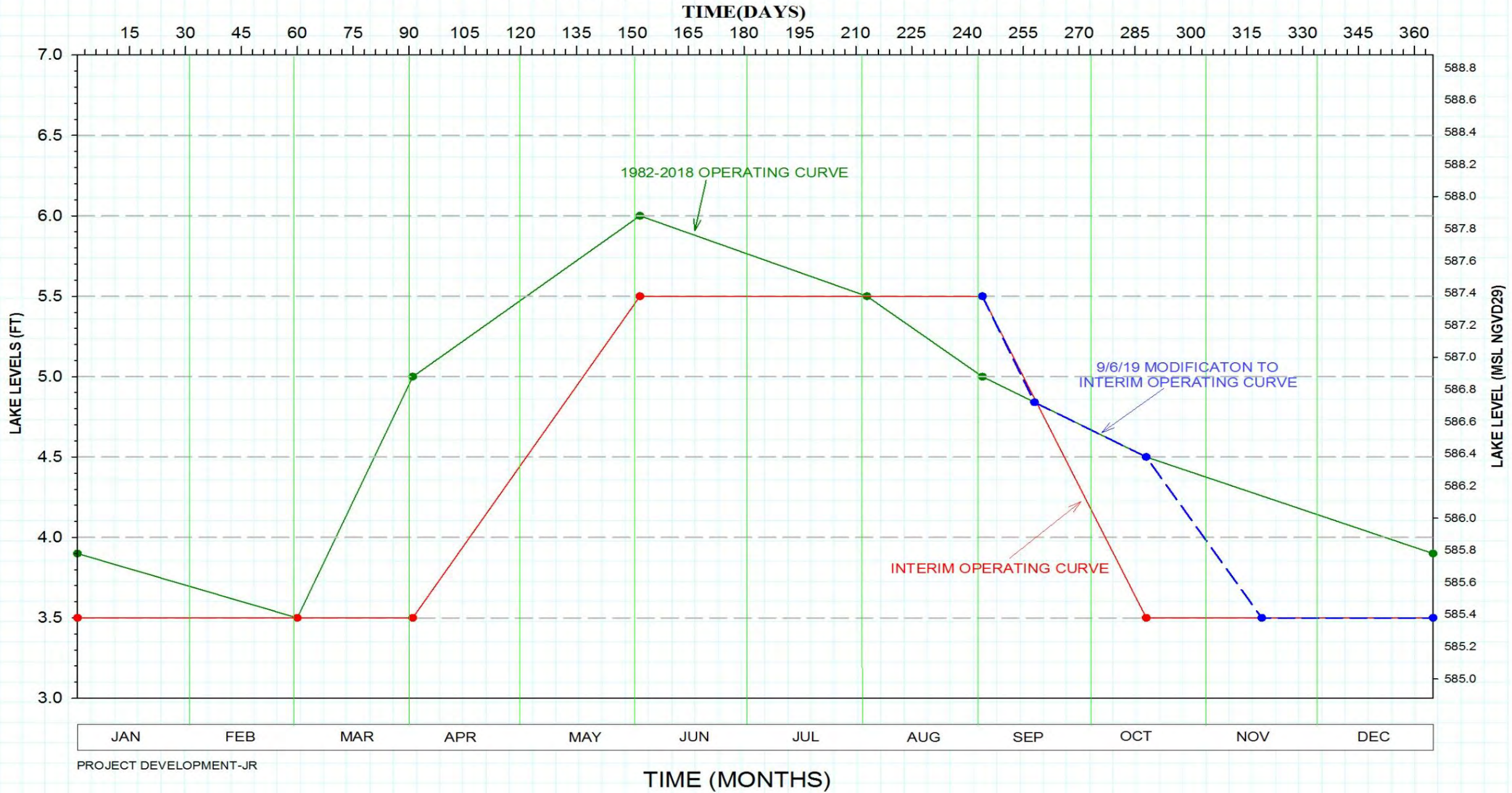


# APPENDIX E

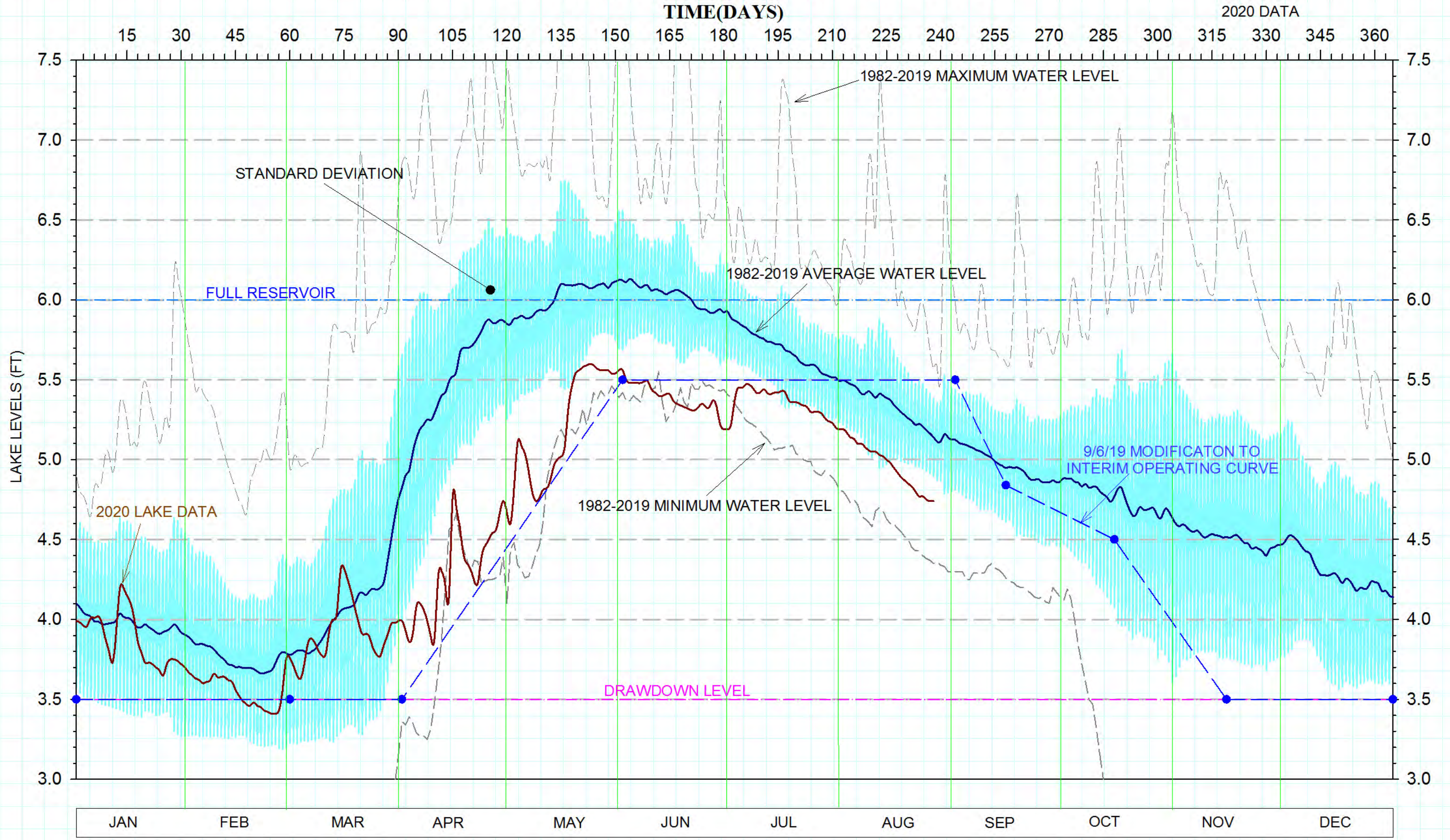
- E-1 Modified Interim Operating Curve
- E-2 Drought conditions

# NEWFOUND LAKE LEVEL GUIDE CURVE

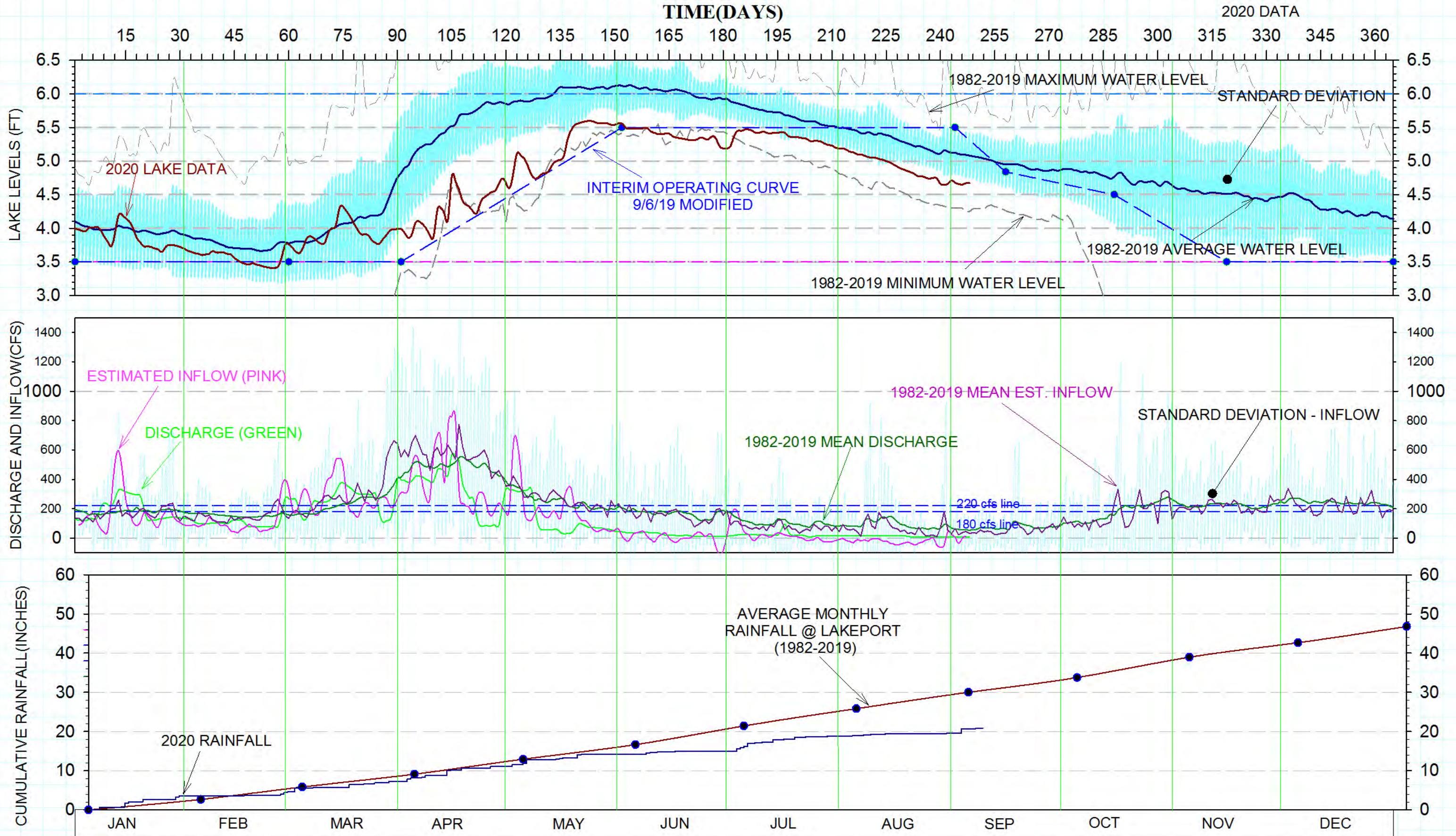


PROJECT DEVELOPMENT-JR

# NEWFOUND LAKE LEVEL DATA



# NEWFOUND LAKE LEVEL DATA



## AGGREGATED PRECIPITATION DATA for N.H. DROUGHT MANAGEMENT AREAS

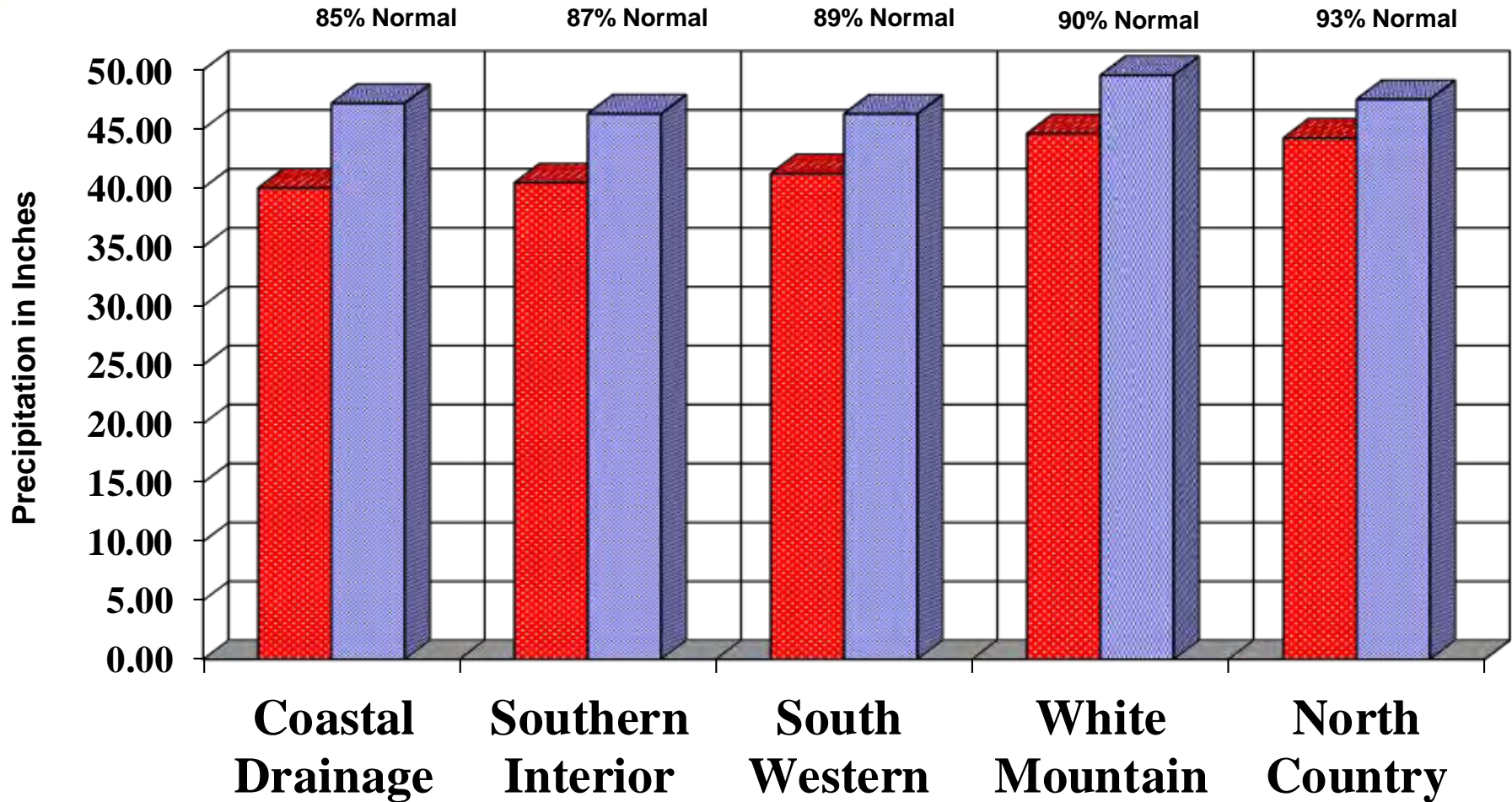


	Actual Rainfall (inches)	Normal Rainfall (inches)	Deviation from Normal (inches)	Percent of Normal
<u>Coastal Drainage:</u> Rockingham, Strafford counties				
four month	8.79	15.40	-6.61	57%
six month	16.00	23.83	-7.83	67%
nine month	24.45	34.66	-10.21	71%
twelve month	39.98	47.17	-7.19	85%
<u>Southern Interior:</u> Belknap, Hillsborough, Merrimack counties				
four month	9.96	15.81	-5.84	63%
six month	16.83	23.78	-6.95	71%
nine month	25.48	34.01	-8.53	75%
twelve month	40.43	46.28	-5.85	87%
<u>South Western:</u> Cheshire, Sullivan counties				
four month	11.78	16.42	-4.65	72%
six month	18.57	24.16	-5.59	77%
nine month	26.77	34.22	-7.45	78%
twelve month	41.20	46.27	-5.08	89%
<u>White Mountain:</u> Carroll, Grafton counties				
four month	11.59	17.57	-5.99	66%
six month	20.35	25.94	-5.60	78%
nine month	29.95	36.25	-6.30	83%
twelve month	44.61	49.54	-4.93	90%
<u>North Country:</u> Coos county				
four month	14.25	18.21	-3.96	78%
six month	22.21	26.04	-3.83	85%
nine month	31.22	35.16	-3.94	89%
twelve month	44.23	47.50	-3.27	93%

four month period : June 2020 - September 2020  
 six month period : April 2020 - September 2020  
 nine month period : January 2020 - September 2020  
 twelve month period: October 2019 - September 2020



# TWELVE MONTH AGGREGATED PRECIPITATION DATA for N.H. DROUGHT MANAGEMENT AREAS from October 2019 through September 2020



■ Actual ■ Normal

# MONTHLY PRECIPITATION DATA FOR N.H COUNTIES



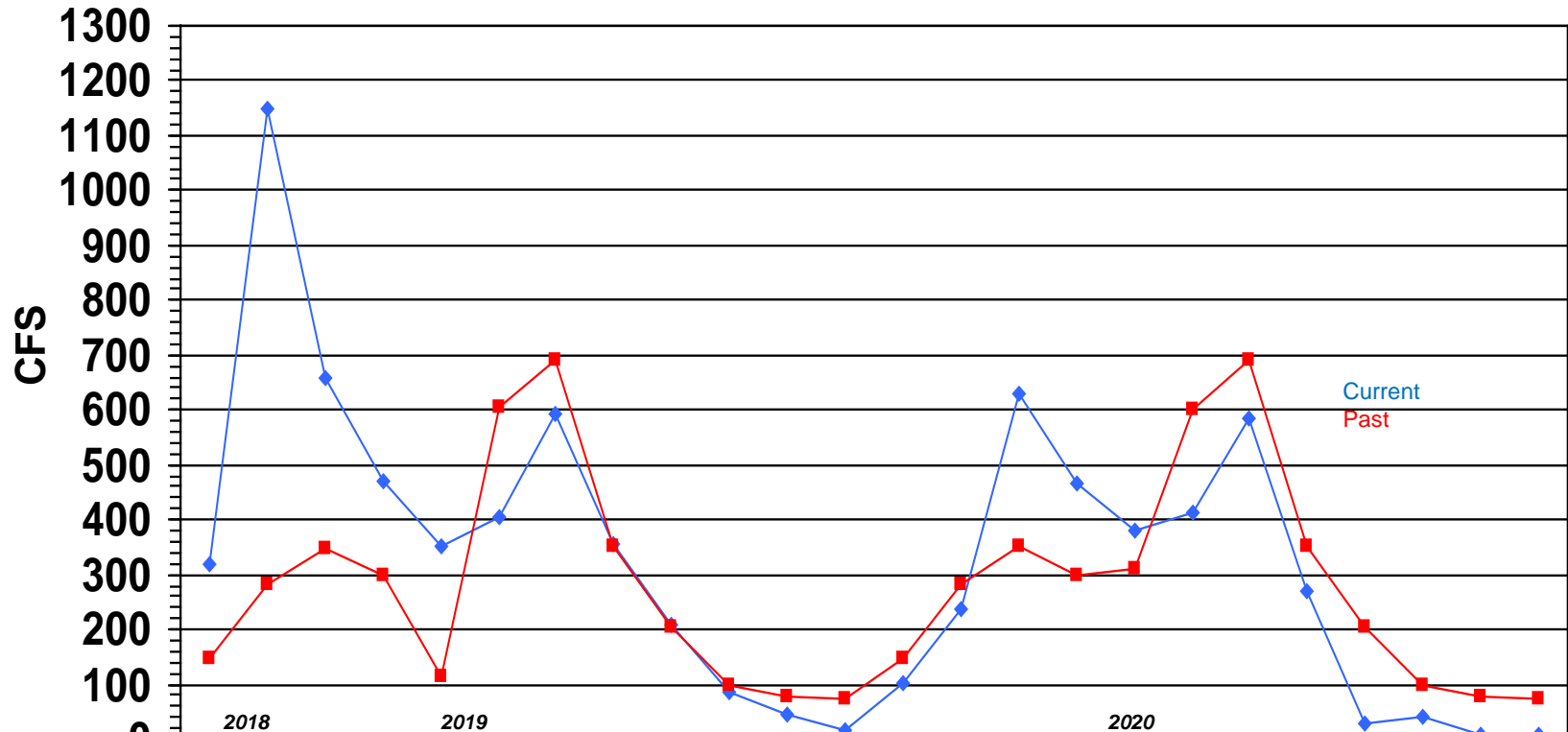
		2019			2020								
		OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
<u>Coastal drainage</u>													
STRAFFORD	actual	6.29	3.00	6.81	2.51	3.25	2.93	5.66	1.85	3.66	2.30	2.12	1.21
	normal	4.38	4.50	3.76	3.21	3.41	4.16	4.22	4.36	4.16	3.99	3.73	3.74
	deviation	1.91	-1.50	3.05	-0.70	-0.16	-1.23	1.44	-2.51	-0.50	-1.69	-1.61	-2.53
ROCKINGHAM	actual	5.57	2.83	6.57	2.06	3.01	3.13	5.32	1.59	2.34	2.48	1.89	1.58
	normal	4.34	4.30	3.74	3.27	3.41	4.19	4.19	4.10	4.10	3.77	3.54	3.76
	deviation	1.23	-1.47	2.83	-1.21	-0.40	-1.06	1.13	-2.51	-1.76	-1.29	-1.65	-2.18
Average	actual	5.93	2.92	6.69	2.29	3.13	3.03	5.49	1.72	3.00	2.39	2.01	1.40
	normal	4.36	4.40	3.75	3.24	3.41	4.18	4.21	4.23	4.13	3.88	3.64	3.75
	deviation	1.57	-1.49	2.94	-0.96	-0.28	-1.15	1.29	-2.51	-1.13	-1.49	-1.63	-2.36
<u>Southern Interior</u>													
HILLSBOROUGH	actual	5.59	3.02	6.54	1.91	3.40	3.40	5.69	1.40	2.26	3.70	2.17	1.33
	normal	4.46	4.21	3.80	3.38	3.40	3.94	4.13	4.10	4.22	3.97	3.76	3.74
	deviation	1.13	-1.19	2.74	-1.47	0.00	-0.54	1.56	-2.70	-1.96	-0.27	-1.59	-2.41
MERRIMACK	actual	5.56	3.62	5.88	2.23	3.36	3.16	5.28	1.45	3.21	3.08	2.57	1.19
	normal	4.43	4.15	3.64	3.26	3.20	3.73	3.95	4.02	4.34	4.11	3.76	3.76
	deviation	1.13	-0.53	2.24	-1.03	0.16	-0.57	1.33	-2.57	-1.13	-1.03	-1.19	-2.57
BELKNAP	actual	5.38	3.44	5.80	2.43	3.02	3.05	5.06	1.72	3.87	2.81	2.41	1.29
	normal	4.49	4.03	3.58	3.08	3.14	3.58	3.76	3.95	4.25	4.08	3.78	3.65
	deviation	0.89	-0.59	2.22	-0.65	-0.12	-0.53	1.30	-2.23	-0.38	-1.27	-1.37	-2.36
Average	actual	5.51	3.36	6.07	2.19	3.26	3.20	5.34	1.52	3.11	3.20	2.38	1.27
	normal	4.46	4.13	3.67	3.24	3.25	3.75	3.95	4.02	4.27	4.05	3.77	3.72
	deviation	1.05	-0.77	2.40	-1.05	0.01	-0.55	1.40	-2.50	-1.16	-0.86	-1.38	-2.45
<u>South Western</u>													
CHESHIRE	actual	6.66	2.84	6.02	1.92	3.21	3.31	5.40	1.47	2.29	5.07	2.40	2.17
	normal	4.60	3.98	3.68	3.41	3.28	3.73	3.79	4.10	4.20	4.36	4.06	3.83
	deviation	2.06	-1.14	2.34	-1.49	-0.07	-0.42	1.61	-2.63	-1.91	0.71	-1.66	-1.66
SULLIVAN	actual	6.30	2.25	4.78	1.93	3.03	3.00	5.37	1.35	2.62	3.32	3.70	1.98
	normal	4.51	3.85	3.49	3.08	3.11	3.51	3.66	3.92	4.17	4.36	4.06	3.80
	deviation	1.79	-1.60	1.29	-1.15	-0.08	-0.51	1.71	-2.57	-1.55	-1.04	-0.36	-1.82
Average	actual	6.48	2.55	5.40	1.93	3.12	3.16	5.39	1.41	2.46	4.20	3.05	2.08
	normal	4.56	3.92	3.59	3.25	3.20	3.62	3.73	4.01	4.19	4.36	4.06	3.82
	deviation	1.93	-1.37	1.82	-1.32	-0.08	-0.47	1.66	-2.60	-1.73	-0.17	-1.01	-1.74
<u>White Mountain</u>													
GRAFTON	actual	5.89	3.04	4.45	2.43	3.23	2.99	5.87	2.10	2.94	3.66	2.64	1.97
	normal	4.68	4.35	3.70	3.19	2.94	3.46	3.76	4.20	4.59	4.56	4.60	4.09
	deviation	1.21	-1.31	0.75	-0.76	0.29	-0.47	2.11	-2.10	-1.65	-0.90	-1.96	-2.12
CARROLL	actual	6.63	3.47	5.83	3.20	3.96	3.40	7.40	2.15	3.94	3.42	2.98	1.62
	normal	4.95	4.72	4.17	3.57	3.44	4.02	4.46	4.32	4.49	4.40	4.43	3.98
	deviation	1.68	-1.25	1.66	-0.37	0.52	-0.62	2.94	-2.17	-0.55	-0.98	-1.45	-2.36
Average	actual	6.26	3.26	5.14	2.82	3.60	3.20	6.64	2.13	3.44	3.54	2.81	1.80
	normal	4.82	4.54	3.94	3.38	3.19	3.74	4.11	4.26	4.54	4.48	4.52	4.04
	deviation	1.45	-1.28	1.21	-0.57	0.41	-0.55	2.53	-2.14	-1.10	-0.94	-1.71	-2.24
<u>North Country</u>													
COOS	actual	7.00	2.98	3.03	3.09	2.87	3.05	4.68	3.28	4.16	5.10	2.93	2.06
	normal	4.52	4.24	3.58	3.09	2.82	3.21	3.62	4.21	4.79	4.57	4.85	4.00
	deviation	2.48	-1.26	-0.55	0.00	0.05	-0.16	1.06	-0.93	-0.63	0.53	-1.92	-1.94

# LAMPREY RIVER near NEWMARKET NH

## Gage# 01073500



### MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS



	2018			2019							2020													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
◆ Monthly Mean Flow	317	1,148	660	471	353	405	592	356	209	84	45	18	104	236	630	465	381	414	585	270	29.7	41	8	7
■ Mean of Monthly Flow s	147	283	349	298	113	603	691	351	206	99	78	75	146	282	352	299	311	601	689	350	204	99	78	74
% of Normal	216%	406%	189%	158%	312%	67%	86%	101%	101%	85%	58%	24%	71%	84%	179%	155%	123%	69%	85%	77%	15%	41%	10%	9%

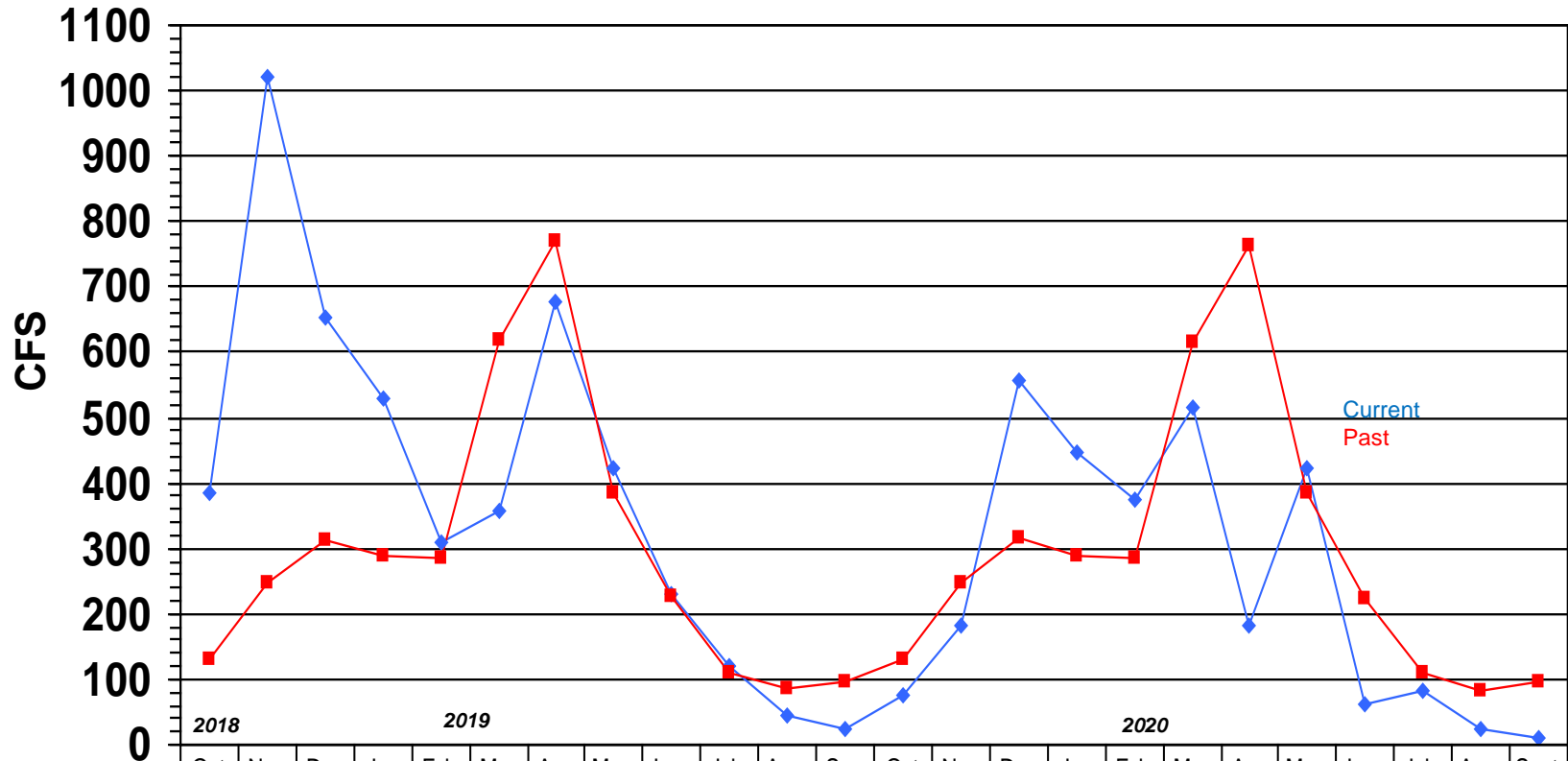


# SOUHEGAN RIVER at MERRIMACK NH

## Gage# 01094000



### MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS

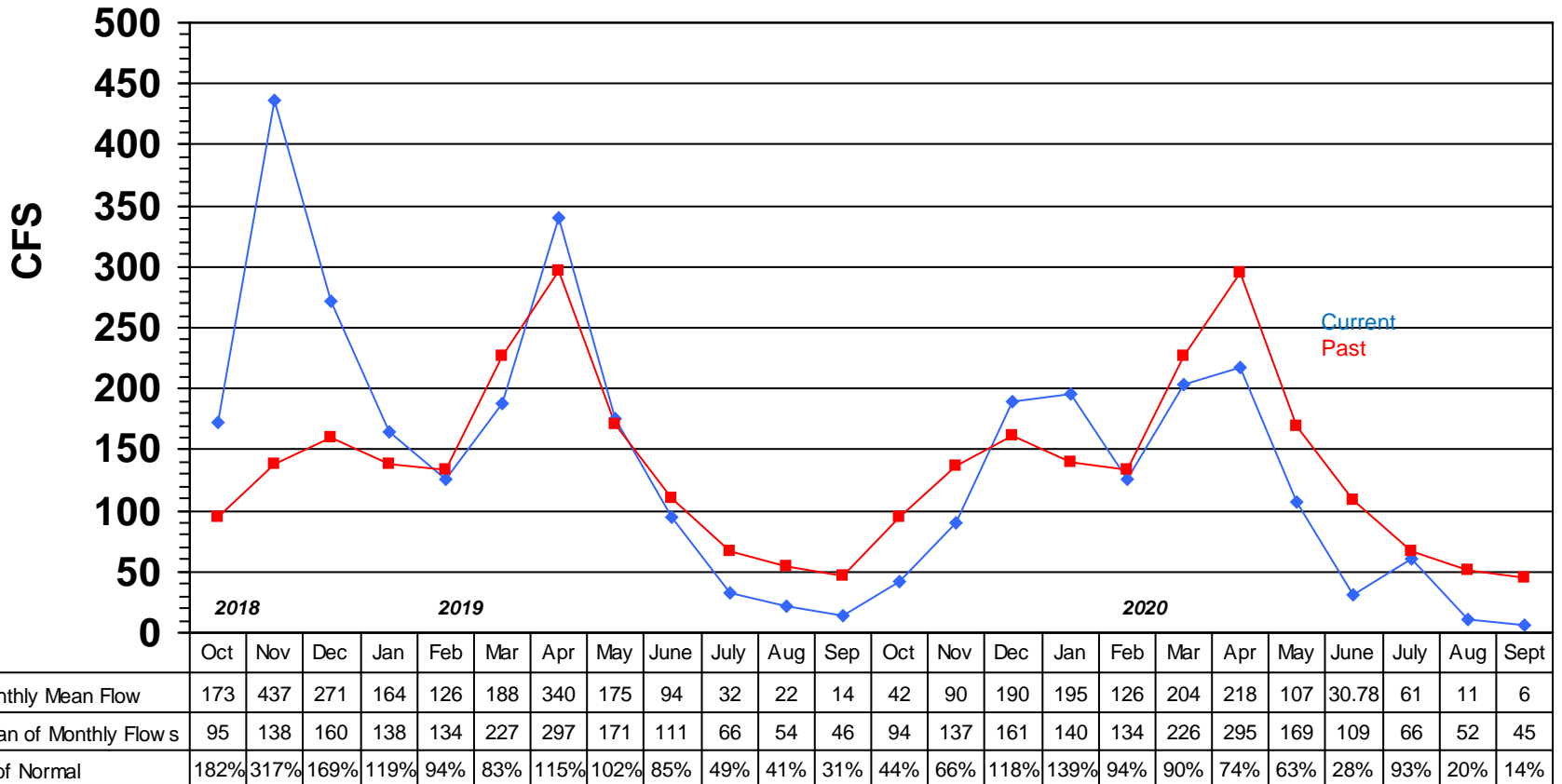


	2018	2019					2020																	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
◆ Monthly Mean Flow	386	1,022	653	528	311	358	676	422	229	120	46	25	76	182	556	447	374	515	182	422	61.3	82	25	12
■ Mean of Monthly Flow s	132	247	314	288	285	618	769	386	226	111	85	96	131	246	317	290	286	617	762	386	224	111	84	95
% of Normal	292%	414%	208%	183%	109%	58%	88%	109%	101%	108%	54%	26%	58%	74%	175%	154%	131%	83%	24%	109%	27%	74%	30%	13%

# SOUCOOK RIVER at PEMBROKE ROAD near CONCORD NH, Gage# 01089100



## MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS

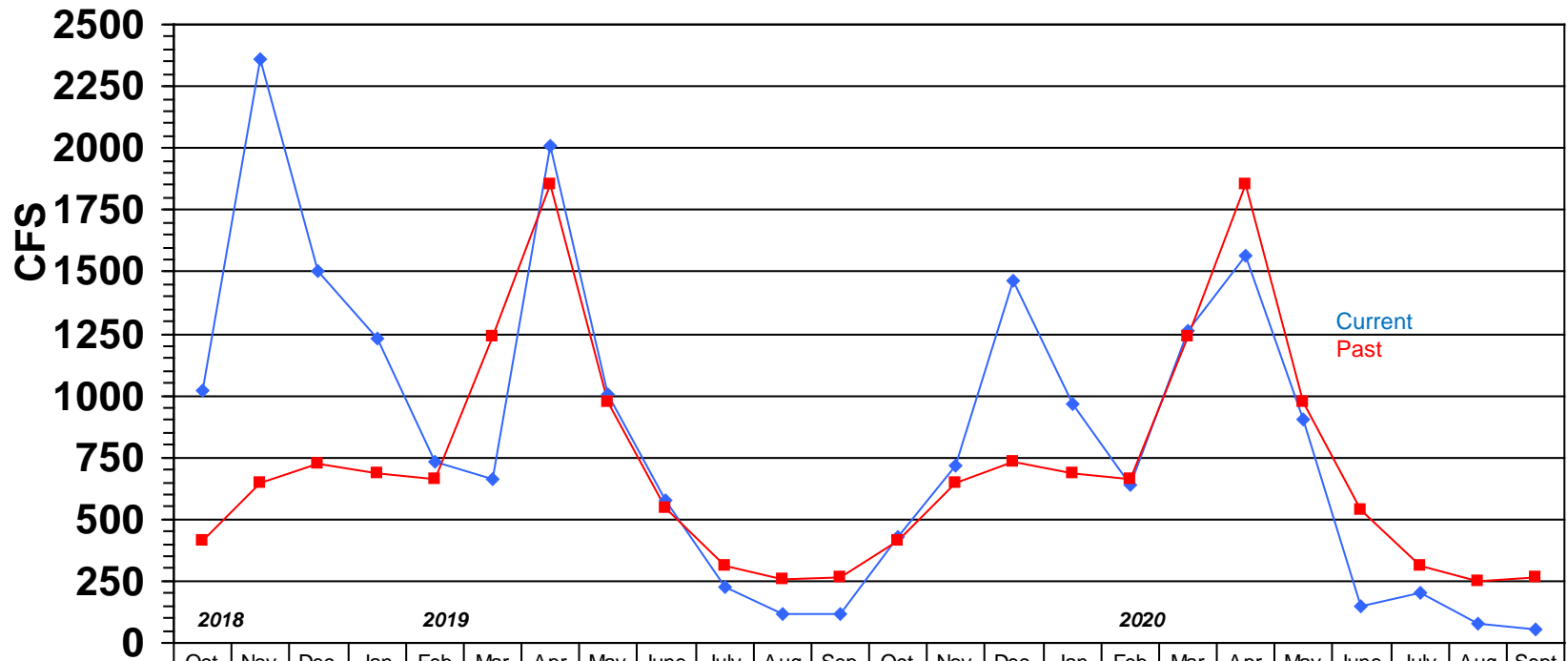


# ASHUELOT RIVER at HINSDALE NH

## Gage# 01161000



### MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS



	2018	2019					2020																	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
◆ Monthly Mean Flow	1022	2,363	1506	1229	734	661	2010	1003	579	226	115	120	426	715	1466	966	635	1258	1566	906	146	203	77	53
■ Mean of Monthly Flow s	412	648	723	685	661	1235	1853	977	543	309	255	267	412	648	730	688	661	1235	1851	977	539	308	253	265
% of Normal	248%	365%	208%	179%	111%	53%	108%	103%	107%	73%	45%	45%	103%	110%	201%	140%	96%	102%	85%	93%	27%	66%	30%	20%

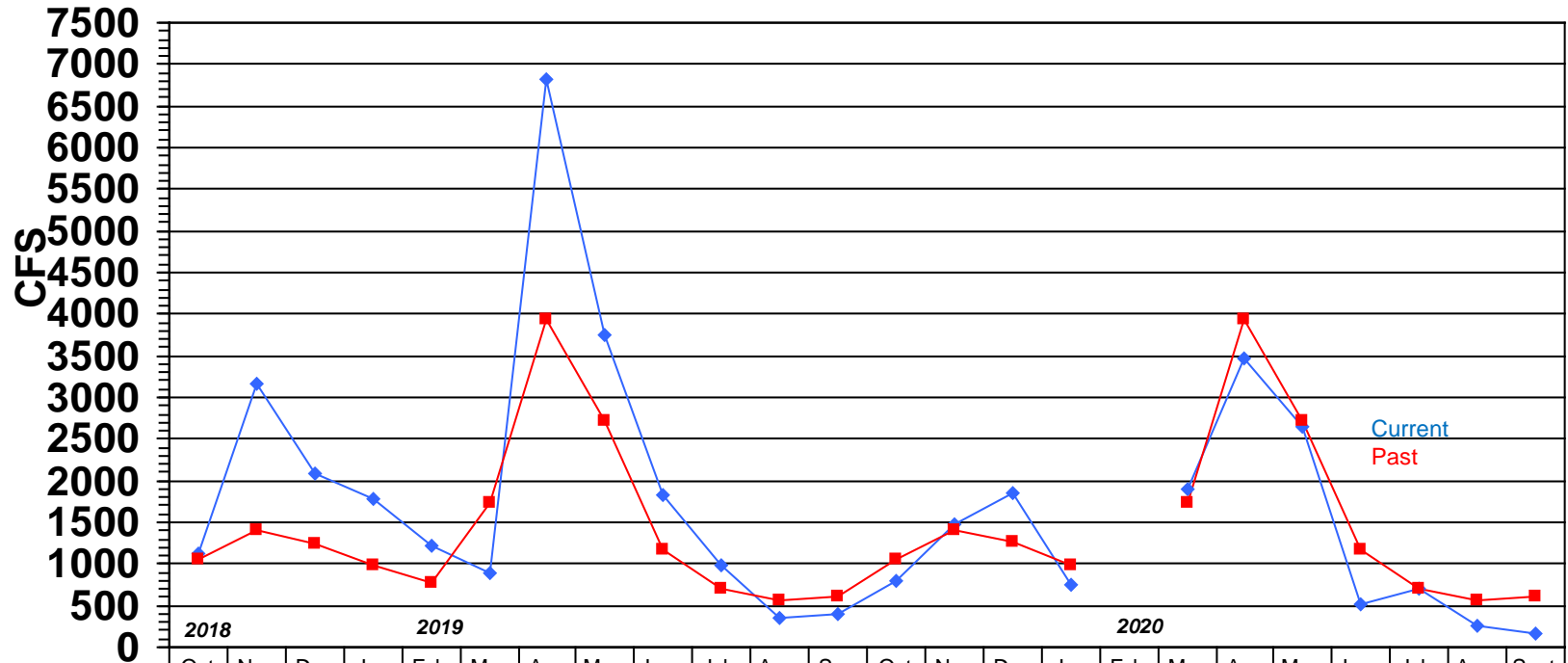
Start of record 1907

# PEMIGEWASSET RIVER at PLYMOUTH NH

## Gage# 01076500



### MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS



	2018			2019									2020											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
◆ Monthly Mean Flow	1118	3,167	2084	1777	1209	881	6820	3755	1827	975	345	396	803	1,475	1849	758		1892	3468	2656	516	707	248	166
■ Mean of Monthly Flow s	1057	1,397	1251	981	782	1742	3933	2730	1179	698	565	603	1055	1398	1256	979	ICE	1743	3929	2729	1174	698	562	599
% of Normal	106%	227%	167%	181%	155%	51%	173%	137%	155%	140%	61%	66%	76%	105%	147%	77%		109%	88%	97%	44%	101%	44%	28%

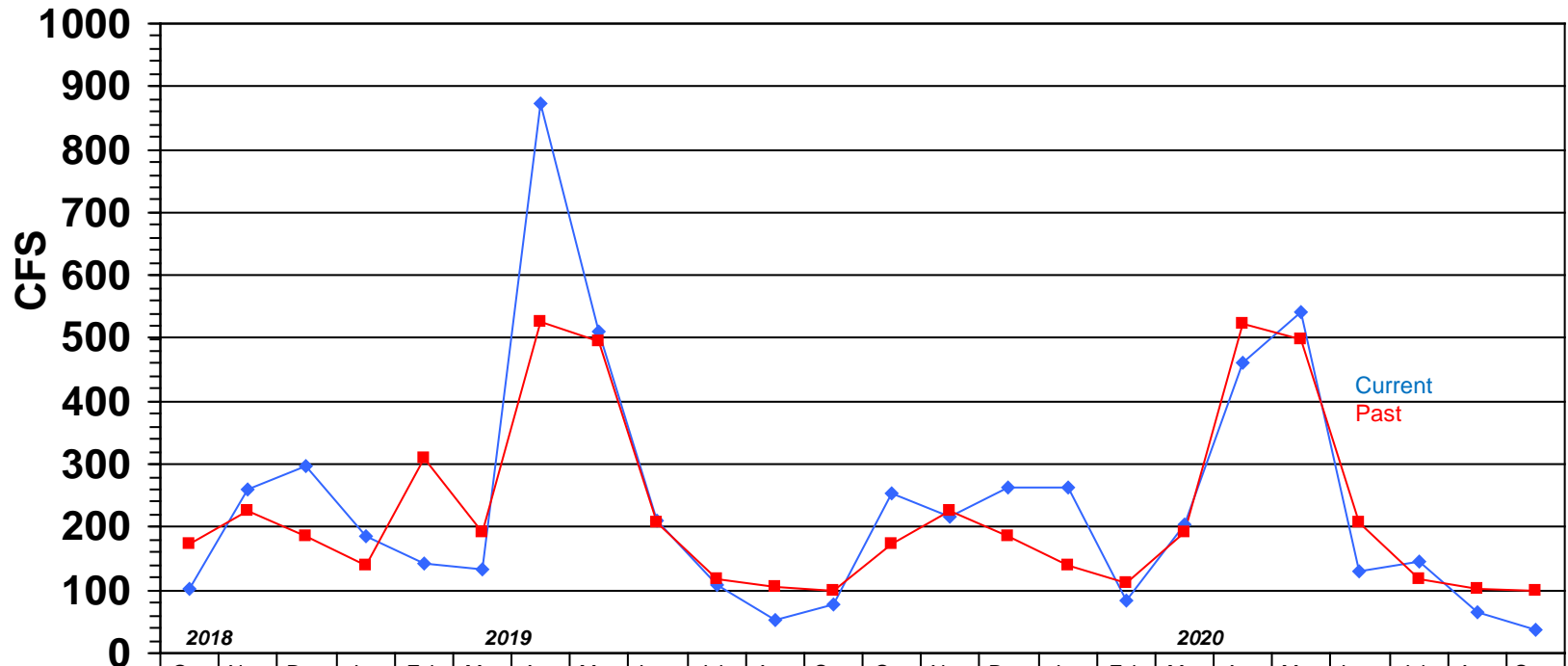
Start of record 1903

# AMMONOOSUC RIVER at BETHLEHEM JUNCTION NH

## Gage# 01137500



### MONTHLY MEAN FLOW COMPARED TO MEAN OF MONTHLY FLOWS



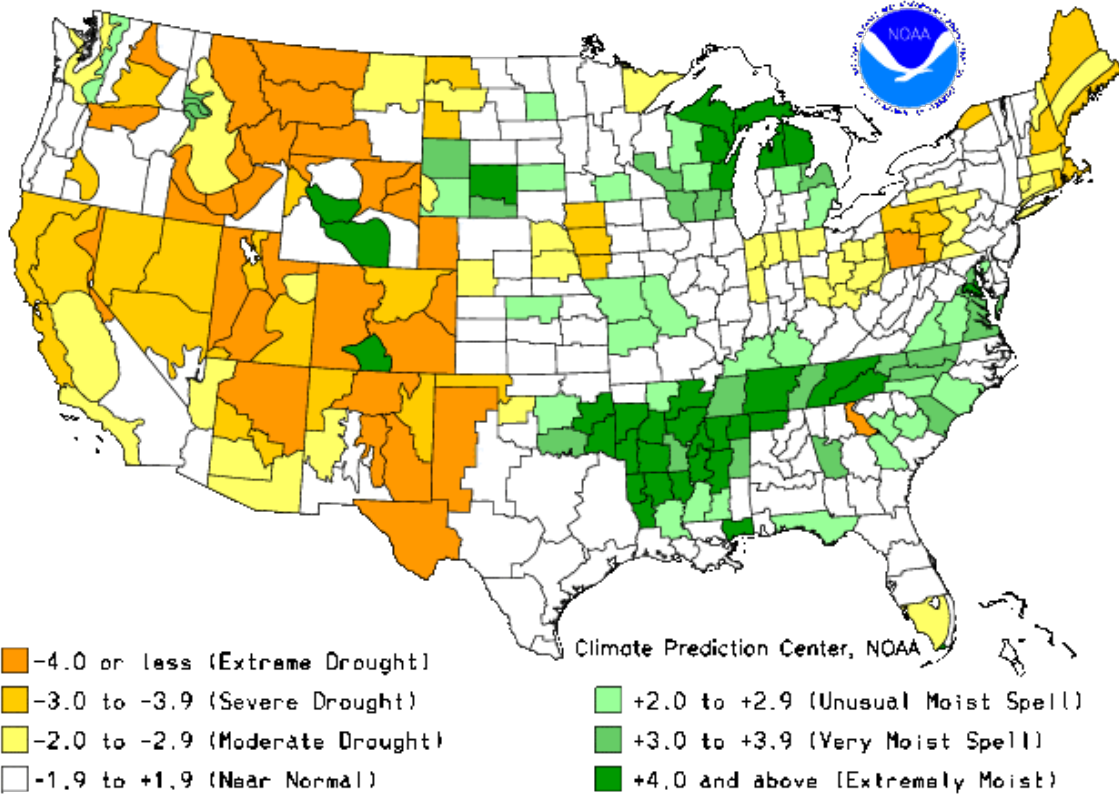
	2018			2019									2020											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
◆ Monthly Mean Flow	101	259	297	185	141	134	872	510	211	109	53	76	255	218	263	264	84	205	460	541	129.5	146	64	36
■ Mean of Monthly Flow s	172	226	186	138	310	191	525	496	208	118	104	100	173	226	187	140	113	191	524	497	207	119	103	99
% of Normal	59%	115%	160%	134%	45%	70%	166%	103%	101%	93%	51%	76%	147%	96%	141%	189%	74%	107%	88%	109%	63%	123%	62%	37%

Start of record 1939

## THE PALMER DROUGHT SEVERITY INDEX

The Palmer Index uses temperature and rainfall information in a formula to determine dryness. The advantage of the Palmer Index is that it is standardized to local climate.

Drought Severity Index by Division  
Weekly Value for Period Ending OCT 3, 2020  
Long Term Palmer



Additional Precip. Needed (In.) to Bring PDI to  $-0.5$   
Weekly Value for Period Ending OCT 3, 2020  
Long Term Palmer Drought Severity Index (PDI)

