

Poudre River Dry-up

Daylan Figgs
Natural Areas

Key Structure Report and River Operations

- Prepared by Bishop-Brogden Associates, Inc
 - Existing data (diversion records, stream gage data etc)
 - Modeling output
 - Experience with water rights operations and administration
 - Working document

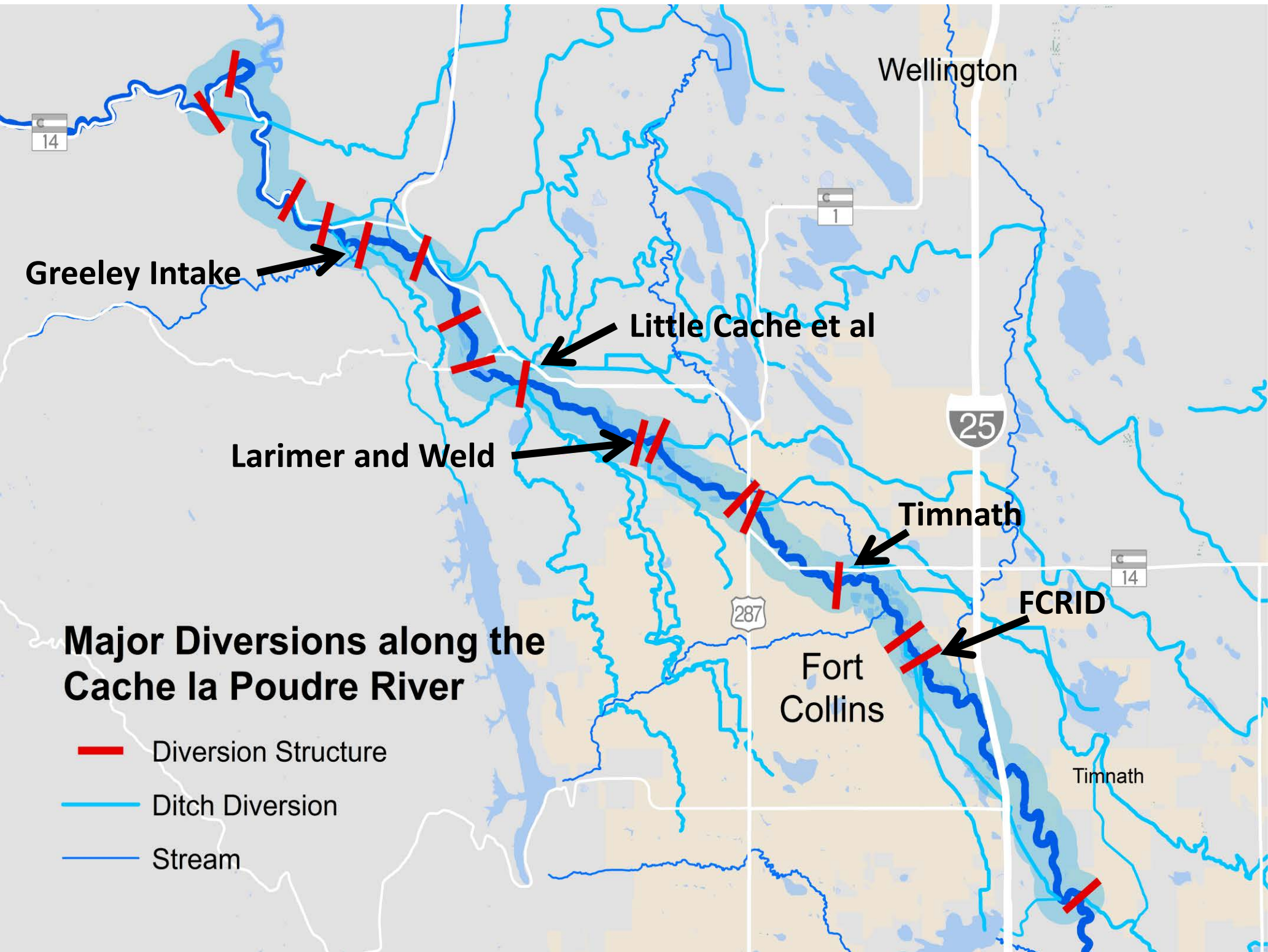


Table 1a
NCWCD Poudre River Point Flow Model
Percent of Days with Zero Flow

Node	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual
Munroe Canal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fort Collins Pipeline	1%	1%	2%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%
North Fork Confluence	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poudre Valley Canal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poudre R. at Canyon Mouth	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greeley Filters Pipeline	4%	6%	8%	8%	6%	2%	0%	0%	0%	0%	1%	1%	3%
Hansen Supply Canal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pleasant Valley and Lake Canal	0%	1%	1%	3%	3%	2%	0%	0%	0%	0%	1%	3%	1%
Larimer County Canal	0%	0%	0%	0%	1%	2%	1%	0%	0%	0%	1%	0%	0%
Jackson Ditch	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Little Cache et al	14%	7%	3%	3%	2%	5%	2%	0%	0%	0%	11%	23%	6%
Claymore Outlet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ideal Cement Pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Arthur Ditch	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Larimer Weld Irrigation Canal	20%	22%	19%	19%	15%	12%	3%	0%	1%	3%	15%	20%	12%
Josh Ames Ditch	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lake Canal	0%	0%	0%	2%	1%	0%	0%	0%	0%	1%	1%	0%	0%
Coy Ditch	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%
Poudre R. at Fort Collins	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Mulberry WWTP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Timnath Inlet	14%	16%	25%	17%	13%	8%	4%	0%	0%	1%	5%	7%	9%
Chaffee Ditch	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry Creek	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spring Creek	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Box Elder Ditch	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	2%	2%	0%
Fossil Creek Inlet Ditch	38%	28%	18%	18%	14%	20%	11%	3%	11%	25%	32%	29%	21%
Drake WWTP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poudre R. above Boxelder Crk	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Boxelder Creek	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 3a
Percent of Days with Zero Flow
NCWCD Poudre River Point Flow Model

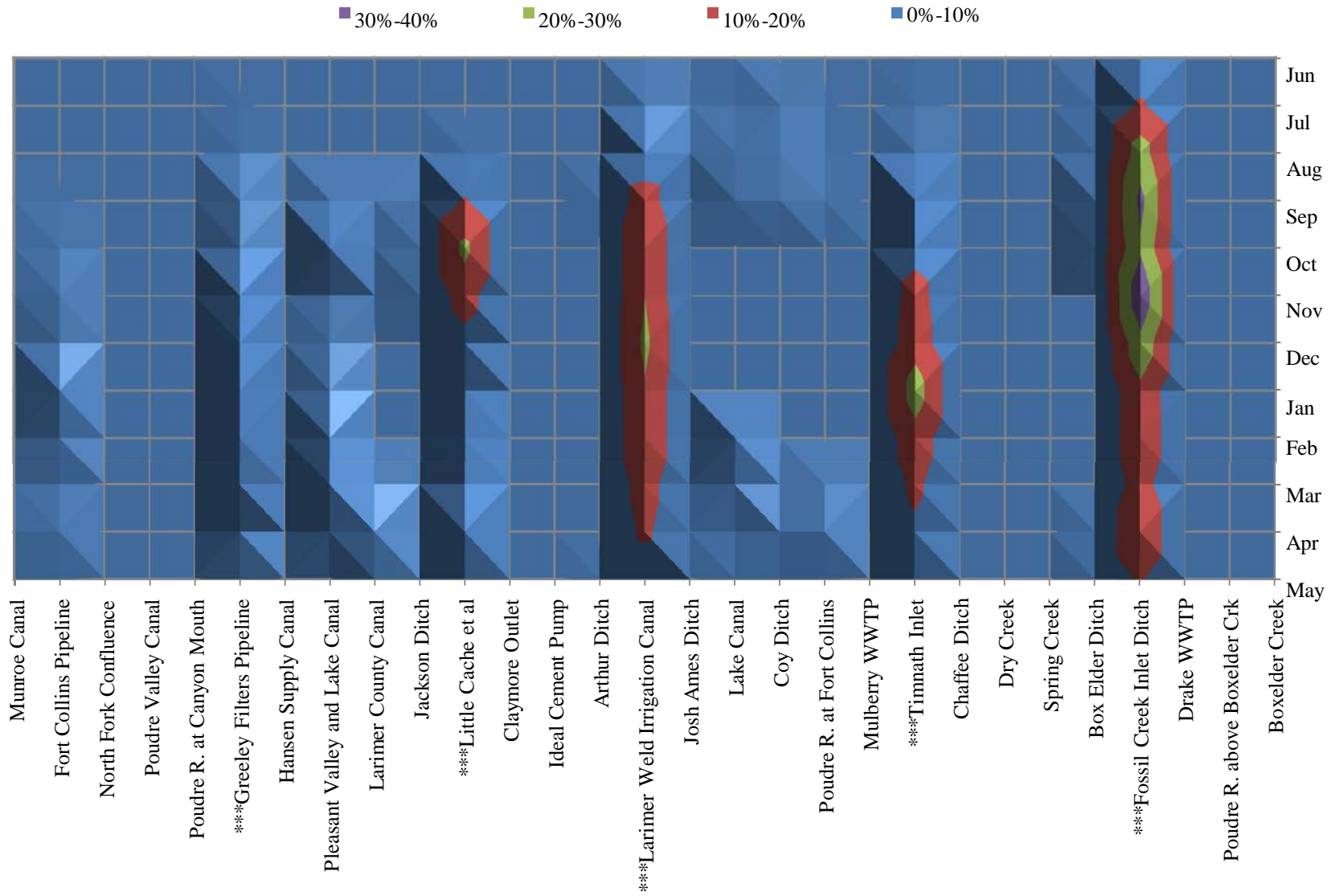


Table 1b
NCWCD Poudre River Point Flow Model
Percent of Days with Flow Below 5 cfs

Node	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual
Munroe Canal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fort Collins Pipeline	2%	3%	4%	3%	1%	1%	0%	0%	0%	0%	0%	1%	1%
North Fork Confluence	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poudre Valley Canal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poudre R. at Canyon Mouth	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greeley Filters Pipeline	9%	24%	29%	35%	20%	6%	1%	0%	0%	0%	2%	5%	11%
Hansen Supply Canal	7%	22%	25%	33%	19%	5%	0%	0%	0%	0%	0%	1%	9%
Pleasant Valley and Lake Canal	7%	21%	26%	32%	20%	7%	0%	0%	0%	0%	3%	6%	10%
Larimer County Canal	3%	15%	20%	26%	17%	10%	1%	0%	0%	0%	2%	4%	8%
Jackson Ditch	2%	3%	8%	7%	4%	4%	1%	0%	0%	0%	2%	3%	3%
Little Cache et al	28%	12%	8%	11%	7%	11%	4%	0%	0%	0%	16%	29%	10%
Claymore Outlet	28%	12%	8%	11%	7%	10%	3%	0%	0%	0%	14%	29%	10%
Ideal Cement Pump	27%	12%	7%	10%	6%	9%	3%	0%	0%	0%	13%	28%	10%
Arthur Ditch	16%	11%	6%	5%	3%	4%	2%	0%	0%	0%	4%	19%	6%
Larimer Weld Irrigation Canal	53%	46%	38%	38%	44%	37%	9%	0%	1%	5%	26%	45%	28%
Josh Ames Ditch	51%	45%	37%	37%	42%	35%	8%	0%	1%	3%	22%	42%	27%
Lake Canal	41%	39%	35%	37%	41%	29%	7%	0%	1%	3%	15%	28%	23%
Coy Ditch	38%	37%	34%	36%	40%	33%	9%	0%	1%	3%	19%	32%	23%
Poudre R. at Fort Collins	32%	30%	31%	32%	37%	30%	8%	0%	1%	3%	15%	22%	20%
Mulberry WWTP	1%	0%	1%	3%	4%	2%	0%	0%	0%	0%	0%	0%	1%
Timnath Inlet	35%	38%	45%	31%	36%	23%	6%	0%	0%	1%	7%	18%	20%
Chaffee Ditch	34%	38%	44%	29%	36%	22%	6%	0%	0%	1%	6%	18%	20%
Dry Creek	24%	31%	40%	25%	31%	18%	4%	0%	0%	0%	4%	11%	16%
Spring Creek	8%	15%	25%	17%	19%	8%	2%	0%	0%	0%	1%	3%	8%
Box Elder Ditch	8%	10%	19%	16%	12%	8%	4%	0%	3%	5%	11%	10%	9%
Fossil Creek Inlet Ditch	59%	57%	54%	52%	48%	47%	21%	5%	21%	40%	53%	55%	43%
Drake WWTP	52%	51%	49%	45%	40%	42%	18%	4%	16%	34%	47%	47%	37%
Poudre R. above Boxelder Crk	37%	43%	43%	39%	32%	32%	12%	1%	7%	19%	31%	37%	28%
Boxelder Creek	8%	9%	9%	8%	9%	9%	1%	0%	0%	2%	2%	7%	5%

Figure 3b
Percent of Days with Flow at or Below 5 cfs
NCWCD Poudre River Point Flow Model

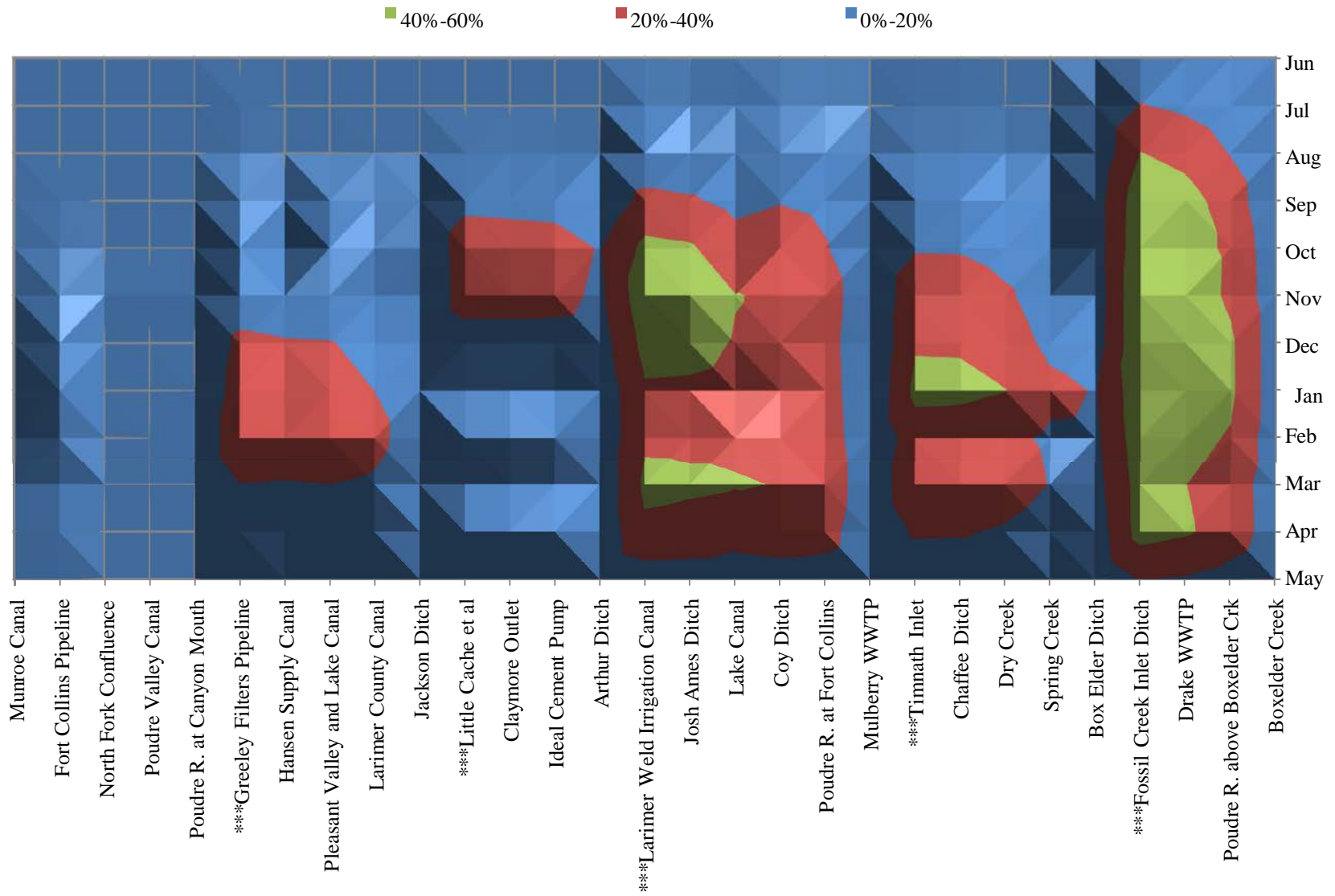


Figure 3c
 Percent of Days with Flow at or Below 10 cfs
 NCWCD Poudre River Point Flow Model

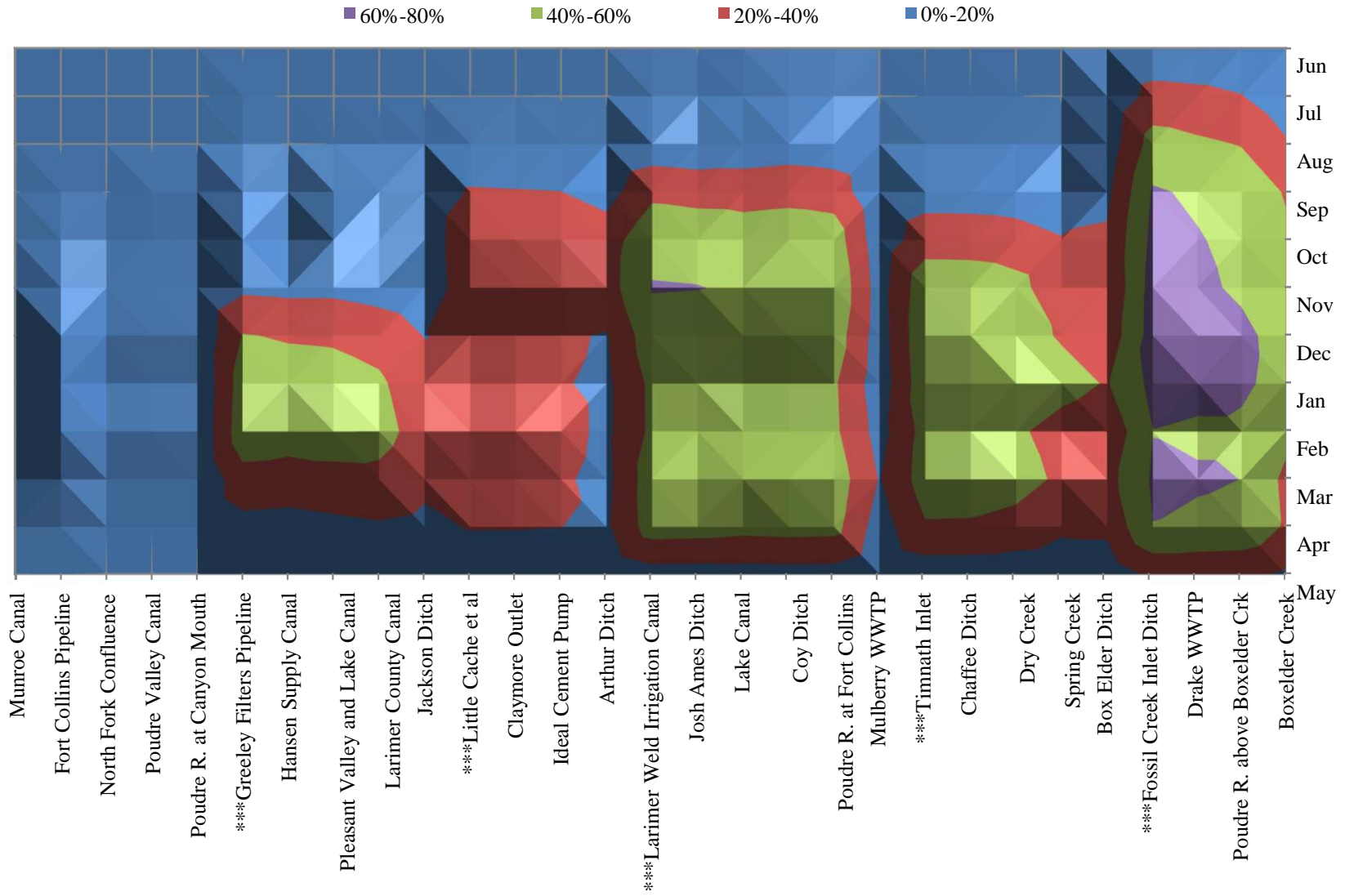


Figure 3d
 Percent of Days with Flow at or Below 35 cfs
 NCWCD Poudre River Point Flow Model

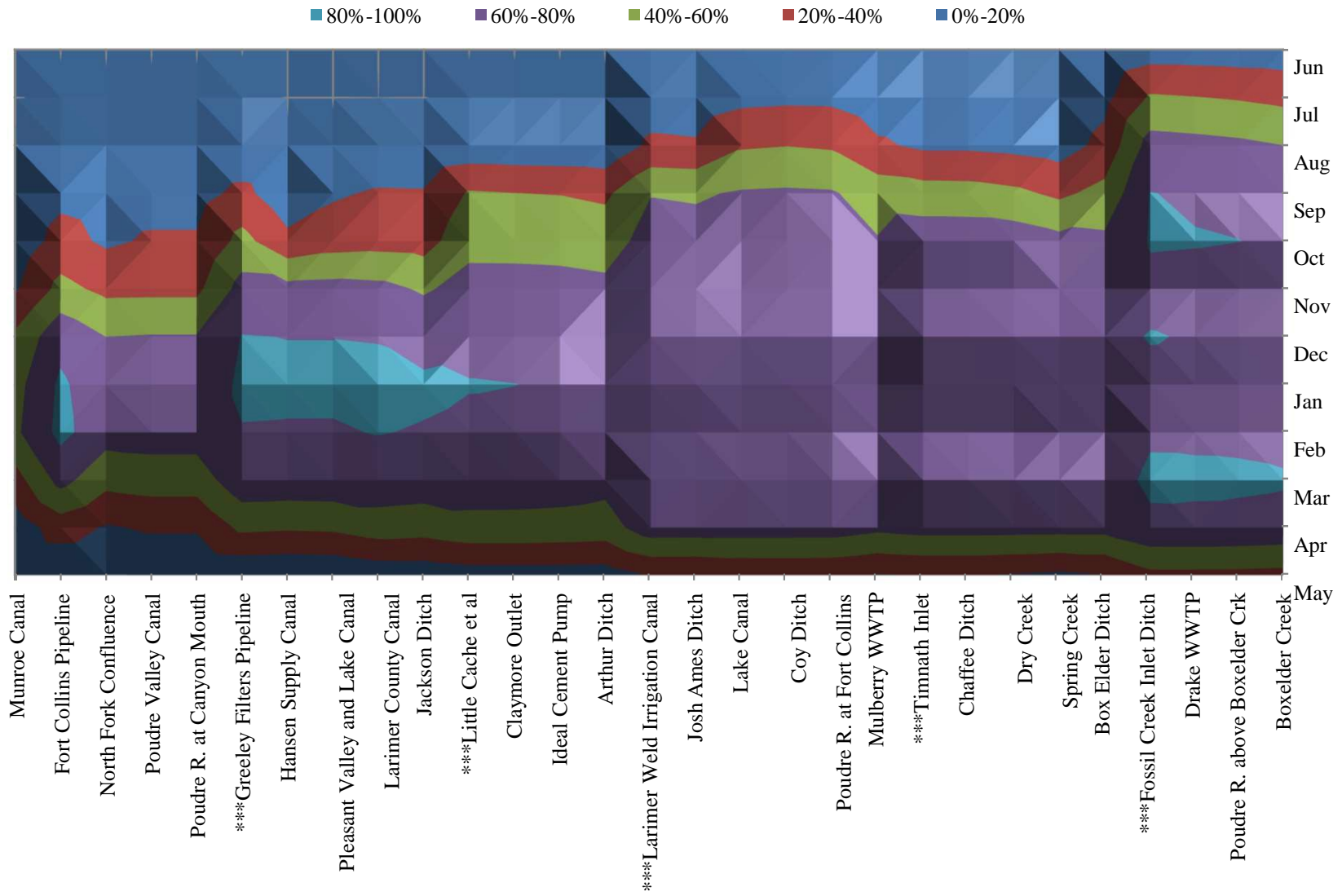


Table 1c
NCWCD Poudre River Point Flow Model
Percent of Days with Flow Below 10 cfs

Node	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual
Munroe Canal	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Fort Collins Pipeline	5%	10%	11%	11%	4%	1%	0%	0%	0%	0%	1%	2%	4%
North Fork Confluence	2%	3%	1%	3%	1%	0%	0%	0%	0%	0%	0%	0%	1%
Poudre Valley Canal	2%	3%	1%	3%	1%	0%	0%	0%	0%	0%	1%	1%	1%
Poudre R. at Canyon Mouth	2%	3%	1%	3%	1%	0%	0%	0%	0%	0%	1%	1%	1%
Greeley Filters Pipeline	16%	41%	50%	52%	33%	13%	1%	0%	0%	1%	6%	11%	19%
Hansen Supply Canal	15%	38%	48%	49%	32%	12%	0%	0%	0%	0%	1%	3%	16%
Pleasant Valley and Lake Canal	15%	38%	46%	49%	35%	15%	0%	0%	0%	0%	5%	12%	18%
Larimer County Canal	11%	33%	43%	47%	35%	17%	2%	0%	0%	0%	6%	9%	17%
Jackson Ditch	5%	19%	27%	32%	25%	15%	2%	0%	0%	0%	5%	7%	11%
Little Cache et al	35%	24%	23%	30%	24%	21%	5%	0%	0%	1%	22%	36%	18%
Claymore Outlet	35%	24%	23%	29%	24%	21%	5%	0%	0%	1%	21%	35%	18%
Ideal Cement Pump	34%	22%	22%	26%	23%	20%	5%	0%	0%	1%	20%	34%	17%
Arthur Ditch	31%	19%	16%	16%	15%	17%	4%	0%	0%	1%	12%	31%	13%
Larimer Weld Irrigation Canal	61%	53%	45%	44%	52%	50%	12%	0%	1%	7%	35%	55%	34%
Josh Ames Ditch	60%	52%	44%	44%	50%	49%	12%	0%	1%	5%	33%	54%	34%
Lake Canal	58%	52%	43%	44%	53%	46%	12%	1%	2%	7%	32%	51%	33%
Coy Ditch	58%	52%	43%	44%	53%	47%	13%	1%	2%	9%	34%	52%	34%
Poudre R. at Fort Collins	57%	51%	43%	44%	52%	47%	13%	0%	2%	8%	31%	51%	33%
Mulberry WWTP	11%	10%	8%	13%	19%	10%	2%	0%	0%	0%	4%	8%	7%
Timnath Inlet	54%	57%	54%	48%	49%	38%	8%	0%	0%	1%	12%	31%	29%
Chaffee Ditch	53%	56%	54%	47%	49%	38%	8%	0%	0%	1%	11%	30%	29%
Dry Creek	47%	49%	53%	43%	46%	34%	6%	0%	0%	1%	11%	28%	26%
Spring Creek	26%	38%	48%	32%	37%	24%	5%	0%	0%	1%	5%	21%	20%
Box Elder Ditch	21%	27%	38%	25%	33%	25%	8%	1%	5%	8%	16%	23%	19%
Fossil Creek Inlet Ditch	68%	69%	65%	60%	62%	60%	25%	6%	26%	48%	62%	65%	51%
Drake WWTP	63%	66%	66%	57%	62%	57%	25%	6%	25%	43%	57%	61%	49%
Poudre R. above Boxelder Crk	57%	64%	63%	57%	60%	55%	24%	5%	21%	39%	51%	56%	46%
Boxelder Creek	46%	54%	55%	46%	36%	38%	17%	3%	8%	22%	39%	43%	34%

Table 1d
NCWCD Poudre River Point Flow Model
Percent of Days with Flow Below 35 cfs

Node	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual
Munroe Canal	18%	44%	53%	56%	32%	9%	1%	0%	0%	0%	3%	8%	18%
Fort Collins Pipeline	46%	74%	83%	85%	66%	29%	2%	0%	1%	1%	15%	27%	36%
North Fork Confluence	35%	60%	67%	68%	46%	18%	1%	0%	1%	1%	11%	17%	27%
Poudre Valley Canal	35%	61%	68%	69%	49%	23%	1%	0%	1%	1%	13%	22%	28%
Poudre R. at Canyon Mouth	35%	61%	68%	69%	49%	23%	1%	0%	1%	1%	13%	22%	28%
Greeley Filters Pipeline	67%	81%	83%	79%	73%	44%	3%	0%	1%	4%	25%	46%	42%
Hansen Supply Canal	66%	80%	83%	79%	73%	43%	2%	0%	0%	0%	7%	25%	38%
Pleasant Valley and Lake Canal	67%	80%	83%	79%	73%	44%	3%	0%	0%	1%	17%	31%	40%
Larimer County Canal	66%	79%	84%	80%	73%	50%	7%	0%	0%	2%	22%	33%	41%
Jackson Ditch	58%	75%	82%	79%	71%	49%	8%	0%	0%	3%	22%	31%	40%
Little Cache et al	67%	76%	81%	78%	70%	54%	11%	0%	1%	6%	42%	54%	45%
Claymore Outlet	67%	76%	80%	78%	70%	54%	11%	0%	1%	6%	40%	54%	45%
Ideal Cement Pump	66%	76%	79%	76%	69%	53%	11%	0%	1%	5%	39%	54%	44%
Arthur Ditch	64%	70%	75%	72%	66%	51%	11%	0%	1%	4%	36%	52%	42%
Larimer Weld Irrigation Canal	73%	78%	78%	73%	73%	71%	21%	1%	10%	24%	59%	67%	52%
Josh Ames Ditch	73%	77%	77%	73%	73%	70%	21%	1%	9%	22%	58%	67%	52%
Lake Canal	71%	76%	75%	72%	73%	70%	23%	2%	15%	38%	62%	66%	54%
Coy Ditch	70%	76%	75%	72%	72%	70%	24%	3%	16%	39%	63%	66%	54%
Poudre R. at Fort Collins	70%	75%	74%	71%	72%	70%	23%	3%	16%	38%	62%	66%	53%
Mulberry WWTP	65%	70%	67%	66%	68%	65%	19%	1%	8%	23%	51%	61%	47%
Timnath Inlet	71%	79%	74%	69%	76%	68%	21%	1%	7%	17%	48%	72%	50%
Chaffee Ditch	71%	79%	74%	68%	76%	68%	21%	1%	7%	17%	48%	72%	50%
Dry Creek	70%	78%	73%	67%	75%	67%	19%	1%	5%	14%	44%	72%	49%
Spring Creek	67%	77%	73%	68%	74%	67%	17%	0%	4%	11%	36%	66%	47%
Box Elder Ditch	65%	77%	72%	68%	73%	67%	20%	2%	15%	26%	46%	64%	49%
Fossil Creek Inlet Ditch	77%	81%	77%	78%	83%	77%	35%	10%	42%	68%	80%	81%	66%
Drake WWTP	76%	79%	77%	78%	82%	77%	35%	10%	41%	66%	78%	81%	65%
Poudre R. above Boxelder Crk	76%	78%	77%	77%	82%	76%	35%	9%	38%	64%	76%	80%	64%
Boxelder Creek	75%	77%	75%	76%	81%	75%	34%	8%	35%	60%	73%	79%	62%

Figure 2
Total Percent of Days with Flow at or Below X cfs
 NCWCD Poudre River Point Flow Model

