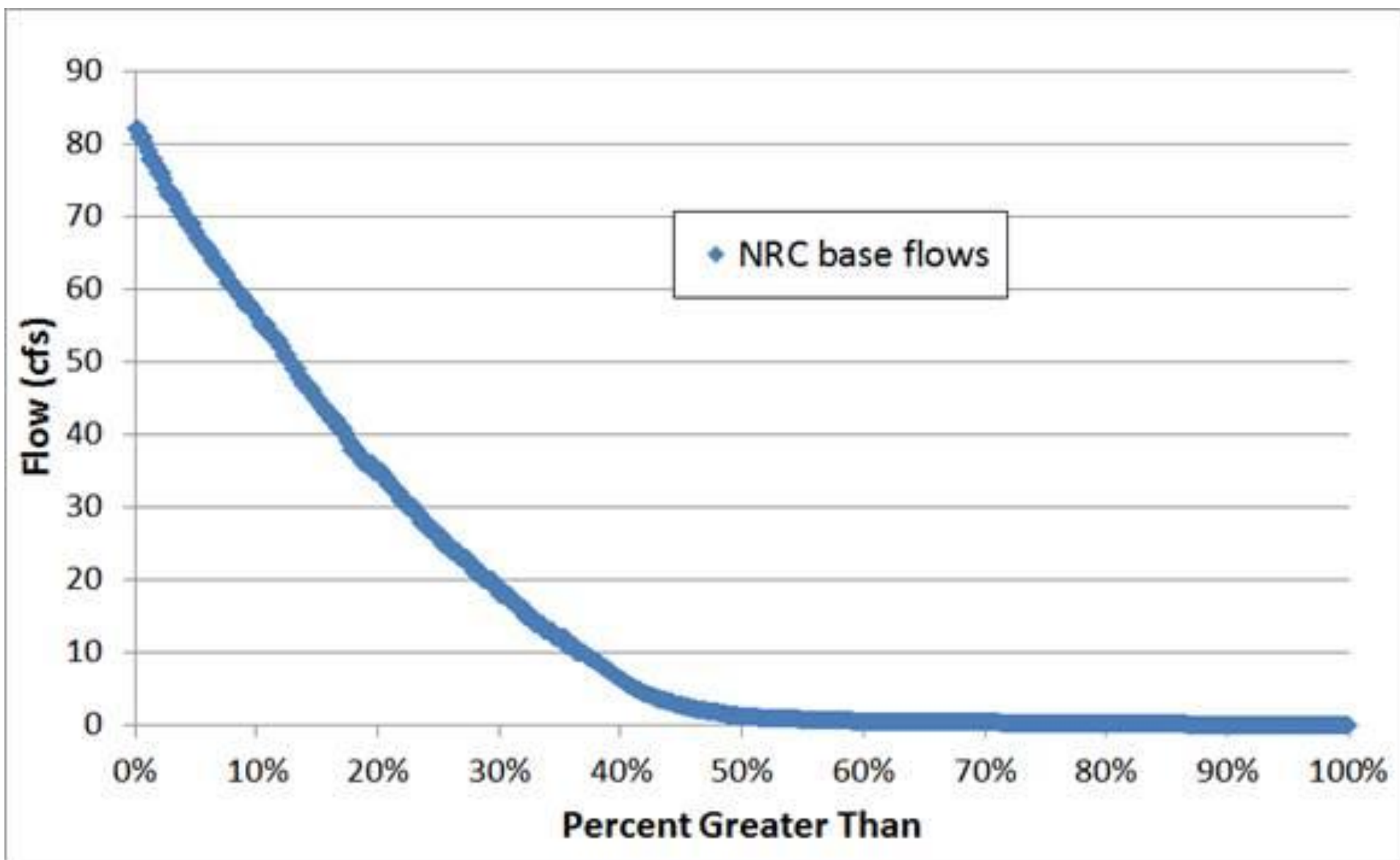
Non-zero flow event average duration: 72 days

Zero flow event average duration: 49 days

- ◆ Non-Zero Flow Events
- Zero Flow Events

Event Duration (days)





Overbank Flows	Qp: 16,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 82,742 to 240,835 (141,164) Regressed Duration is 10 to 35 (18)											
	Qp: 9,420 cfs with Average Frequency 1 per 2 years Regressed Volume is 45,490 to 132,346 (77,591) Regressed Duration is 9 to 32 (17)											
High Flow Pulses	Qp: 4,920 cfs with Average Frequency 1 per year Regressed Volume is 22,911 to 66,626 (39,070) Regressed Duration is 8 to 29 (15)											
	Qp: 116 cfs with Average Frequency 1 per season Regressed Volume is 454 to 1,519 (831) Regressed Duration is 5 to 17 (9)			Qp: 1,620 cfs with Average Frequency 1 per season Regressed Volume is 7,210 to 19,696 (11,917) Regressed Duration is 6 to 21 (12)			Qp: 117 cfs with Average Frequency 1 per season Regressed Volume is 445 to 1,034 (679)			Qp: 1,090 cfs with Average Frequency 1 per season Regressed Volume is 5,037 to 11,074 (8,055)		
	Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 39 to 129 (71) Regressed Duration is 3 to 12 (6)			Qp: 420 cfs with Average Frequency 2 per season Regressed Volume is 1,674 to 4,566 (2,765) Regressed Duration is 5 to 17 (9)			Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 1 to 2 (2)			Qp: 110 cfs with Average Frequency 2 per season Regressed Volume is 417 to 1,083 (672)		
Base Flows (cfs)	22 (21.5%)			18 (38.1%)			20 (27.8%)			12 (45.0%)		
	0.84 (34.7%)			4.4 (46.5%)			1.7 (36.8%)			1.5 (53.7%)		
	0.3 (46.6%)			0.6 (54.5%)			0.3 (42.3%)			0.3 (61.5%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1927 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

NRCotulla19271969

Overbank Flows	Qp: 11,400 cfs with Average Frequency 1 per 5 years Regressed Volume is 75,342 to 268,120 (142,129) Regressed Duration is 11 to 51 (24)											
	Qp: 6,660 cfs with Average Frequency 1 per 2 years Regressed Volume is 42,231 to 150,164 (79,634) Regressed Duration is 10 to 46 (21)											
High Flow Pulses	Qp: 2,970 cfs with Average Frequency 1 per year Regressed Volume is 17,696 to 62,855 (33,350) Regressed Duration is 9 to 40 (19)											
	Qp: 88 cfs with Average Frequency 1 per season Regressed Volume is 520 to 1,892 (992) Regressed Duration is 5 to 26 (12)				Qp: 545 cfs with Average Frequency 1 per season Regressed Volume is 3,125 to 9,708 (5,508) Regressed Duration is 8 to 26 (14)				Qp: 53 cfs with Average Frequency 1 per season Regressed Volume is 152 to 551 (289)		Qp: 137 cfs with Average Frequency 1 per season Regressed Volume is 580 to 1,885 (1,046)	
	Qp: 6 cfs with Average Frequency 2 per season Regressed Volume is 29 to 106 (56) Regressed Duration is 3 to 16 (7)				Qp: 36 cfs with Average Frequency 2 per season Regressed Volume is 150 to 466 (265) Regressed Duration is 4 to 15 (8)						Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 35 to 115 (64) Regressed	
Base Flows (cfs)	49 (39.2%)				35 (36.9%)				38 (34.7%)		56 (37.2%)	
	18 (48.4%)				18 (43.4%)				13 (40.8%)		35 (43.7%)	
	0.95 (58.5%)				2.5 (52.2%)				1.2 (46.3%)		14 (50.9%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRCotulla19702009

Overbank Flows	Qp: 24,500 cfs with Average Frequency 1 per 5 years Regressed Volume is 146,267 to 466,188 (261,128) Regressed Duration is 12 to 44 (23)													
	Qp: 10,700 cfs with Average Frequency 1 per 2 years Regressed Volume is 59,966 to 191,027 (107,029) Regressed Duration is 10 to 38 (20)													
High Flow Pulses	Qp: 4,610 cfs with Average Frequency 1 per year Regressed Volume is 24,227 to 77,142 (43,231) Regressed Duration is 9 to 33 (17)													
	Qp: 298 cfs with Average Frequency 1 per season Regressed Volume is 1,408 to 4,606 (2,547) Regressed Duration is 6 to 22 (12)				Qp: 881 cfs with Average Frequency 1 per season Regressed Volume is 4,285 to 12,219 (7,236) Regressed Duration is 6 to 22 (12)			Qp: 322 cfs with Average Frequency 1 per season Regressed Volume is 1,396 to 4,392 (2,476)		Qp: 836 cfs with Average Frequency 1 per season Regressed Volume is 3,877 to 10,884 (6,496)				
	Qp: 87 cfs with Average Frequency 2 per season Regressed Volume is 384 to 1,255 (694) Regressed Duration is 5 to 18 (9)				Qp: 279 cfs with Average Frequency 2 per season Regressed Volume is 1,180 to 3,362 (1,992) Regressed Duration is 5 to 18 (9)			Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 30 to 96 (54) Regressed		Qp: 218 cfs with Average Frequency 2 per season Regressed Volume is 851 to 2,386 (1,425)				
	Base Flows (cfs)				25 (45.0%)			14 (40.1%)		42 (47.9%)				
1.1 (55.8%)				3.3 (59.7%)			0.83 (56.1%)		12 (60.0%)					
0.2 (74.4%)				0.1 (75.2%)			0.17 (64.4%)		0.34 (77.3%)					
Subsistence Flows (cfs)				0 (100.0%)			0 (100.0%)		0 (100.0%)					
Nov			Dec			Jan			Feb			Mar		
Apr			May			Jun			Jul			Aug		
Sep			Oct			Winter			Spring			Summer		
Fall														

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1943 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRTilden19432009

Overbank Flows	Qp: 25,400 cfs with Average Frequency 1 per 5 years Regressed Volume is 129,911 to 388,270 (224,590) Regressed Duration is 10 to 37 (20)											
	Qp: 13,300 cfs with Average Frequency 1 per 2 years Regressed Volume is 65,613 to 195,939 (113,385) Regressed Duration is 9 to 33 (18)											
High Flow Pulses	Qp: 5,840 cfs with Average Frequency 1 per year Regressed Volume is 27,516 to 82,095 (47,528) Regressed Duration is 8 to 29 (15)											
	Qp: 276 cfs with Average Frequency 1 per season Regressed Volume is 1,033 to 3,212 (1,821) Regressed Duration is 6 to 19 (10)				Qp: 1,760 cfs with Average Frequency 1 per season Regressed Volume is 9,288 to 22,488 (14,452) Regressed Duration is 7 to 23 (13)				Qp: 340 cfs with Average Frequency 1 per season Regressed Volume is 1,411 to 3,993 (2,374)		Qp: 1,010 cfs with Average Frequency 1 per season Regressed Volume is 5,068 to 11,137 (8,102)	
	Qp: 108 cfs with Average Frequency 2 per season Regressed Volume is 402 to 1,250 (709) Regressed Duration is 5 to 16 (9)				Qp: 456 cfs with Average Frequency 2 per season Regressed Volume is 2,032 to 4,910 (3,159) Regressed Duration is 5 to 17 (10)				Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 26 to 74 (44)		Qp: 387 cfs with Average Frequency 2 per season Regressed Volume is 1,664 to 4,020 (2,587)	
	4 (32.5%)				12 (48.1%)				3.5 (40.3%)		28 (50.9%)	
Base Flows (cfs)	0.53 (51.7%)				0.28 (66.6%)				0.3 (54.1%)		6.6 (62.2%)	
	0.13 (69.5%)				0.1 (73.1%)				0.1 (60.0%)		0.2 (78.5%)	
	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1943 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

NRTilden19431969

Overbank Flows	Qp: 24,500 cfs with Average Frequency 1 per 5 years Regressed Volume is 169,442 to 562,724 (308,787) Regressed Duration is 13 to 51 (26)											
	Qp: 9,190 cfs with Average Frequency 1 per 2 years Regressed Volume is 57,965 to 192,282 (105,573) Regressed Duration is 11 to 42 (21)											
High Flow Pulses	Qp: 4,510 cfs with Average Frequency 1 per year Regressed Volume is 26,605 to 88,191 (48,439) Regressed Duration is 9 to 37 (19)											
	Qp: 304 cfs with Average Frequency 1 per season Regressed Volume is 1,816 to 5,810 (3,248) Regressed Duration is 7 to 25 (13)				Qp: 665 cfs with Average Frequency 1 per season Regressed Volume is 3,249 to 10,312 (5,788) Regressed Duration is 7 to 24 (12)				Qp: 294 cfs with Average Frequency 1 per season Regressed Volume is 1,340 to 4,374 (2,421)		Qp: 730 cfs with Average Frequency 1 per season Regressed Volume is 3,253 to 10,008 (5,705)	
	Qp: 70 cfs with Average Frequency 2 per season Regressed Volume is 362 to 1,156 (647) Regressed Duration is 5 to 19 (10)				Qp: 152 cfs with Average Frequency 2 per season Regressed Volume is 613 to 1,943 (1,092) Regressed Duration is 5 to 17 (9)				Qp: 9 cfs with Average Frequency 2 per season Regressed Volume is 28 to 93 (51) Regressed		Qp: 143 cfs with Average Frequency 2 per season Regressed Volume is 530 to 1,629 (929)	
									Regressed			
Base Flows (cfs)	53 (40.5%)				31 (45.1%)				22 (42.9%)		50 (47.2%)	
	2.6 (59.7%)				5.1 (58.8%)				1 (60.6%)		14 (60.0%)	
	0.25 (77.5%)				0.27 (73.5%)				0.26 (68.5%)		0.42 (77.3%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

NRTilden19702009

Overbank Flows	Qp: 28,300 cfs with Average Frequency 1 per 5 years Regressed Volume is 216,809 to 604,996 (362,172) Regressed Duration is 13 to 41 (23)											
	Qp: 16,400 cfs with Average Frequency 1 per 2 years Regressed Volume is 114,888 to 320,471 (191,881) Regressed Duration is 11 to 34 (19)											
High Flow Pulses	Qp: 9,130 cfs with Average Frequency 1 per year Regressed Volume is 58,099 to 162,009 (97,018) Regressed Duration is 9 to 28 (16)											
	Qp: 2,050 cfs with Average Frequency 1 per season Regressed Volume is 9,373 to 26,796 (15,848) Regressed Duration is 6 to 18 (10)				Qp: 4,090 cfs with Average Frequency 1 per season Regressed Volume is 23,932 to 64,594 (39,317) Regressed Duration is 7 to 22 (12)			Qp: 1,100 cfs with Average Frequency 1 per season Regressed Volume is 4,857 to 12,885 to		Qp: 2,420 cfs with Average Frequency 1 per season Regressed Volume is 12,885 to 7,922 (4,863)		
	Qp: 717 cfs with Average Frequency 2 per season Regressed Volume is 2,963 to 8,463 (5,008) Regressed Duration is 4 to 13 (8)				Qp: 1,660 cfs with Average Frequency 2 per season Regressed Volume is 8,227 to 22,190 (13,511) Regressed Duration is 5 to 16 (9)			Qp: 276 cfs with Average Frequency 2 per season Regressed Volume is 897 to 2,520 (1,504)		Qp: 706 cfs with Average Frequency 2 per season Regressed Volume is 2,985 to 7,922 (4,863)		
	104 (38.9%)				83 (56.9%)			57 (51.4%)		68 (59.0%)		
Base Flows (cfs)	38 (61.3%)				36 (74.0%)			30 (65.9%)		37 (72.2%)		
	12 (81.9%)				10 (88.0%)			6.3 (78.6%)		9 (85.2%)		
	0.1 (98.6%)				0.1 (98.3%)			0.1 (94.3%)		0.2 (96.7%)		
Subsistence Flows (cfs)	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1916 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 35,000 cfs with Average Frequency 1 per 5 years Regressed Volume is 270,992 to 680,919 (429,562) Regressed Duration is 13 to 39 (23)											
	Qp: 18,800 cfs with Average Frequency 1 per 2 years Regressed Volume is 131,644 to 330,624 (208,625) Regressed Duration is 11 to 32 (19)											
High Flow Pulses	Qp: 11,000 cfs with Average Frequency 1 per year Regressed Volume is 70,629 to 177,323 (111,911) Regressed Duration is 9 to 27 (16)											
	Qp: 2,190 cfs with Average Frequency 1 per season Regressed Volume is 9,749 to 23,711 (15,204) Regressed Duration is 6 to 16 (10)				Qp: 5,380 cfs with Average Frequency 1 per season Regressed Volume is 33,021 to 80,168 (51,451) Regressed Duration is 7 to 22 (12)			Qp: 1,660 cfs with Average Frequency 1 per season Regressed Volume is 7,745 to 16,450 (12,127)		Qp: 3,010 cfs with Average Frequency 1 per season Regressed Volume is 16,450 to 32,900 (24,675)		
	Qp: 805 cfs with Average Frequency 2 per season Regressed Volume is 3,305 to 8,030 (5,151) Regressed Duration is 5 to 12 (7)				Qp: 2,530 cfs with Average Frequency 2 per season Regressed Volume is 13,457 to 32,646 (20,960) Regressed Duration is 6 to 17 (10)			Qp: 383 cfs with Average Frequency 2 per season Regressed Volume is 1,301 to 3,477 (2,127)		Qp: 1,050 cfs with Average Frequency 2 per season Regressed Volume is 4,707 to 11,700 (8,154)		
Base Flows (cfs)	66 (40.0%)				52 (64.2%)			39 (53.9%)		44 (64.5%)		
	20 (63.5%)				18 (80.1%)			8.2 (70.4%)		12 (79.5%)		
	9 (81.0%)				5.5 (89.1%)			3.1 (79.3%)		4 (86.7%)		
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)			0 (100.0%)		0 (100.0%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1916 to 12/31/1981.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 17,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 156,263 to 534,090 (288,892) Regressed Duration is 15 to 53 (28)											
	Qp: 8,780 cfs with Average Frequency 1 per 2 years Regressed Volume is 68,434 to 233,212 (126,331) Regressed Duration is 12 to 41 (22)											
High Flow Pulses	Qp: 5,420 cfs with Average Frequency 1 per year Regressed Volume is 38,588 to 131,284 (71,176) Regressed Duration is 10 to 34 (18)											
	Qp: 1,610 cfs with Average Frequency 1 per season Regressed Volume is 8,527 to 32,084 (16,540) Regressed Duration is 6 to 23 (12)				Qp: 1,740 cfs with Average Frequency 1 per season Regressed Volume is 10,291 to 34,272 (18,780) Regressed Duration is 7 to 24 (12)				Qp: 531 cfs with Average Frequency 1 per season Regressed Volume is 2,351 to 7,319 (4,148)		Qp: 925 cfs with Average Frequency 1 per season Regressed Volume is 4,732 to 15,213 (8,484)	
	Qp: 470 cfs with Average Frequency 2 per season Regressed Volume is 2,142 to 8,029 (4,147) Regressed Duration is 4 to 16 (8)				Qp: 534 cfs with Average Frequency 2 per season Regressed Volume is 2,472 to 8,202 (4,503) Regressed Duration is 4 to 15 (8)				Qp: 61 cfs with Average Frequency 2 per season Regressed Volume is 156 to 494 (278)		Qp: 258 cfs with Average Frequency 2 per season Regressed Volume is 1,010 to 3,250 (1,812)	
Base Flows (cfs)	162 (39.4%)				127 (47.2%)				79 (50.8%)		99 (51.1%)	
	83 (59.4%)				55 (66.1%)				40 (66.4%)		50 (68.9%)	
	42 (78.2%)				35 (82.5%)				32 (82.9%)		39 (82.0%)	
Subsistence Flows (cfs)	9.5 (97.5%)				5.1 (97.2%)				3.1 (95.4%)		1.5 (97.4%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1982 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 22,700 cfs with Average Frequency 1 per 5 years Regressed Volume is 220,578 to 726,574 (400,333) Regressed Duration is 15 to 51 (28)											
	Qp: 12,900 cfs with Average Frequency 1 per 2 years Regressed Volume is 107,946 to 355,249 (195,825) Regressed Duration is 12 to 40 (21)											
High Flow Pulses	Qp: 7,690 cfs with Average Frequency 1 per year Regressed Volume is 56,116 to 184,549 (101,766) Regressed Duration is 9 to 31 (17)											
	Qp: 1,120 cfs with Average Frequency 1 per season Regressed Volume is 4,466 to 14,165 (7,954) Regressed Duration is 4 to 12 (7)				Qp: 2,540 cfs with Average Frequency 1 per season Regressed Volume is 15,558 to 49,395 (27,721) Regressed Duration is 6 to 19 (10)				Qp: 371 cfs with Average Frequency 1 per season Regressed Volume is 1,525 to 4,967 (2,752)		Qp: 1,550 cfs with Average Frequency 1 per season Regressed Volume is 7,571 to 19,478 (13,454)	
	Qp: 591 cfs with Average Frequency 2 per season Regressed Volume is 1,979 to 6,271 (3,523) Regressed Duration is 3 to 9 (5)				Qp: 422 cfs with Average Frequency 2 per season Regressed Volume is 1,605 to 5,087 (2,857) Regressed Duration is 3 to 9 (5)				Qp: 150 cfs with Average Frequency 2 per season Regressed Volume is 506 to 1,650 (913)		Qp: 239 cfs with Average Frequency 2 per season Regressed Volume is 819 to 2,670 (1,478)	
Base Flows (cfs)	122 (39.9%)				148 (47.9%)				170 (44.1%)		142 (50.2%)	
	96 (58.8%)				119 (64.8%)				136 (62.5%)		114 (66.0%)	
	70 (76.2%)				89 (81.8%)				101 (80.6%)		88 (82.8%)	
Subsistence Flows (cfs)	36 (95.1%)				36 (98.2%)				39 (98.9%)		37 (98.1%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1940 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 29,500 cfs with Average Frequency 1 per 5 years Regressed Volume is 317,174 to 942,041 (546,618) Regressed Duration is 17 to 56 (31)											
	Qp: 18,400 cfs with Average Frequency 1 per 2 years Regressed Volume is 173,108 to 513,651 (298,190) Regressed Duration is 14 to 44 (25)											
High Flow Pulses	Qp: 10,800 cfs with Average Frequency 1 per year Regressed Volume is 87,389 to 259,053 (150,460) Regressed Duration is 11 to 34 (19)											
	Qp: 1,360 cfs with Average Frequency 1 per season Regressed Volume is 5,745 to 16,465 (9,726) Regressed Duration is 4 to 13 (7)				Qp: 4,080 cfs with Average Frequency 1 per season Regressed Volume is 30,074 to 82,215 (49,725) Regressed Duration is 7 to 22 (13)			Qp: 492 cfs with Average Frequency 1 per season Regressed Volume is 2,097 to 6,262 (3,624)			Qp: 2,280 cfs with Average Frequency 1 per season Regressed Volume is 11,442 to 33,624 (22,718)	
	Qp: 699 cfs with Average Frequency 2 per season Regressed Volume is 2,408 to 6,891 (4,074) Regressed Duration is 3 to 9 (5)				Qp: 742 cfs with Average Frequency 2 per season Regressed Volume is 3,268 to 8,906 (5,395) Regressed Duration is 3 to 10 (6)			Qp: 147 cfs with Average Frequency 2 per season Regressed Volume is 496 to 1,485 (858)			Qp: 439 cfs with Average Frequency 2 per season Regressed Volume is 1,589 to 4,648 (2,718)	
Base Flows (cfs)	102 (41.5%)				132 (49.5%)			143 (45.8%)			118 (55.6%)	
	80 (60.6%)				100 (67.0%)			112 (64.2%)			99 (70.6%)	
	56 (75.8%)				70 (83.4%)			79 (82.4%)			74 (85.0%)	
Subsistence Flows (cfs)	32 (94.8%)				33 (98.1%)			38 (98.7%)			31 (98.4%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1940 to 12/31/1981.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 11,800 cfs with Average Frequency 1 per 5 years Regressed Volume is 95,911 to 348,567 (182,843) Regressed Duration is 11 to 40 (21)											
	Qp: 7,530 cfs with Average Frequency 1 per 2 years Regressed Volume is 55,295 to 200,423 (105,273) Regressed Duration is 9 to 33 (17)											
High Flow Pulses	Qp: 4,970 cfs with Average Frequency 1 per year Regressed Volume is 33,219 to 120,150 (63,176) Regressed Duration is 8 to 28 (15)											
	Qp: 908 cfs with Average Frequency 1 per season Regressed Volume is 3,470 to 11,851 (6,413) Regressed Duration is 3 to 12 (6)				Qp: 1,070 cfs with Average Frequency 1 per season Regressed Volume is 5,192 to 19,174 (9,977) Regressed Duration is 4 to 15 (8)			Qp: 280 cfs with Average Frequency 1 per season Regressed Volume is 1,112 to 4,087 (2,132)		Qp: 477 cfs with Average Frequency 1 per season Regressed Volume is 2,182 to 7,837 (4,135)		
	Qp: 484 cfs with Average Frequency 2 per season Regressed Volume is 1,667 to 5,676 (3,076) Regressed Duration is 3 to 9 (5)				Qp: 281 cfs with Average Frequency 2 per season Regressed Volume is 1,076 to 3,967 (2,066) Regressed Duration is 2 to 9 (5)			Qp: 163 cfs with Average Frequency 2 per season Regressed Volume is 551 to 2,037 (1,060)		Qp: 184 cfs with Average Frequency 2 per season Regressed Volume is 663 to 2,388 (1,259)		
Base Flows (cfs)	140 (38.7%)				164 (46.3%)			191 (44.7%)		164 (44.2%)		
	122 (55.2%)				136 (63.8%)			166 (63.0%)		139 (60.2%)		
	102 (71.7%)				115 (81.0%)			137 (80.3%)		113 (77.3%)		
Subsistence Flows (cfs)	60 (94.2%)				68 (99.0%)			62 (99.4%)		57 (97.8%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1982 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

High Flow Pulses

Base Flows (cfs)	33 (21.0%)				31 (21.5%)			32 (20.3%)			35 (20.5%)	
	25 (41.9%)				20 (43.0%)			18 (40.7%)			22 (40.9%)	
	11 (62.9%)				9.9 (64.5%)			11 (61.0%)			11 (61.3%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)			0 (100.0%)			0 (100.0%)	
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter				Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1930 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

High Flow Pulses

Base Flows (cfs)	25 (17.3%)				22 (18.3%)			19 (17.7%)			22 (17.3%)	
	13 (34.6%)				12 (36.6%)			14 (35.4%)			14 (34.7%)	
	6.7 (51.9%)				6.9 (54.9%)			6.4 (53.0%)			8.2 (52.0%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)			0 (100.0%)			0 (100.0%)	
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter				Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1930 to 12/31/1969.
 2. Volumes are in acre-feet and durations are in days.

High Flow Pulses

Base Flows (cfs)	46 (23.4%)				43 (22.6%)			41 (21.2%)			45 (22.4%)	
	31 (46.9%)				28 (45.1%)			30 (42.5%)			31 (44.8%)	
	24 (70.3%)				19 (67.7%)			16 (63.7%)			21 (67.3%)	
Subsistence Flows (cfs)	4.2 (96.9%)				3.7 (95.2%)			0 (100.0%)			0 (100.0%)	
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter				Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1970 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 8,860 cfs with Average Frequency 1 per 5 years Regressed Volume is 33,290 to 185,554 (78,594) Regressed Duration is 16 to 104 (41)											
	Qp: 4,870 cfs with Average Frequency 1 per 2 years Regressed Volume is 17,621 to 97,965 (41,549) Regressed Duration is 12 to 75 (30)											
High Flow Pulses	Qp: 1,780 cfs with Average Frequency 1 per year Regressed Volume is 6,042 to 33,480 (14,223) Regressed Duration is 7 to 44 (18)											
	Qp: 92 cfs with Average Frequency 1 per season Regressed Volume is 262 to 2,192 (757) Regressed Duration is 2 to 13 (5)			Qp: 296 cfs with Average Frequency 1 per season Regressed Volume is 1,017 to 3,519 (1,892) Regressed Duration is 3 to 12 (6)			Qp: 237 cfs with Average Frequency 1 per season Regressed Volume is 626 to 2,939 (1,356) Regressed Duration is 2 to 12 (5)			Qp: 79 cfs with Average Frequency 1 per season Regressed Volume is 228 to 2,052 (684)		
				Qp: 116 cfs with Average Frequency 2 per season Regressed Volume is 371 to 1,284 (690) Regressed Duration is 2 to 8 (4)								
Base Flows (cfs)	83 (43.5%)			81 (45.2%)			73 (41.1%)			81 (48.5%)		
	63 (62.9%)			59 (62.4%)			47 (56.5%)			55 (64.2%)		
	46 (80.2%)			40 (80.3%)			31 (70.8%)			34 (78.6%)		
Subsistence Flows (cfs)	11 (98.5%)			9.4 (98.0%)			9.6 (92.5%)			9.5 (96.3%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1931 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 8,050 cfs with Average Frequency 1 per 5 years Regressed Volume is 29,182 to 135,150 (62,801) Regressed Duration is 15 to 76 (33)												
	Qp: 3,510 cfs with Average Frequency 1 per 2 years Regressed Volume is 11,941 to 54,917 (25,608) Regressed Duration is 9 to 49 (21)												
High Flow Pulses	Qp: 1,010 cfs with Average Frequency 1 per year Regressed Volume is 3,118 to 14,240 (6,664) Regressed Duration is 5 to 25 (11)												
	Qp: 92 cfs with Average Frequency 1 per season Regressed Volume is 228 to 1,609 (606) Regressed Duration is 1 to 10 (4)				Qp: 260 cfs with Average Frequency 1 per season Regressed Volume is 821 to 2,323 (1,381) Regressed Duration is 3 to 9 (5)				Qp: 237 cfs with Average Frequency 1 per season Regressed Volume is 578 to 2,500 (1,202) Regressed Duration is 2 to 10 (5)				
					Qp: 118 cfs with Average Frequency 2 per season Regressed Volume is 354 to 1,002 (595) Regressed Duration is 2 to 6 (3)								
Base Flows (cfs)	73 (37.5%)			78 (38.3%)			55 (36.6%)			66 (43.0%)			
	52 (58.6%)			55 (58.4%)			36 (53.8%)			41 (59.4%)			
	34 (78.0%)			35 (77.1%)			20 (69.1%)			23 (75.9%)			
Subsistence Flows (cfs)	7.9 (98.5%)			7.9 (97.4%)			6.8 (92.4%)			4 (95.6%)			
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Winter				Spring				Summer				Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1931 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 9,270 cfs with Average Frequency 1 per 5 years Regressed Volume is 33,857 to 217,010 (85,716) Regressed Duration is 17 to 124 (45)											
	Qp: 6,070 cfs with Average Frequency 1 per 2 years Regressed Volume is 22,014 to 140,589 (55,631) Regressed Duration is 13 to 100 (37)											
High Flow Pulses	Qp: 2,640 cfs with Average Frequency 1 per year Regressed Volume is 9,436 to 59,918 (23,777) Regressed Duration is 9 to 66 (24)											
	Qp: 86 cfs with Average Frequency 1 per season Regressed Volume is 351 to 3,741 (1,145) Regressed Duration is 2 to 21 (7)			Qp: 368 cfs with Average Frequency 1 per season Regressed Volume is 1,482 to 5,702 (2,907) Regressed Duration is 4 to 17 (8)			Qp: 239 cfs with Average Frequency 1 per season Regressed Volume is 678 to 3,425 (1,523) Regressed Duration is 2 to 15 (6)			Qp: 122 cfs with Average Frequency 1 per season Regressed Volume is 422 to 4,291 (1,346)		
				Qp: 115 cfs with Average Frequency 2 per season Regressed Volume is 437 to 1,688 (859) Regressed Duration is 2 to 10 (5)			Qp: 46 cfs with Average Frequency 2 per season Regressed Volume is 116 to 594 (262) Regressed Duration is 1 to 7 (3)					
Base Flows (cfs)	89 (48.9%)			89 (50.5%)			81 (46.2%)			95 (55.0%)		
	71 (67.9%)			65 (66.0%)			61 (59.1%)			67 (70.1%)		
	57 (84.9%)			47 (81.1%)			46 (72.4%)			50 (84.8%)		
Subsistence Flows (cfs)	28 (99.7%)			25 (98.1%)			18 (92.4%)			25 (98.2%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter			Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 2,970 cfs with Average Frequency 1 per 5 years Regressed Volume is 13,886 to 53,187 (27,176) Regressed Duration is 21 to 82 (41)											
	Qp: 1,700 cfs with Average Frequency 1 per 2 years Regressed Volume is 7,812 to 29,863 (15,274) Regressed Duration is 16 to 64 (32)											
High Flow Pulses	Qp: 538 cfs with Average Frequency 1 per year Regressed Volume is 2,385 to 9,087 (4,655) Regressed Duration is 10 to 38 (19)											
	Qp: 32 cfs with Average Frequency 1 per season Regressed Volume is 144 to 650 (306) Regressed Duration is 3 to 13 (7)			Qp: 117 cfs with Average Frequency 1 per season Regressed Volume is 467 to 1,473 (829) Regressed Duration is 4 to 16 (8)			Qp: 81 cfs with Average Frequency 1 per season Regressed Volume is 330 to 1,100 (602) Regressed Duration is 4 to 15 (8)			Qp: 35 cfs with Average Frequency 1 per season Regressed Volume is 151 to 617 (305)		
	Qp: 30 cfs with Average Frequency 2 per season Regressed Volume is 118 to 372 (210) Regressed Duration is 2 to 9 (5)			Qp: 12 cfs with Average Frequency 2 per season Regressed Volume is 48 to 159 (87) Regressed Duration is 2 to 7 (4)								
Base Flows (cfs)	17 (42.9%)			16 (47.5%)			14 (43.9%)			18 (50.6%)		
	12 (62.0%)			9.3 (63.5%)			7.9 (58.1%)			11 (67.8%)		
	7.2 (80.4%)			5 (80.0%)			4.1 (71.2%)			6.5 (80.1%)		
Subsistence Flows (cfs)	0.65 (99.2%)			1.1 (97.7%)			0.6 (92.0%)			0.6 (97.2%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1953 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 16,400 cfs with Average Frequency 1 per 5 years Regressed Volume is 51,477 to 180,512 (96,396) Regressed Duration is 8 to 36 (17)											
	Qp: 7,200 cfs with Average Frequency 1 per 2 years Regressed Volume is 22,777 to 79,827 (42,640) Regressed Duration is 7 to 31 (15)											
High Flow Pulses	Qp: 4,010 cfs with Average Frequency 1 per year Regressed Volume is 12,756 to 44,691 (23,876) Regressed Duration is 7 to 29 (14)											
	Qp: 87 cfs with Average Frequency 1 per season Regressed Volume is 350 to 1,446 (711) Regressed Duration is 4 to 20 (9)				Qp: 902 cfs with Average Frequency 1 per season Regressed Volume is 3,061 to 7,936 (4,928) Regressed Duration is 5 to 17 (9)				Qp: 58 cfs with Average Frequency 1 per season Regressed Volume is 177 to 513 (301)		Qp: 348 cfs with Average Frequency 1 per season Regressed Volume is 1,072 to 4,340 (2,157)	
	Qp: 12 cfs with Average Frequency 2 per season Regressed Volume is 47 to 193 (95) Regressed Duration is 3 to 15 (7)				Qp: 209 cfs with Average Frequency 2 per season Regressed Volume is 699 to 1,812 (1,126) Regressed Duration is 4 to 14 (7)						Qp: 7 cfs with Average Frequency 2 per season Regressed Volume is 24 to 97 (48) Regressed	
Base Flows (cfs)	26 (34.8%)				22 (38.3%)				16 (30.7%)		24 (34.9%)	
	17 (43.9%)				11 (49.2%)				6.8 (38.0%)		12 (43.2%)	
	7.9 (53.1%)				2.8 (59.7%)				2.2 (46.2%)		5 (51.1%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1916 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

FRDerby19162009

Overbank Flows	Qp: 15,400 cfs with Average Frequency 1 per 5 years Regressed Volume is 39,215 to 108,331 (65,178) Regressed Duration is 7 to 24 (13)											
	Qp: 7,200 cfs with Average Frequency 1 per 2 years Regressed Volume is 18,903 to 52,186 (31,409) Regressed Duration is 6 to 22 (12)											
High Flow Pulses	Qp: 4,010 cfs with Average Frequency 1 per year Regressed Volume is 10,779 to 29,743 (17,905) Regressed Duration is 6 to 20 (11)											
	Qp: 114 cfs with Average Frequency 1 per season Regressed Volume is 394 to 1,373 (735) Regressed Duration is 4 to 17 (9)				Qp: 937 cfs with Average Frequency 1 per season Regressed Volume is 2,910 to 6,051 (4,196) Regressed Duration is 5 to 14 (8)				Qp: 54 cfs with Average Frequency 1 per season Regressed Volume is 156 to 331 (227)		Qp: 364 cfs with Average Frequency 1 per season Regressed Volume is 1,122 to 2,956 (1,821)	
	Qp: 9 cfs with Average Frequency 2 per season Regressed Volume is 36 to 124 (67) Regressed Duration is 3 to 13 (6)				Qp: 236 cfs with Average Frequency 2 per season Regressed Volume is 750 to 1,559 (1,082) Regressed Duration is 4 to 12 (7)						Qp: 10 cfs with Average Frequency 2 per season Regressed Volume is 34 to 91 (56) Regressed	
Base Flows (cfs)	20 (19.5%)				15 (31.3%)				11 (20.6%)		11 (27.1%)	
	13 (27.4%)				7.1 (40.9%)				4.1 (28.3%)		4.6 (34.3%)	
	5.3 (37.1%)				1.4 (52.2%)				1.4 (35.7%)		1 (42.4%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1916 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

FRDerby19161969

Overbank Flows	Qp: 21,100 cfs with Average Frequency 1 per 5 years Regressed Volume is 96,981 to 390,697 (194,654) Regressed Duration is 11 to 62 (27)											
	Qp: 7,370 cfs with Average Frequency 1 per 2 years Regressed Volume is 32,921 to 132,352 (66,009) Regressed Duration is 9 to 50 (22)											
High Flow Pulses	Qp: 4,100 cfs with Average Frequency 1 per year Regressed Volume is 18,023 to 72,390 (36,121) Regressed Duration is 8 to 45 (19)											
	Qp: 76 cfs with Average Frequency 1 per season Regressed Volume is 388 to 1,737 (821) Regressed Duration is 4 to 24 (10)				Qp: 878 cfs with Average Frequency 1 per season Regressed Volume is 3,856 to 10,963 (6,502) Regressed Duration is 5 to 23 (11)				Qp: 58 cfs with Average Frequency 1 per season Regressed Volume is 242 to 770 (432)		Qp: 287 cfs with Average Frequency 1 per season Regressed Volume is 1,049 to 5,801 (2,467)	
	Qp: 16 cfs with Average Frequency 2 per season Regressed Volume is 70 to 311 (147) Regressed Duration is 3 to 16 (7)				Qp: 170 cfs with Average Frequency 2 per season Regressed Volume is 685 to 1,945 (1,155) Regressed Duration is 4 to 17 (8)						Qp: 0 cfs with Average Frequency 2 per season Regressed Volume is 0 to 2 (1) Regressed	
Base Flows (cfs)	32 (55.3%)				28 (51.7%)				28 (44.1%)		28 (49.8%)	
	23 (65.9%)				16 (62.1%)				13 (51.9%)		18 (58.5%)	
	13 (76.8%)				7.5 (71.0%)				4.3 (60.3%)		10 (68.5%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

FRDerby19702009

Overbank Flows	Qp: 12,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 58,521 to 167,583 (99,031) Regressed Duration is 9 to 34 (18)											
	Qp: 7,320 cfs with Average Frequency 1 per 2 years Regressed Volume is 32,879 to 94,115 (55,627) Regressed Duration is 8 to 31 (16)											
High Flow Pulses	Qp: 4,140 cfs with Average Frequency 1 per year Regressed Volume is 17,953 to 51,369 (30,368) Regressed Duration is 7 to 27 (14)											
	Qp: 385 cfs with Average Frequency 1 per season Regressed Volume is 1,502 to 5,322 (2,827) Regressed Duration is 5 to 20 (10)				Qp: 1,489 cfs with Average Frequency 1 per season Regressed Volume is 6,323 to 15,730 (9,973) Regressed Duration is 5 to 18 (10)				Qp: 271 cfs with Average Frequency 1 per season Regressed Volume is 981 to 2,440 (1,547)		Qp: 961 cfs with Average Frequency 1 per season Regressed Volume is 3,719 to 10,368 (6,209)	
	Qp: 86 cfs with Average Frequency 2 per season Regressed Volume is 302 to 1,070 (569) Regressed Duration is 3 to 13 (7)				Qp: 455 cfs with Average Frequency 2 per season Regressed Volume is 1,797 to 4,468 (2,834) Regressed Duration is 4 to 14 (8)				Qp: 36 cfs with Average Frequency 2 per season Regressed Volume is 111 to 276 (175)		Qp: 117 cfs with Average Frequency 2 per season Regressed Volume is 388 to 1,079 (647)	
	29 (41.9%)				25 (49.9%)				14 (42.5%)		21 (48.2%)	
Base Flows (cfs)	12 (60.6%)				7.3 (68.6%)				2 (61.5%)		3.2 (67.7%)	
	1.1 (81.7%)				1.1 (83.1%)				0.26 (71.4%)		0.62 (79.9%)	
	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1933 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

FRTilden19332009

Overbank Flows	Qp: 12,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 51,962 to 116,162 (77,692) Regressed Duration is 8 to 24 (14)											
	Qp: 7,544 cfs with Average Frequency 1 per 2 years Regressed Volume is 30,591 to 68,350 (45,726) Regressed Duration is 7 to 22 (12)											
High Flow Pulses	Qp: 4,845 cfs with Average Frequency 1 per year Regressed Volume is 19,360 to 43,239 (28,933) Regressed Duration is 6 to 20 (11)											
	Qp: 500 cfs with Average Frequency 1 per season Regressed Volume is 1,903 to 4,433 (2,904) Regressed Duration is 5 to 15 (9)				Qp: 1,954 cfs with Average Frequency 1 per season Regressed Volume is 7,642 to 16,286 (11,156) Regressed Duration is 5 to 15 (9)				Qp: 271 cfs with Average Frequency 1 per season Regressed Volume is 914 to 2,020 (1,359)		Qp: 1,362 cfs with Average Frequency 1 per season Regressed Volume is 5,290 to 11,366 (8,338)	
	Qp: 157 cfs with Average Frequency 2 per season Regressed Volume is 581 to 1,352 (887) Regressed Duration is 4 to 12 (7)				Qp: 686 cfs with Average Frequency 2 per season Regressed Volume is 2,606 to 5,547 (3,802) Regressed Duration is 4 to 13 (7)				Qp: 60 cfs with Average Frequency 2 per season Regressed Volume is 187 to 414 (278)		Qp: 173 cfs with Average Frequency 2 per season Regressed Volume is 603 to 1,366 (907)	
	17 (34.6%)				14 (51.0%)				7.7 (39.2%)		5.9 (51.0%)	
Base Flows (cfs)	5.5 (57.0%)				3.4 (70.8%)				1.5 (54.8%)		1.8 (65.9%)	
	0.62 (77.3%)				0.83 (81.3%)				0.4 (63.0%)		0.46 (72.4%)	
	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1933 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

FRTilden19331969

Overbank Flows	Qp: 14,700 cfs with Average Frequency 1 per 5 years Regressed Volume is 85,469 to 298,099 (159,619) Regressed Duration is 12 to 55 (26)											
High Flow Pulses	Qp: 7,300 cfs with Average Frequency 1 per 2 years Regressed Volume is 39,742 to 138,413 (74,168) Regressed Duration is 10 to 45 (21)											
	Qp: 3,880 cfs with Average Frequency 1 per year Regressed Volume is 19,903 to 69,242 (37,124) Regressed Duration is 8 to 38 (18)											
	Qp: 219 cfs with Average Frequency 1 per season Regressed Volume is 967 to 4,692 (2,130) Regressed Duration is 5 to 24 (11)			Qp: 1,124 cfs with Average Frequency 1 per season Regressed Volume is 5,653 to 15,466 (9,351) Regressed Duration is 6 to 22 (11)			Qp: 235 cfs with Average Frequency 1 per season Regressed Volume is 944 to 2,506 (1,539)			Qp: 544 cfs with Average Frequency 1 per season Regressed Volume is 2,119 to 7,134 (3,888)		
	Qp: 44 cfs with Average Frequency 2 per season Regressed Volume is 155 to 752 (342) Regressed Duration is 3 to 14 (6)			Qp: 278 cfs with Average Frequency 2 per season Regressed Volume is 1,195 to 3,262 (1,974) Regressed Duration is 4 to 15 (8)			Qp: 6 cfs with Average Frequency 2 per season Regressed Volume is 18 to 48 (29) Regressed			Qp: 76 cfs with Average Frequency 2 per season Regressed Volume is 245 to 823 (449)		
Base Flows (cfs)	40 (50.5%)			35 (51.6%)			32 (44.7%)			28 (52.3%)		
	23 (66.3%)			15 (67.6%)			5.9 (60.6%)			11 (68.2%)		
	6.7 (82.7%)			2.9 (82.4%)			0.57 (74.3%)			0.94 (86.1%)		
Subsistence Flows (cfs)	0.02 (99.8%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

FRTilden19702009

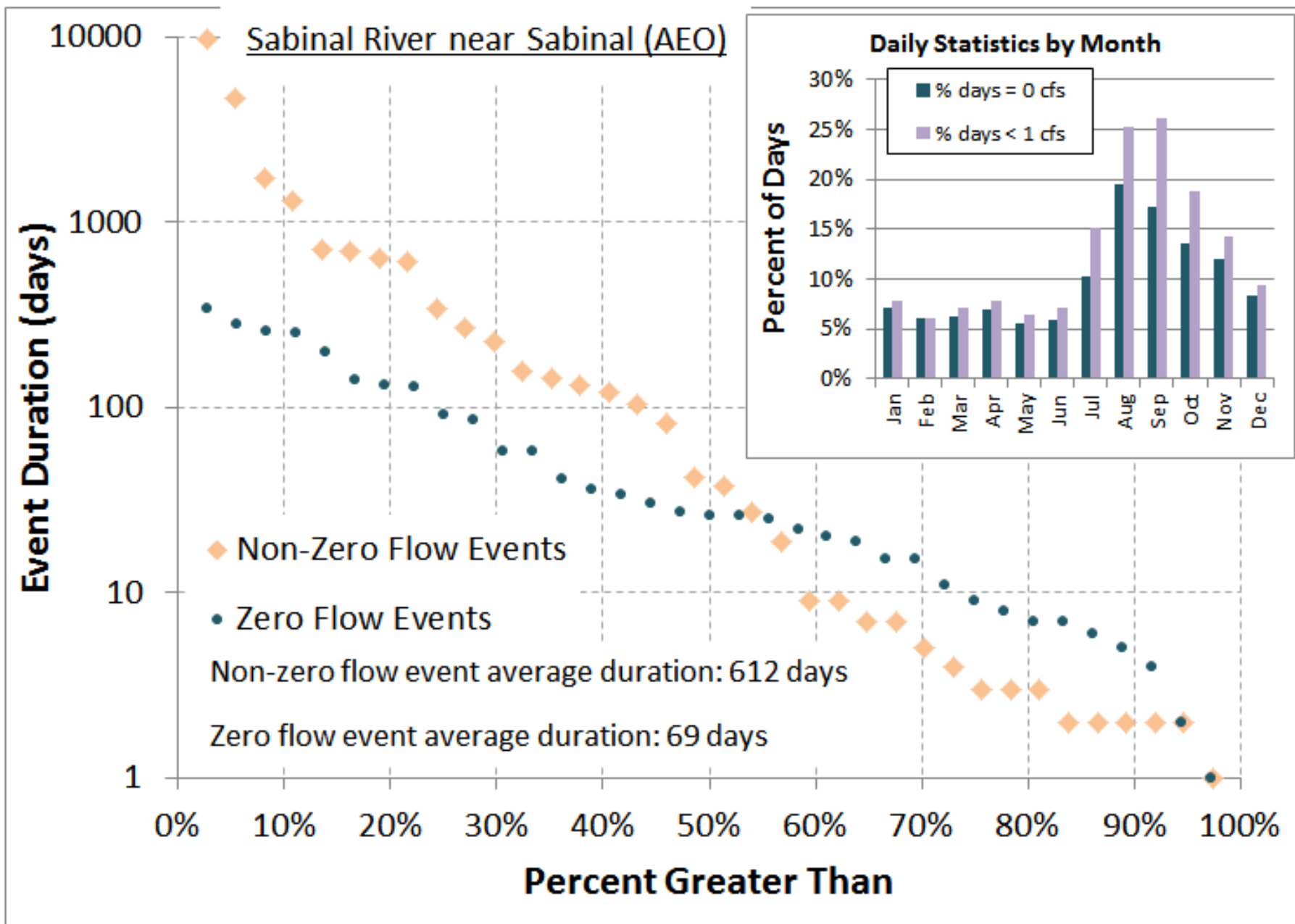
Overbank Flows	Qp: 5,200 cfs with Average Frequency 1 per 5 years Regressed Volume is 21,350 to 100,135 (46,237) Regressed Duration is 15 to 75 (33)											
	Qp: 2,350 cfs with Average Frequency 1 per 2 years Regressed Volume is 9,249 to 43,253 (20,001) Regressed Duration is 11 to 54 (24)											
High Flow Pulses	Qp: 1,020 cfs with Average Frequency 1 per year Regressed Volume is 3,838 to 17,909 (8,291) Regressed Duration is 7 to 38 (17)											
	Qp: 62 cfs with Average Frequency 1 per season Regressed Volume is 232 to 1,532 (596) Regressed Duration is 3 to 17 (7)			Qp: 177 cfs with Average Frequency 1 per season Regressed Volume is 644 to 2,207 (1,192) Regressed Duration is 4 to 15 (7)			Qp: 100 cfs with Average Frequency 1 per season Regressed Volume is 286 to 1,178 (581) Regressed Duration is 2 to 12 (5)			Qp: 53 cfs with Average Frequency 1 per season Regressed Volume is 177 to 840 (386)		
				Qp: 64 cfs with Average Frequency 2 per season Regressed Volume is 219 to 750 (405) Regressed Duration is 2 to 10 (5)			Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 31 to 127 (62) Regressed Duration is 1 to 5 (2)					
Base Flows (cfs)	35 (41.7%)			35 (46.4%)			29 (39.9%)			34 (44.2%)		
	22 (59.2%)			20 (63.3%)			13 (55.6%)			20 (59.4%)		
	11 (77.8%)			7.7 (79.9%)			3.2 (70.4%)			9.9 (73.7%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter			Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1943 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

SRSabinal19432009



Overbank Flows	Qp: 2,710 cfs with Average Frequency 1 per 5 years Regressed Volume is 8,879 to 38,560 (18,503) Regressed Duration is 10 to 44 (20)											
	Qp: 1,520 cfs with Average Frequency 1 per 2 years Regressed Volume is 4,897 to 21,165 (10,181) Regressed Duration is 8 to 35 (16)											
High Flow Pulses	Qp: 758 cfs with Average Frequency 1 per year Regressed Volume is 2,392 to 10,289 (4,961) Regressed Duration is 6 to 27 (13)											
	Qp: 63 cfs with Average Frequency 1 per season Regressed Volume is 227 to 1,305 (544) Regressed Duration is 3 to 15 (6)			Qp: 150 cfs with Average Frequency 1 per season Regressed Volume is 457 to 1,376 (793) Regressed Duration is 3 to 11 (6)			Qp: 91 cfs with Average Frequency 1 per season Regressed Volume is 227 to 792 (424) Regressed Duration is 2 to 8 (4)			Qp: 15 cfs with Average Frequency 1 per season Regressed Volume is 48 to 263 (113)		
	Qp: 9 cfs with Average Frequency 2 per season Regressed Volume is 25 to 150 (61) Regressed Duration is 1 to 6 (2)			Qp: 50 cfs with Average Frequency 2 per season Regressed Volume is 157 to 473 (272) Regressed Duration is 2 to 8 (4)			Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 23 to 83 (44) Regressed Duration is 1 to 4 (2)					
Base Flows (cfs)	26 (35.4%)			29 (37.0%)			19 (27.9%)			32 (34.5%)		
	15 (52.5%)			17 (54.0%)			7.8 (41.7%)			16 (47.1%)		
	6.3 (67.8%)			6.5 (71.1%)			2.9 (54.2%)			3 (61.1%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter			Spring			Summer			Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1943 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

SRSabinal19431969

Overbank Flows	Qp: 6,760 cfs with Average Frequency 1 per 5 years Regressed Volume is 30,789 to 149,058 (67,745) Regressed Duration is 18 to 96 (42)										
	Qp: 3,460 cfs with Average Frequency 1 per 2 years Regressed Volume is 15,219 to 73,381 (33,419) Regressed Duration is 13 to 72 (31)										
High Flow Pulses	Qp: 1,310 cfs with Average Frequency 1 per year Regressed Volume is 5,475 to 26,276 (11,994) Regressed Duration is 9 to 47 (20)										
	Qp: 61 cfs with Average Frequency 1 per season Regressed Volume is 236 to 1,769 (646) Regressed Duration is 3 to 19 (7)			Qp: 257 cfs with Average Frequency 1 per season Regressed Volume is 1,105 to 3,835 (2,058) Regressed Duration is 4 to 19 (9)			Qp: 103 cfs with Average Frequency 1 per season Regressed Volume is 344 to 1,476 (713) Regressed Duration is 3 to 14 (6)			Qp: 61 cfs with Average Frequency 1 per season Regressed Volume is 208 to 969 (449)	
				Qp: 70 cfs with Average Frequency 2 per season Regressed Volume is 268 to 929 (499) Regressed Duration is 2 to 11 (5)			Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 40 to 174 (83) Regressed Duration is 1 to 7 (3)				
Base Flows (cfs)	39 (46.9%)			40 (52.8%)			34 (45.0%)			35 (49.5%)	
	25 (64.5%)			24 (68.2%)			24 (58.2%)			23 (64.5%)	
	16 (83.2%)			11 (83.7%)			13 (71.8%)			14 (79.5%)	
Subsistence Flows (cfs)	1.9 (99.7%)			1.8 (98.3%)			0.7 (92.6%)			0.28 (96.1%)	
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter				Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

SRSabinal19702009

Overbank Flows	Qp: 5,040 cfs with Average Frequency 1 per 5 years Regressed Volume is 17,410 to 80,590 (37,457) Regressed Duration is 14 to 74 (32)												
	Qp: 2,210 cfs with Average Frequency 1 per 2 years Regressed Volume is 7,306 to 33,757 (15,704) Regressed Duration is 11 to 57 (25)												
High Flow Pulses	Qp: 1,050 cfs with Average Frequency 1 per year Regressed Volume is 3,336 to 15,391 (7,165) Regressed Duration is 8 to 46 (20)												
	Qp: 9 cfs with Average Frequency 1 per season Regressed Volume is 31 to 163 (71) Regressed Duration is 3 to 15 (6)				Qp: 21 cfs with Average Frequency 1 per season Regressed Volume is 52 to 192 (100) Regressed Duration is 2 to 11 (5)				Qp: 2 cfs with Average Frequency 1 per season Regressed Volume is 5 to 20 (10) Regressed		Qp: 11 cfs with Average Frequency 1 per season Regressed Volume is 26 to 96 (50) Regressed		
	Qp: 2 cfs with Average Frequency 2 per season Regressed Volume is 4 to 22 (10) Regressed Duration is 1 to 8 (3)				Qp: 2 cfs with Average Frequency 2 per season Regressed Volume is 5 to 17 (9) Regressed Duration is 1 to 6 (3)						Qp: 1 cfs with Average Frequency 2 per season Regressed Volume is 2 to 6 (3) Regressed		
	Base Flows (cfs)			2.3 (42.0%)			2.2 (41.7%)			2.1 (41.8%)		2.5 (44.5%)	
			1.3 (60.1%)			1.1 (59.9%)			0.93 (59.0%)		1.5 (59.9%)		
			0.86 (75.8%)			0.52 (76.1%)			0.52 (73.5%)		0.78 (76.3%)		
Subsistence Flows (cfs)			0 (100.0%)			0 (100.0%)			0 (100.0%)		0 (100.0%)		
Nov			Dec			Jan			Feb		Mar		
Apr			May			Jun			Jul		Aug		
Sep			Oct			Winter			Spring			Summer	
											Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1953 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 1,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 9,382 to 32,741 (17,527) Regressed Duration is 16 to 62 (32)											
	Qp: 698 cfs with Average Frequency 1 per 2 years Regressed Volume is 3,641 to 12,676 (6,794) Regressed Duration is 12 to 44 (22)											
High Flow Pulses	Qp: 313 cfs with Average Frequency 1 per year Regressed Volume is 1,458 to 5,066 (2,718) Regressed Duration is 8 to 31 (16)											
	Qp: 21 cfs with Average Frequency 1 per season Regressed Volume is 82 to 291 (155) Regressed Duration is 3 to 12 (6)			Qp: 91 cfs with Average Frequency 1 per season Regressed Volume is 347 to 1,137 (628) Regressed Duration is 4 to 17 (8)			Qp: 38 cfs with Average Frequency 1 per season Regressed Volume is 122 to 360 (210) Regressed Duration is 4 to 11 (6)			Qp: 23 cfs with Average Frequency 1 per season Regressed Volume is 69 to 270 (136)		
	Qp: 9 cfs with Average Frequency 2 per season Regressed Volume is 29 to 100 (54) Regressed Duration is 2 to 8 (4)			Qp: 33 cfs with Average Frequency 2 per season Regressed Volume is 111 to 364 (201) Regressed Duration is 3 to 12 (6)			Qp: 11 cfs with Average Frequency 2 per season Regressed Volume is 31 to 93 (54) Regressed Duration is 2 to 7 (4)			Qp: 7 cfs with Average Frequency 2 per season Regressed Volume is 17 to 65 (33) Regressed		
Base Flows (cfs)	6.1 (41.4%)			6.7 (50.7%)			6.4 (40.8%)			6.8 (44.9%)		
	3.6 (60.3%)			2.8 (68.2%)			2.8 (57.6%)			3.6 (64.1%)		
	2 (80.2%)			1.2 (83.6%)			1.3 (73.2%)			1.3 (81.7%)		
Subsistence Flows (cfs)	0.05 (98.7%)			0.06 (97.7%)			0.02 (92.9%)			0.05 (98.6%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Winter				Spring				Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1962 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 3,340 cfs with Average Frequency 1 per 5 years Regressed Volume is 15,470 to 59,595 (30,363) Regressed Duration is 12 to 51 (25)											
	Qp: 1,470 cfs with Average Frequency 1 per 2 years Regressed Volume is 6,246 to 24,017 (12,248) Regressed Duration is 9 to 38 (18)											
High Flow Pulses	Qp: 794 cfs with Average Frequency 1 per year Regressed Volume is 3,162 to 12,144 (6,197) Regressed Duration is 7 to 30 (15)											
	Qp: 61 cfs with Average Frequency 1 per season Regressed Volume is 245 to 1,023 (500) Regressed Duration is 3 to 15 (7)			Qp: 291 cfs with Average Frequency 1 per season Regressed Volume is 977 to 3,364 (1,813) Regressed Duration is 4 to 18 (9)			Qp: 90 cfs with Average Frequency 1 per season Regressed Volume is 262 to 889 (483) Regressed Duration is 3 to 12 (6)			Qp: 50 cfs with Average Frequency 1 per season Regressed Volume is 149 to 575 (293)		
	Qp: 16 cfs with Average Frequency 2 per season Regressed Volume is 47 to 197 (97) Regressed Duration is 2 to 8 (4)			Qp: 91 cfs with Average Frequency 2 per season Regressed Volume is 275 to 947 (510) Regressed Duration is 3 to 12 (6)			Qp: 24 cfs with Average Frequency 2 per season Regressed Volume is 65 to 220 (119) Regressed Duration is 2 to 7 (4)			Qp: 13 cfs with Average Frequency 2 per season Regressed Volume is 32 to 122 (62) Regressed		
Base Flows (cfs)	15 (41.9%)			17 (51.9%)			17 (38.3%)			15 (43.2%)		
	6.4 (60.2%)			5.2 (68.2%)			9 (54.1%)			7.9 (61.2%)		
	2.9 (79.6%)			1.2 (83.1%)			1.9 (70.5%)			2.5 (79.3%)		
Subsistence Flows (cfs)	0 (100.0%)			0 (100.0%)			0 (100.0%)			0 (100.0%)		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
	Winter				Spring			Summer			Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1953 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

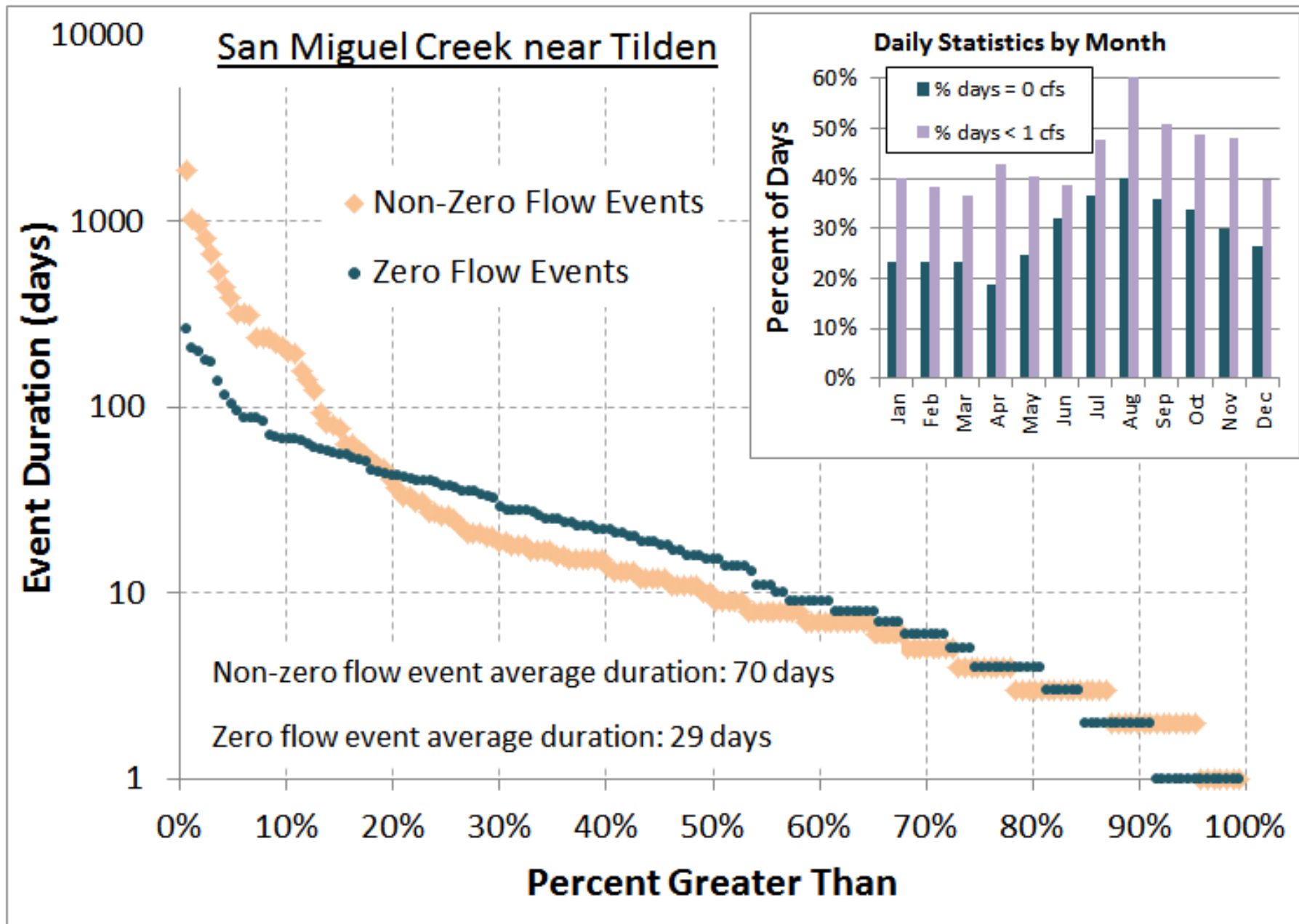
HCTarpley19532009

Overbank Flows	Qp: 8,180 cfs with Average Frequency 1 per 5 years Regressed Volume is 19,800 to 55,895 (33,268) Regressed Duration is 6 to 23 (12)											
	Qp: 3,970 cfs with Average Frequency 1 per 2 years Regressed Volume is 9,882 to 27,880 (16,598) Regressed Duration is 6 to 21 (11)											
High Flow Pulses	Qp: 2,210 cfs with Average Frequency 1 per year Regressed Volume is 5,627 to 15,868 (9,449) Regressed Duration is 5 to 20 (11)											
	Qp: 162 cfs with Average Frequency 1 per season Regressed Volume is 480 to 1,577 (870) Regressed Duration is 4 to 19 (9)				Qp: 685 cfs with Average Frequency 1 per season Regressed Volume is 2,058 to 4,940 (3,188) Regressed Duration is 5 to 16 (9)				Qp: 156 cfs with Average Frequency 1 per season Regressed Volume is 439 to 1,036 (675)		Qp: 303 cfs with Average Frequency 1 per season Regressed Volume is 802 to 2,006 (1,268)	
	Qp: 45 cfs with Average Frequency 2 per season Regressed Volume is 145 to 474 (262) Regressed Duration is 4 to 16 (8)				Qp: 218 cfs with Average Frequency 2 per season Regressed Volume is 652 to 1,564 (1,010) Regressed Duration is 4 to 14 (8)				Qp: 16 cfs with Average Frequency 2 per season Regressed Volume is 48 to 112 (73) Regressed		Qp: 44 cfs with Average Frequency 2 per season Regressed Volume is 122 to 306 (193)	
	3.4 (36.2%)				4.4 (44.2%)				2.6 (36.2%)		3.6 (37.0%)	
Base Flows (cfs)	2 (48.7%)				2 (54.1%)				1.3 (43.6%)		1.8 (45.7%)	
	0.95 (60.2%)				0.36 (64.6%)				0.22 (52.2%)		0.23 (55.4%)	
	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
Subsistence Flows (cfs)	0 (100.0%)				0 (100.0%)				0 (100.0%)		0 (100.0%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1965 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.



Overbank Flows	Qp: 13,100 cfs with Average Frequency 1 per 5 years Regressed Volume is 40,514 to 93,034 (61,393) Regressed Duration is 10 to 29 (17)													
	Qp: 8,220 cfs with Average Frequency 1 per 2 years Regressed Volume is 25,706 to 59,013 (38,949) Regressed Duration is 9 to 26 (15)													
High Flow Pulses	Qp: 3,880 cfs with Average Frequency 1 per year Regressed Volume is 12,353 to 28,347 (18,713) Regressed Duration is 7 to 22 (13)													
	Qp: 725 cfs with Average Frequency 1 per season Regressed Volume is 2,390 to 5,718 (3,697) Regressed Duration is 6 to 18 (11)				Qp: 1,770 cfs with Average Frequency 1 per season Regressed Volume is 6,156 to 12,451 (8,755) Regressed Duration is 6 to 16 (10)				Qp: 253 cfs with Average Frequency 1 per season Regressed Volume is 742 to 1,960 (1,206)		Qp: 620 cfs with Average Frequency 1 per season Regressed Volume is 2,144 to 4,323 (3,045)			
	Qp: 228 cfs with Average Frequency 2 per season Regressed Volume is 818 to 1,955 (1,265) Regressed Duration is 5 to 14 (8)				Qp: 600 cfs with Average Frequency 2 per season Regressed Volume is 2,115 to 4,275 (3,007) Regressed Duration is 5 to 13 (8)				Qp: 37 cfs with Average Frequency 2 per season Regressed Volume is 104 to 275 (169)		Qp: 102 cfs with Average Frequency 2 per season Regressed Volume is 356 to 717 (505)			
	Base Flows (cfs)			14 (45.3%)			10 (57.0%)			8 (44.2%)		7.6 (52.0%)		
			9 (63.0%)			5.4 (72.5%)			3.4 (61.1%)		3.6 (68.3%)			
			4.8 (82.8%)			2.4 (84.8%)			1.4 (73.4%)		1.6 (78.5%)			
Subsistence Flows (cfs)			0.05 (99.5%)			0 (100.0%)			0 (100.0%)		0 (100.0%)			
			Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
			Winter				Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1933 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 16,600 cfs with Average Frequency 1 per 5 years Regressed Volume is 47,291 to 108,221 (71,540) Regressed Duration is 10 to 29 (17)											
	Qp: 7,910 cfs with Average Frequency 1 per 2 years Regressed Volume is 23,017 to 52,625 (34,803) Regressed Duration is 8 to 25 (14)											
High Flow Pulses	Qp: 3,660 cfs with Average Frequency 1 per year Regressed Volume is 10,886 to 24,871 (16,454) Regressed Duration is 7 to 21 (12)											
	Qp: 900 cfs with Average Frequency 1 per season Regressed Volume is 2,704 to 6,507 (4,195) Regressed Duration is 6 to 18 (11)				Qp: 1,860 cfs with Average Frequency 1 per season Regressed Volume is 6,165 to 11,998 (8,600) Regressed Duration is 5 to 15 (9)			Qp: 392 cfs with Average Frequency 1 per season Regressed Volume is 1,061 to 2,794 (1,722)		Qp: 632 cfs with Average Frequency 1 per season Regressed Volume is 2,061 to 3,958 (2,856)		
	Qp: 289 cfs with Average Frequency 2 per season Regressed Volume is 960 to 2,305 (1,488) Regressed Duration is 5 to 14 (8)				Qp: 740 cfs with Average Frequency 2 per season Regressed Volume is 2,520 to 4,899 (3,513) Regressed Duration is 5 to 13 (8)			Qp: 55 cfs with Average Frequency 2 per season Regressed Volume is 145 to 382 (235)		Qp: 130 cfs with Average Frequency 2 per season Regressed Volume is 419 to 803 (580)		
Base Flows (cfs)	16 (47.2%)				12 (57.4%)			8.3 (43.2%)		8.3 (50.6%)		
	11 (67.2%)				7.5 (72.4%)			3.8 (62.2%)		3.4 (67.2%)		
	6.4 (83.2%)				3.2 (86.3%)			1.6 (73.5%)		1.5 (77.7%)		
Subsistence Flows (cfs)	0.3 (99.7%)				0 (100.0%)			0 (100.0%)		0.1 (93.8%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter					Spring			Summer		Fall		

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1933 to 12/31/1969.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 12,800 cfs with Average Frequency 1 per 5 years Regressed Volume is 43,826 to 99,959 (66,188) Regressed Duration is 10 to 31 (18)													
	Qp: 8,340 cfs with Average Frequency 1 per 2 years Regressed Volume is 28,755 to 65,550 (43,416) Regressed Duration is 9 to 28 (16)													
High Flow Pulses	Qp: 4,040 cfs with Average Frequency 1 per year Regressed Volume is 14,094 to 32,103 (21,271) Regressed Duration is 8 to 24 (14)													
	Qp: 536 cfs with Average Frequency 1 per season Regressed Volume is 1,941 to 4,662 (3,008) Regressed Duration is 6 to 18 (11)				Qp: 1,660 cfs with Average Frequency 1 per season Regressed Volume is 6,127 to 12,813 (8,860) Regressed Duration is 6 to 18 (10)				Qp: 136 cfs with Average Frequency 1 per season Regressed Volume is 439 to 1,142 (708)		Qp: 591 cfs with Average Frequency 1 per season Regressed Volume is 2,231 to 4,485 (3,163)			
	Qp: 181 cfs with Average Frequency 2 per season Regressed Volume is 696 to 1,669 (1,078) Regressed Duration is 5 to 15 (8)				Qp: 447 cfs with Average Frequency 2 per season Regressed Volume is 1,639 to 3,421 (2,368) Regressed Duration is 5 to 14 (8)				Qp: 21 cfs with Average Frequency 2 per season Regressed Volume is 64 to 168 (104)		Qp: 71 cfs with Average Frequency 2 per season Regressed Volume is 275 to 551 (389)			
	Base Flows (cfs)			11 (46.2%)			8.6 (55.5%)			7.6 (45.0%)		7 (53.1%)		
			6.9 (62.9%)			3.8 (73.5%)			3.2 (60.0%)		3.8 (68.9%)			
			3.8 (82.1%)			1.9 (83.7%)			1.2 (73.6%)		1.6 (79.9%)			
Subsistence Flows (cfs)			0.02 (99.3%)			0 (100.0%)			0 (100.0%)		0 (100.0%)			
			Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
			Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

Notes:

1. Period of Record used : 1/1/1970 to 12/31/2009.
2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 3,550 cfs with Average Frequency 1 per 5 years Regressed Volume is 10,380 to 23,790 (15,714) Regressed Duration is 10 to 28 (17)											
	Qp: 2,500 cfs with Average Frequency 1 per 2 years Regressed Volume is 7,362 to 16,866 (11,143) Regressed Duration is 9 to 26 (15)											
High Flow Pulses	Qp: 1,320 cfs with Average Frequency 1 per year Regressed Volume is 3,937 to 9,015 (5,958) Regressed Duration is 8 to 23 (13)											
	Qp: 220 cfs with Average Frequency 1 per season Regressed Volume is 691 to 1,601 (1,052) Regressed Duration is 6 to 17 (10)				Qp: 227 cfs with Average Frequency 1 per season Regressed Volume is 676 to 1,479 (1,000) Regressed Duration is 5 to 13 (8)				Qp: 21 cfs with Average Frequency 1 per season Regressed Volume is 62 to 155 (98) Regressed		Qp: 364 cfs with Average Frequency 1 per season Regressed Volume is 1,148 to 2,450 (1,677)	
	Qp: 59 cfs with Average Frequency 2 per season Regressed Volume is 196 to 453 (298) Regressed Duration is 4 to 13 (7)				Qp: 48 cfs with Average Frequency 2 per season Regressed Volume is 149 to 325 (220) Regressed Duration is 4 to 9 (6)				Qp: 6 cfs with Average Frequency 2 per season Regressed Volume is 15 to 39 (24) Regressed		Qp: 64 cfs with Average Frequency 2 per season Regressed Volume is 211 to 449 (308)	
Base Flows (cfs)	2.4 (46.9%)				2.3 (48.3%)				2.1 (42.1%)		2.1 (63.6%)	
	1.8 (67.1%)				1.7 (64.3%)				1.5 (61.7%)		1.6 (79.0%)	
	1.4 (85.5%)				1.3 (80.3%)				1.2 (76.5%)		1.3 (87.9%)	
Subsistence Flows (cfs)	0.79 (99.1%)				0.74 (94.8%)				0.74 (93.9%)		0.8 (98.6%)	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1973 to 12/31/2009.
 2. Volumes are in acre-feet and durations are in days.

Overbank Flows	Qp: 3,350 cfs with Average Frequency 1 per 5 years Regressed Volume is 8,258 to 26,778 (14,871) Regressed Duration is 10 to 36 (19)											
	Qp: 1,380 cfs with Average Frequency 1 per 2 years Regressed Volume is 3,473 to 11,234 (6,246) Regressed Duration is 8 to 28 (15)											
High Flow Pulses	Qp: 544 cfs with Average Frequency 1 per year Regressed Volume is 1,398 to 4,515 (2,513) Regressed Duration is 6 to 22 (12)											
	Qp: 15 cfs with Average Frequency 1 per season Regressed Volume is 49 to 166 (90) Regressed Duration is 3 to 12 (6)				Qp: 87 cfs with Average Frequency 1 per season Regressed Volume is 223 to 634 (376) Regressed Duration is 4 to 11 (6)			Qp: 18 cfs with Average Frequency 1 per season Regressed Volume is 47 to 151 (84) Regressed		Qp: 17 cfs with Average Frequency 1 per season Regressed Volume is 48 to 166 (89) Regressed		
	Qp: 8 cfs with Average Frequency 2 per season Regressed Volume is 26 to 88 (48) Regressed Duration is 3 to 9 (5)				Qp: 17 cfs with Average Frequency 2 per season Regressed Volume is 46 to 129 (77) Regressed Duration is 2 to 8 (4)			Qp: 3 cfs with Average Frequency 2 per season Regressed Volume is 9 to 28 (16) Regressed		Qp: 6 cfs with Average Frequency 2 per season Regressed Volume is 18 to 62 (34) Regressed		
Base Flows (cfs)	2.1 (45.0%)				2 (45.9%)			1.9 (47.8%)		2.1 (51.0%)		
	1.6 (68.3%)				1.6 (65.4%)			1.5 (64.0%)		1.5 (69.4%)		
	1.3 (82.4%)				1.2 (82.5%)			1.1 (79.9%)		1.2 (82.4%)		
Subsistence Flows (cfs)	0.59 (98.5%)				0.49 (96.2%)			0.52 (94.5%)		0.6 (97.1%)		
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	Winter					Spring			Summer		Fall	

Flow Levels	High (75th %ile)
	Medium (50th %ile)
	Low (25th %ile)
	Subsistence

- Notes:
1. Period of Record used : 1/1/1965 to 12/31/1997.
 2. Volumes are in acre-feet and durations are in days.