

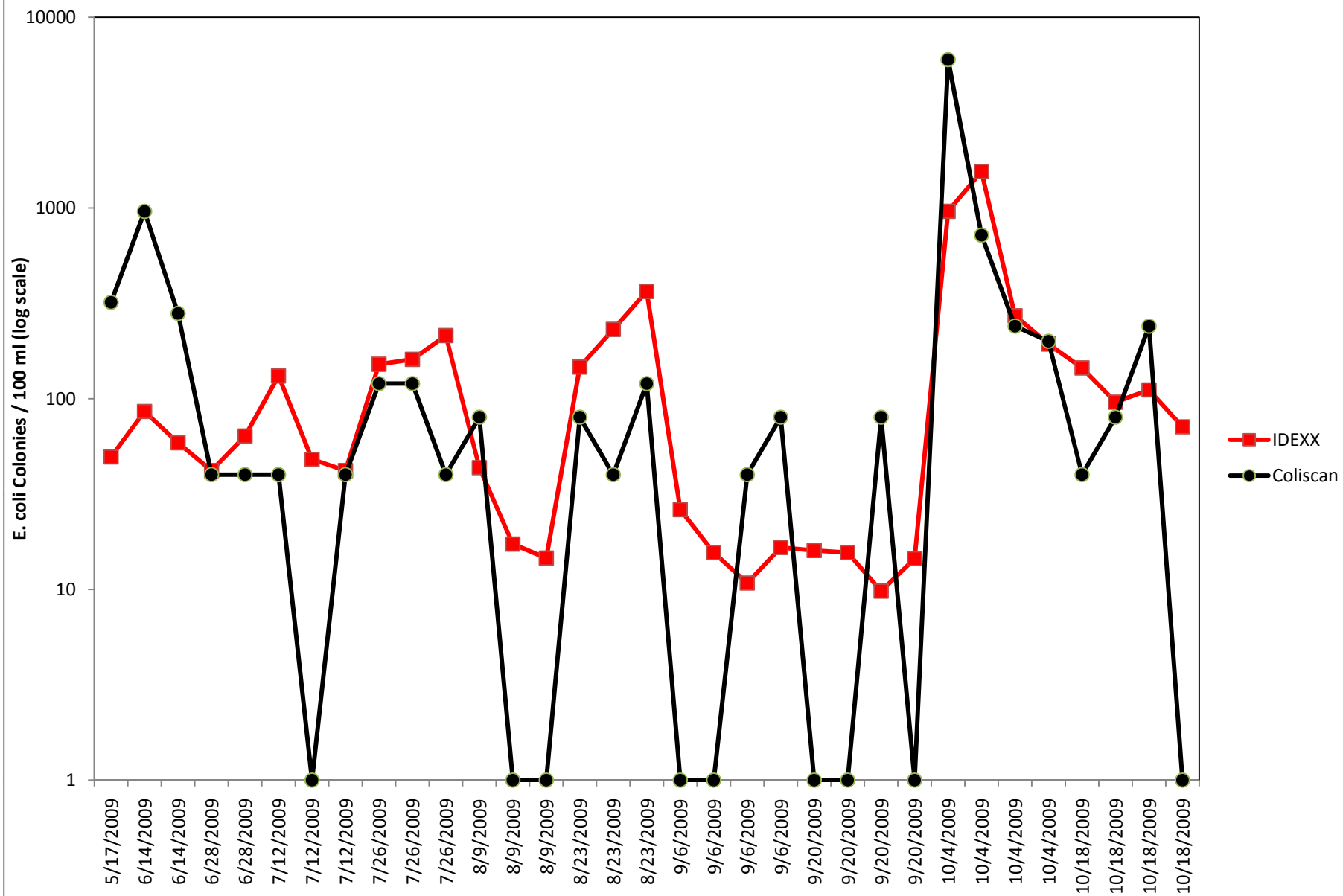
**Water Quality Data Analysis and Review  
Lower Androscoggin River**

**Final Graphs & Tables**

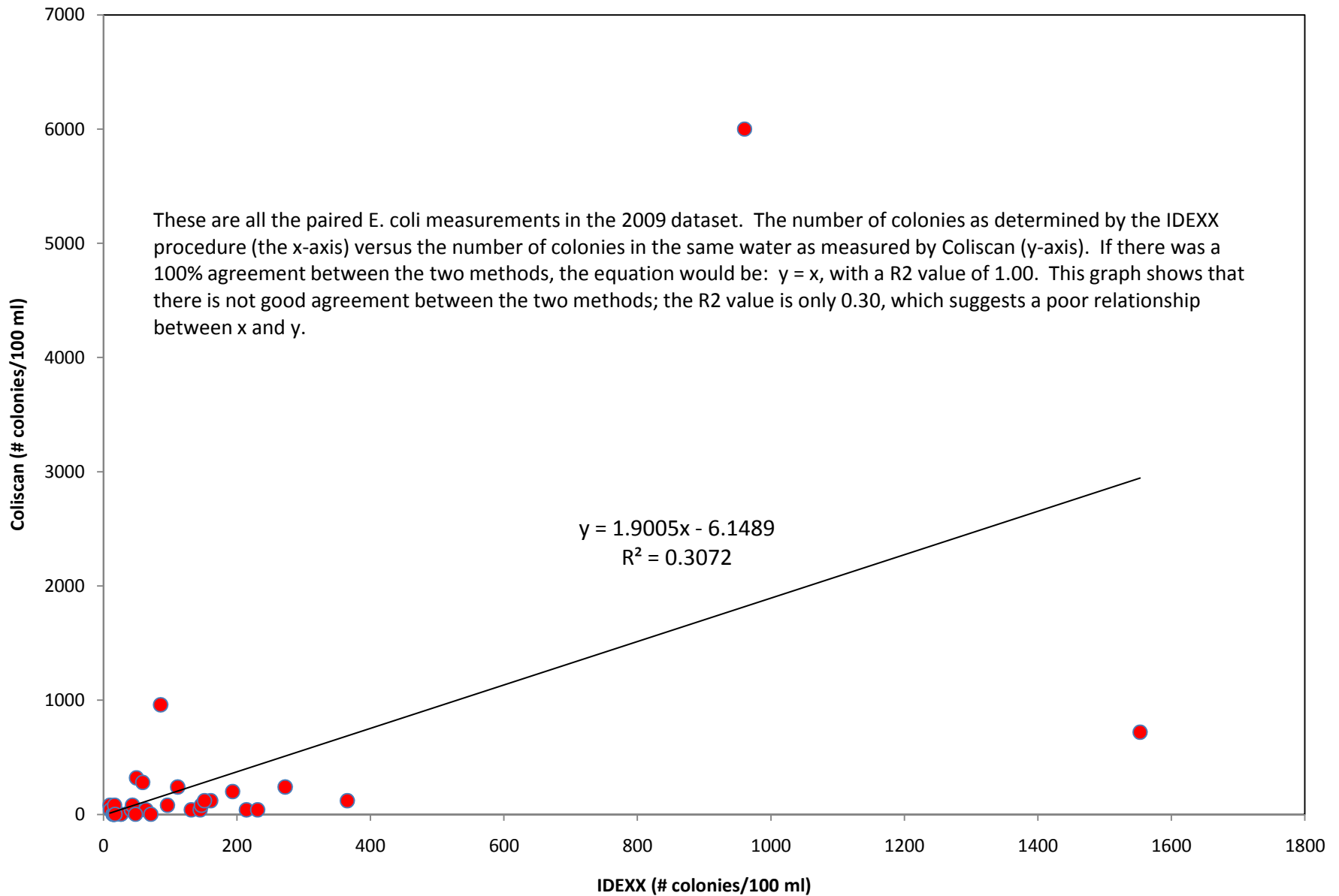
**February 8, 2010**

Prepared by:  
**Friends of Merrymeeting Bay &  
Applied Biomonitoring**

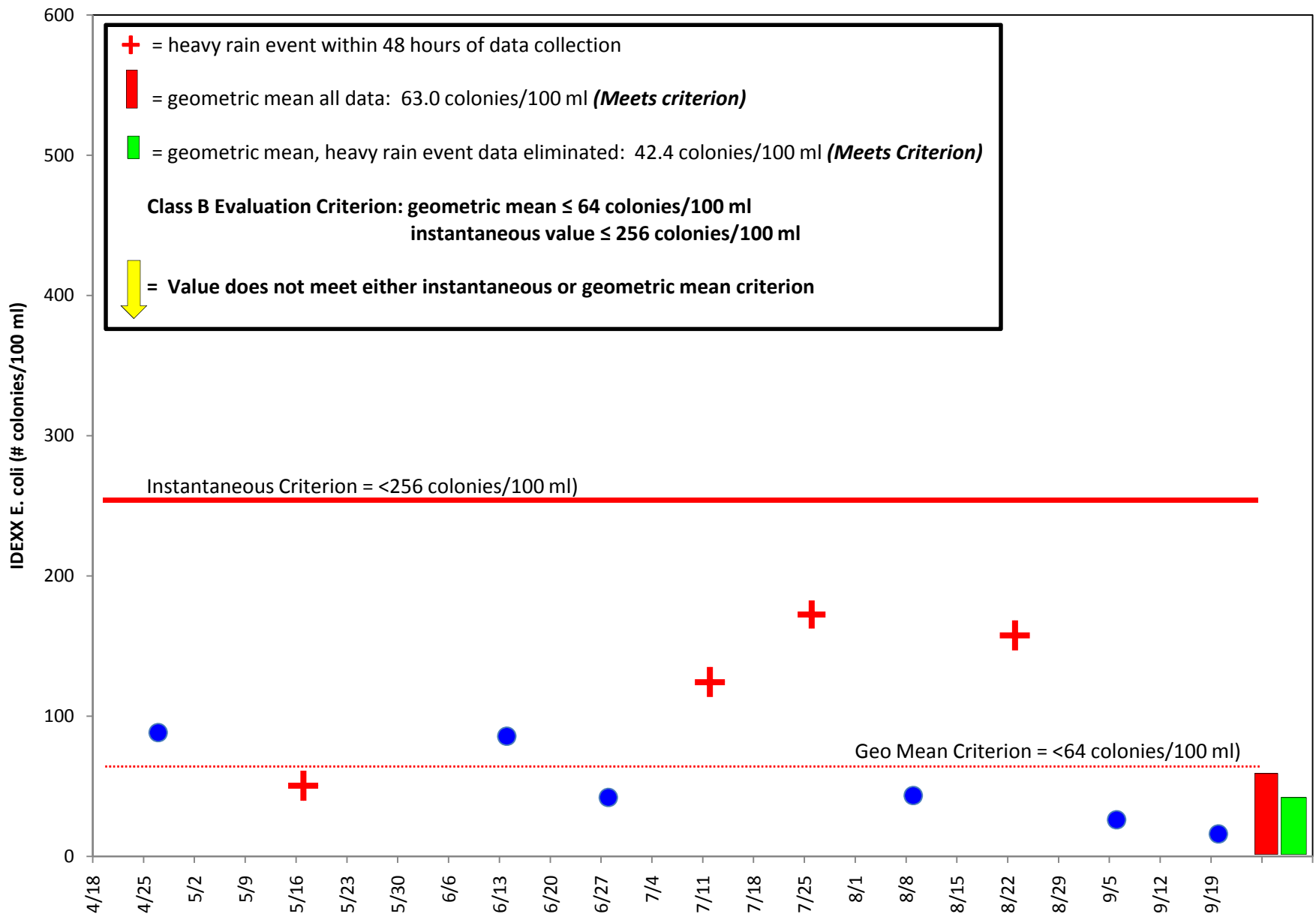
### Lower Androscoggin River 2009: IDEXX vs Coliscan (all data)



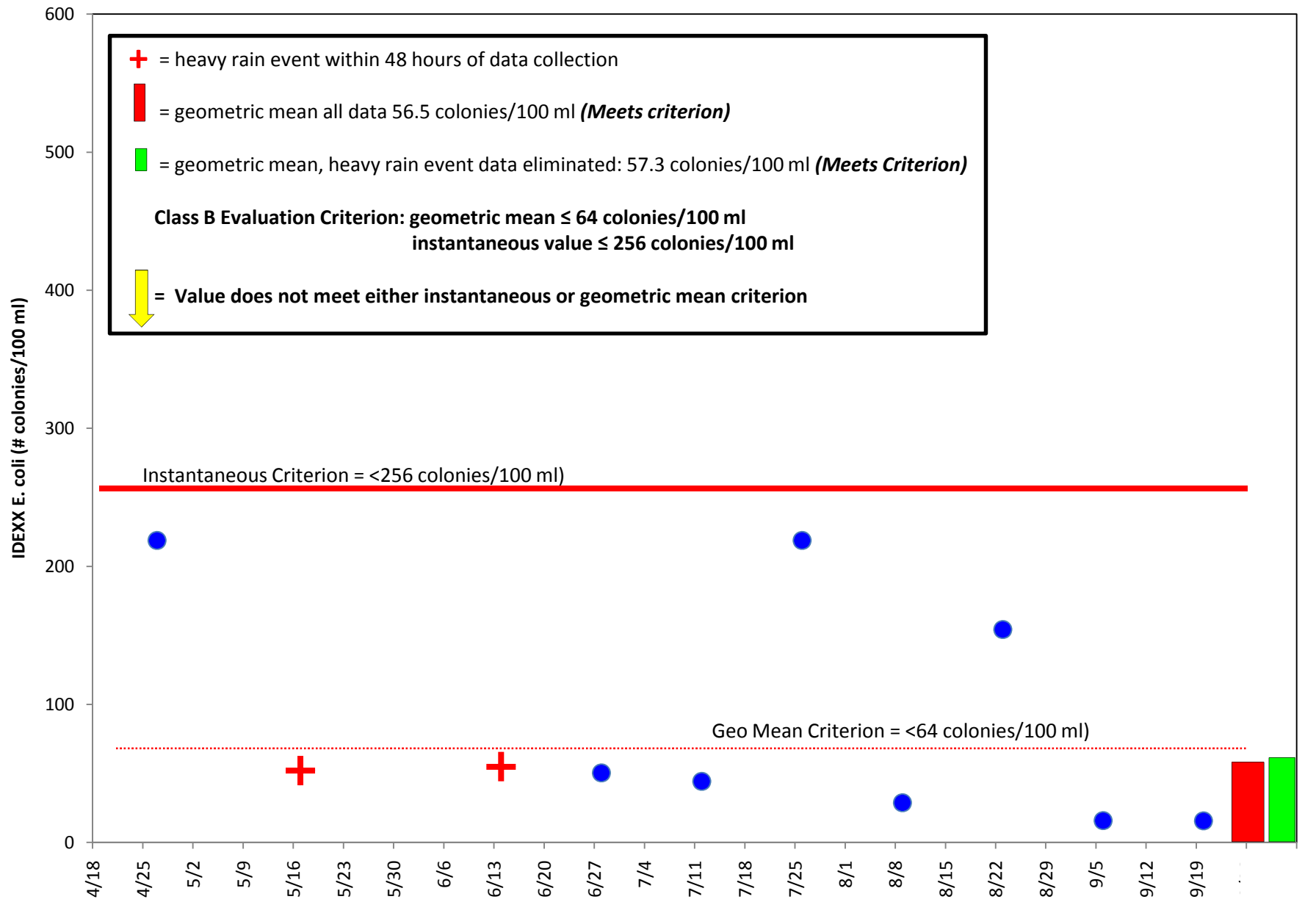
## Lower Androscoggin River 2009: E. coli data IDEXX vs Coliscan



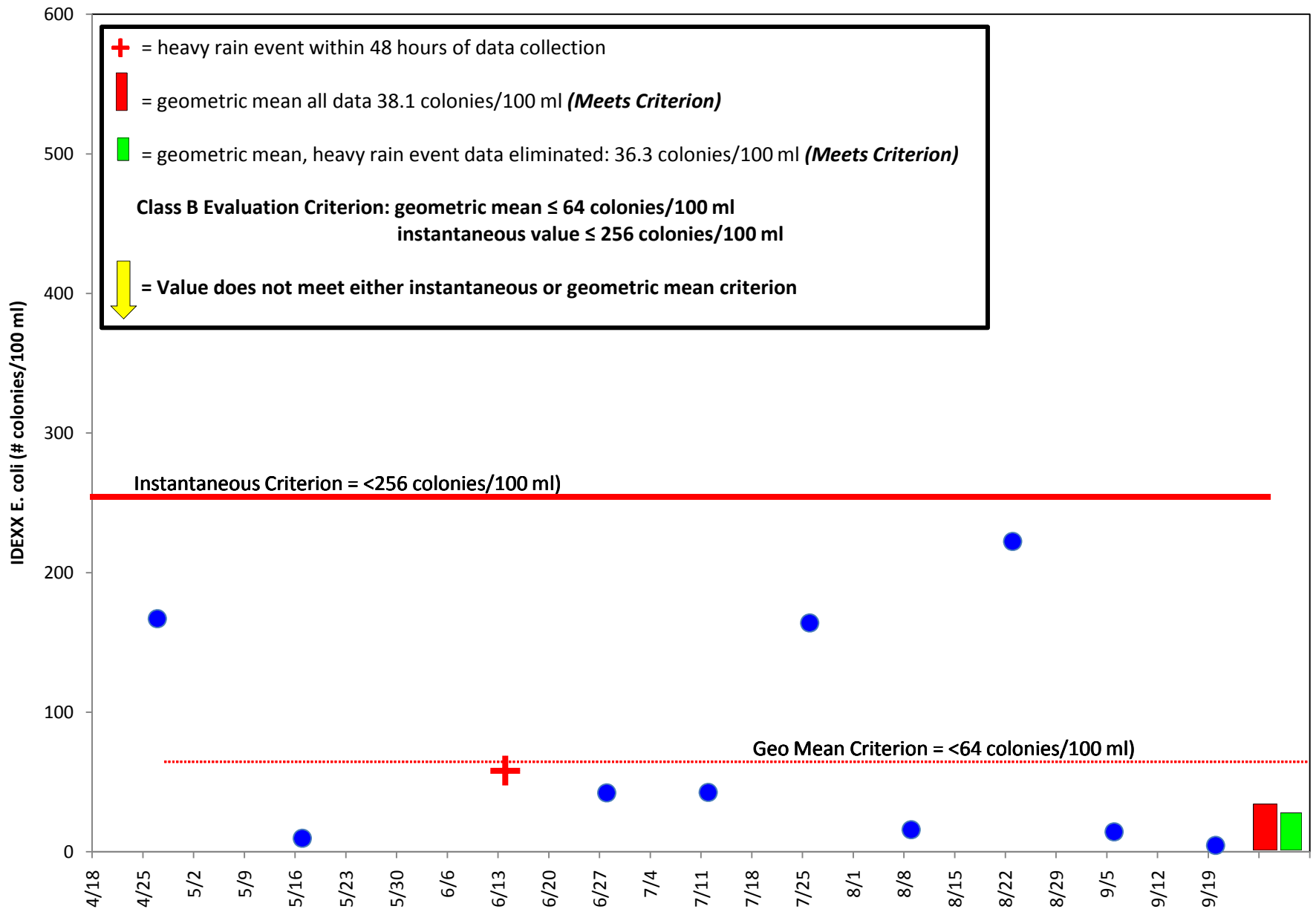
## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Durham Boat Launch (Apr - Sep)



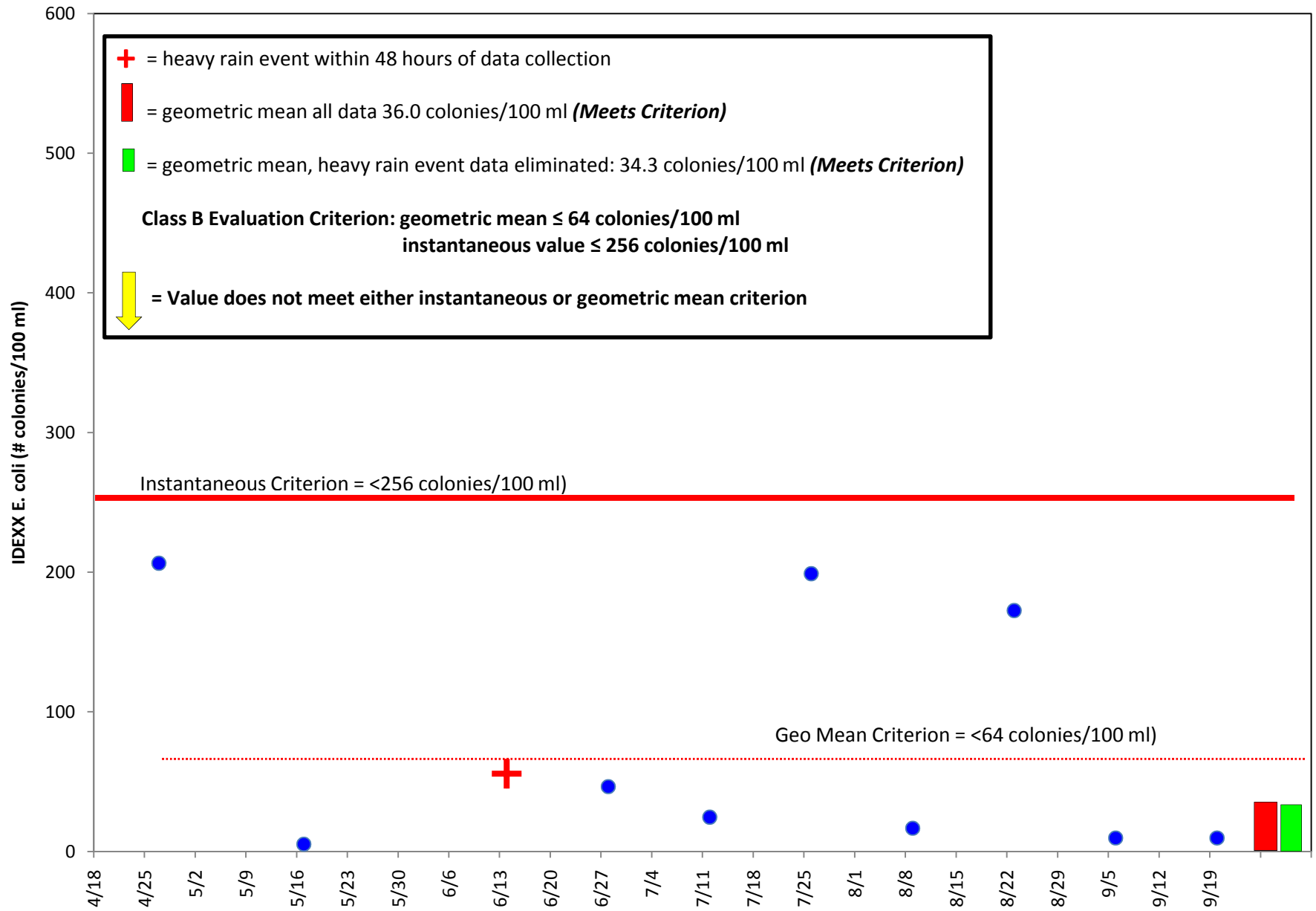
## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Pejepscot Boat Launch (Apr - Sep)



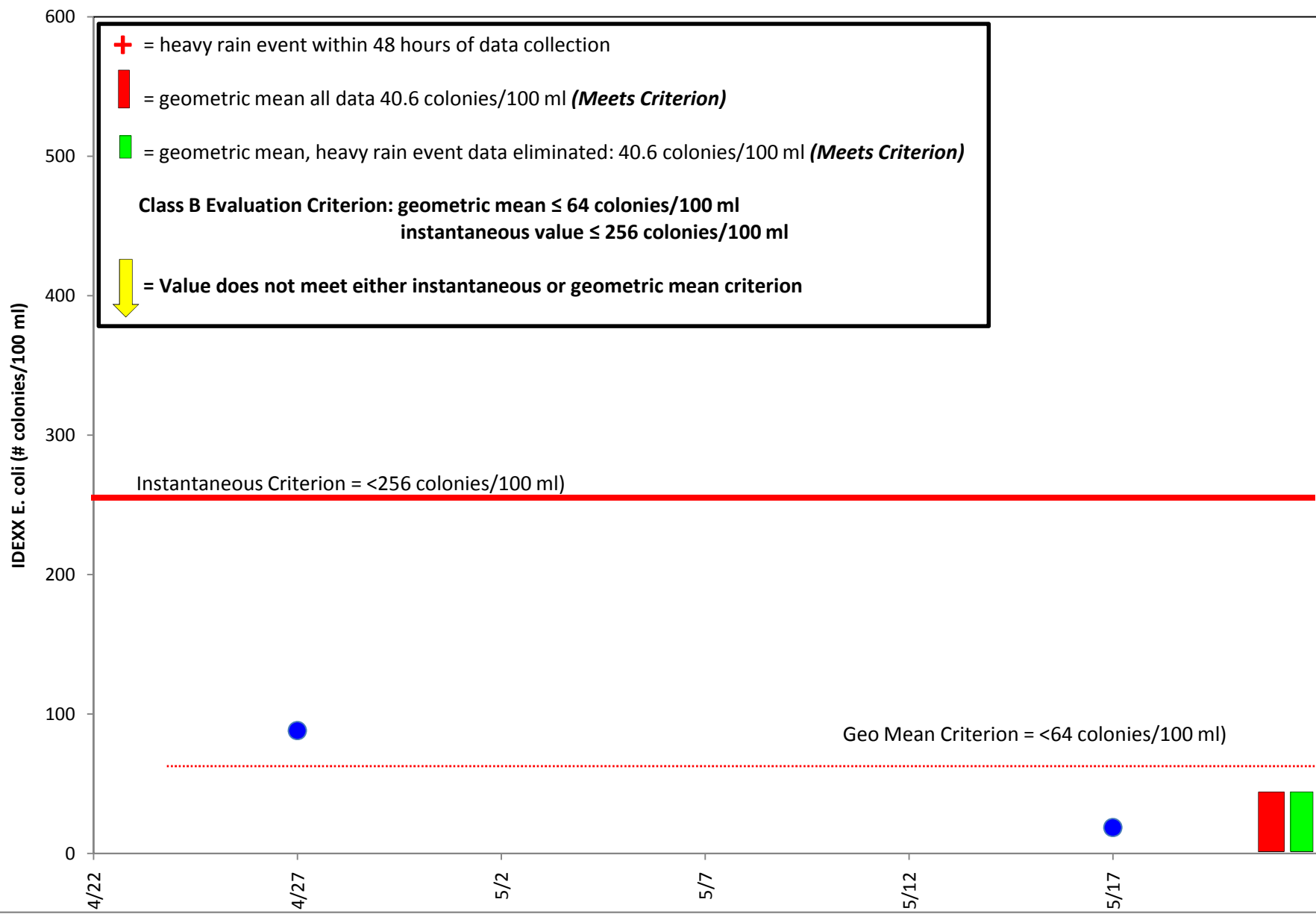
## Lower Androscoggin River 2009 E. coli (IDEXX) - Fish Park Above Dam (Apr - Sep)



## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Fish Park Below Dam (Apr - Sep)

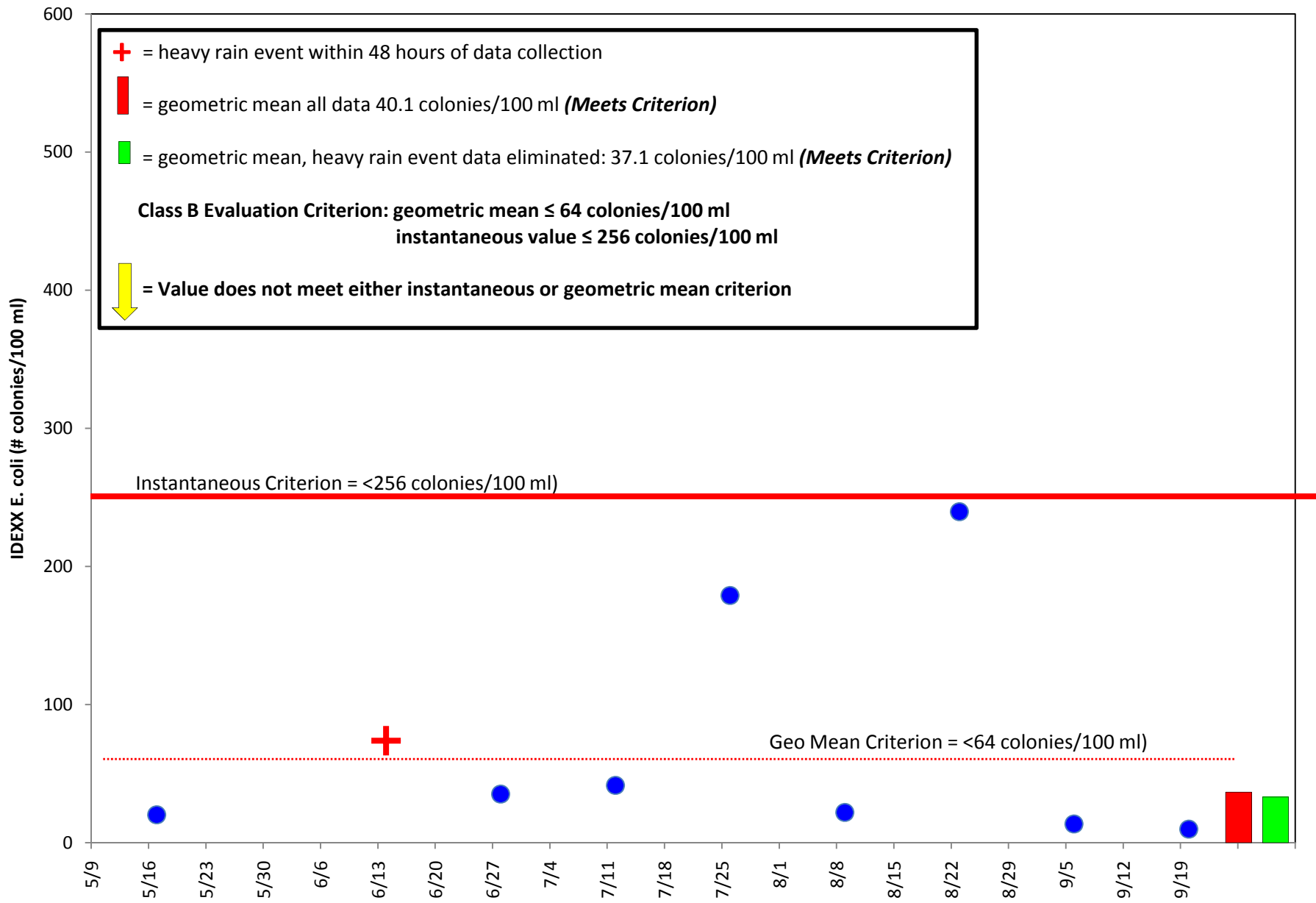


## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Brunswick Water Works (Apr - Sep)

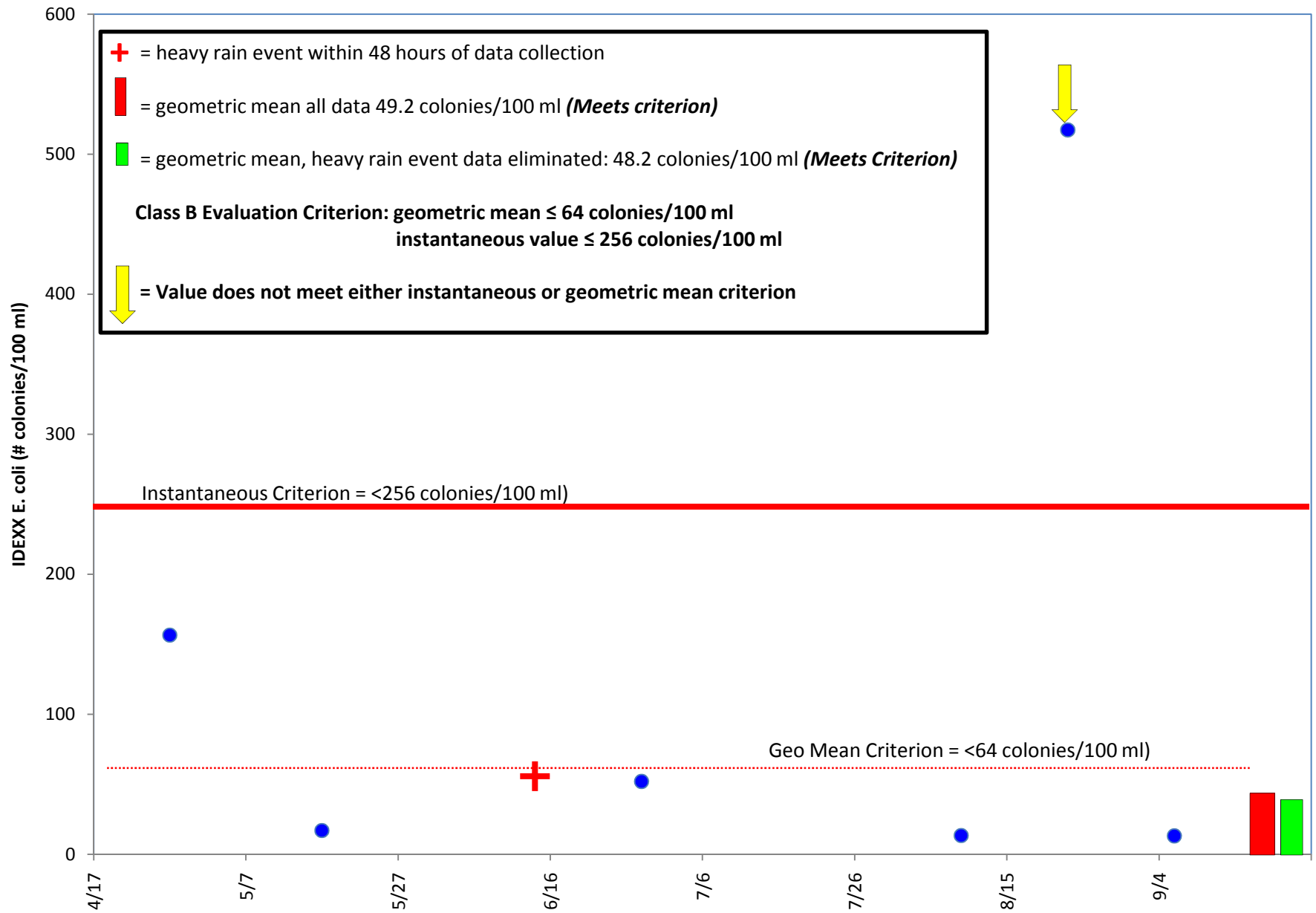




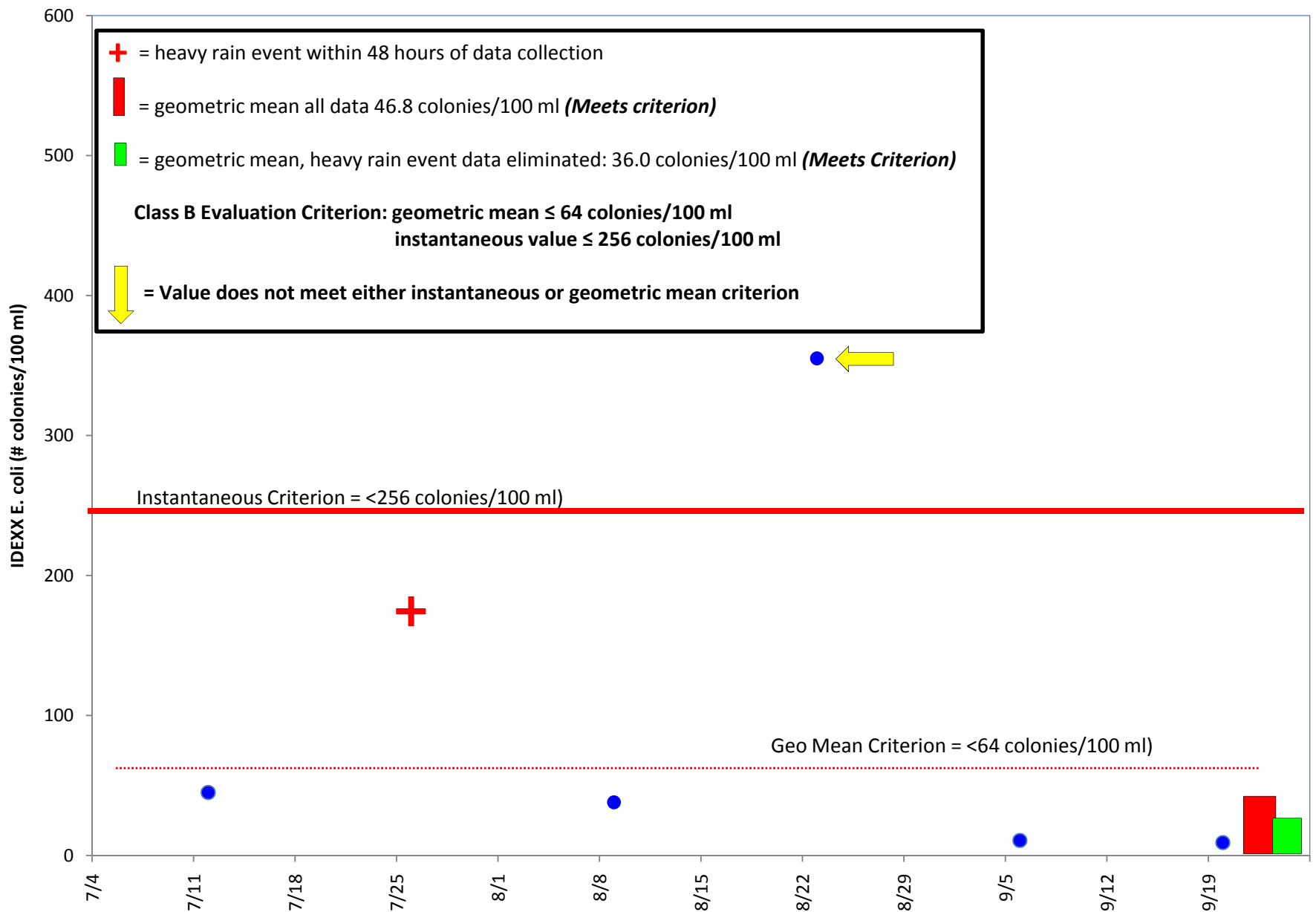
## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Brunswick Interstate Ledges (Apr - Sep)



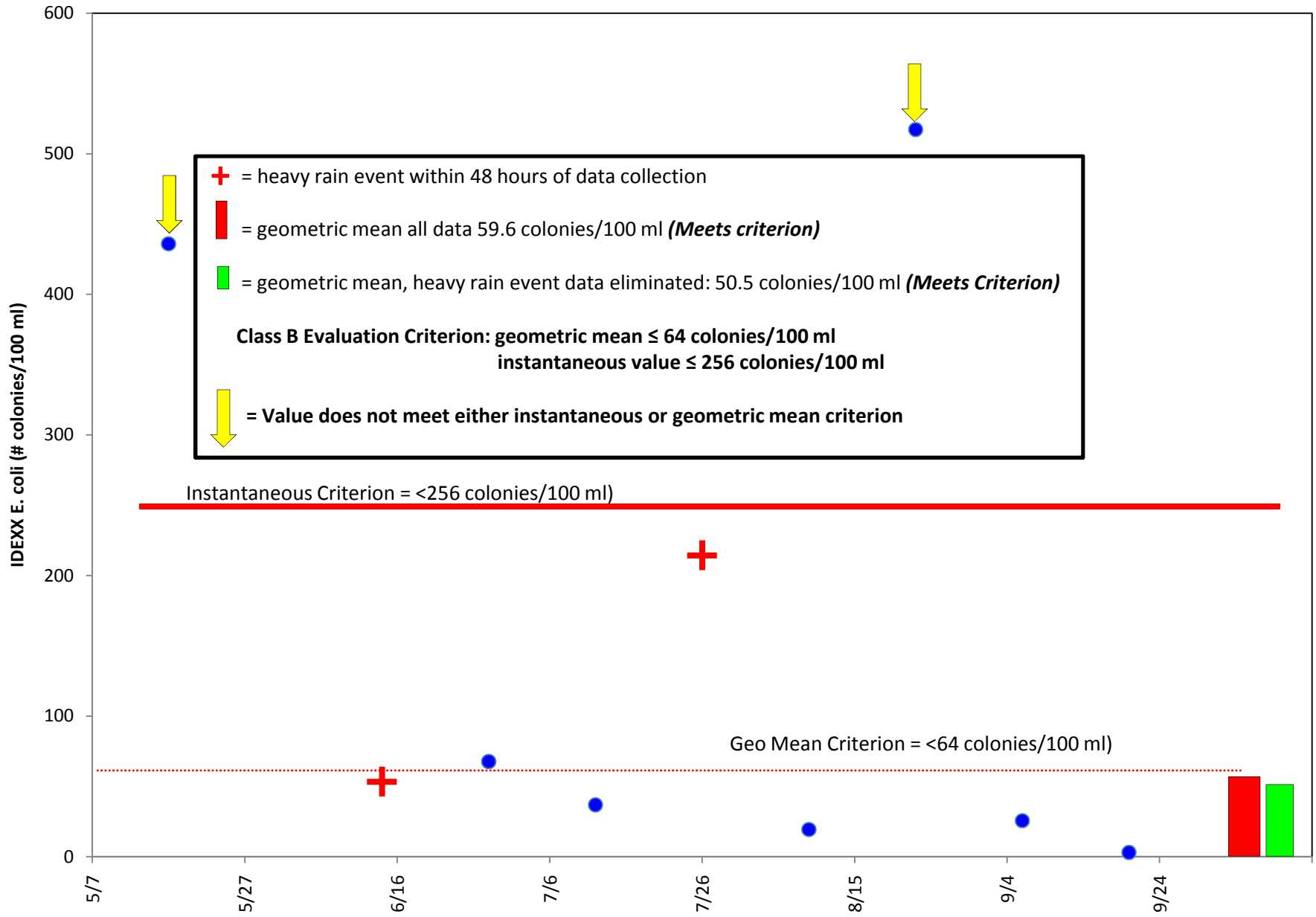
## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Brunswick Canoe Portage (Apr - Sep)



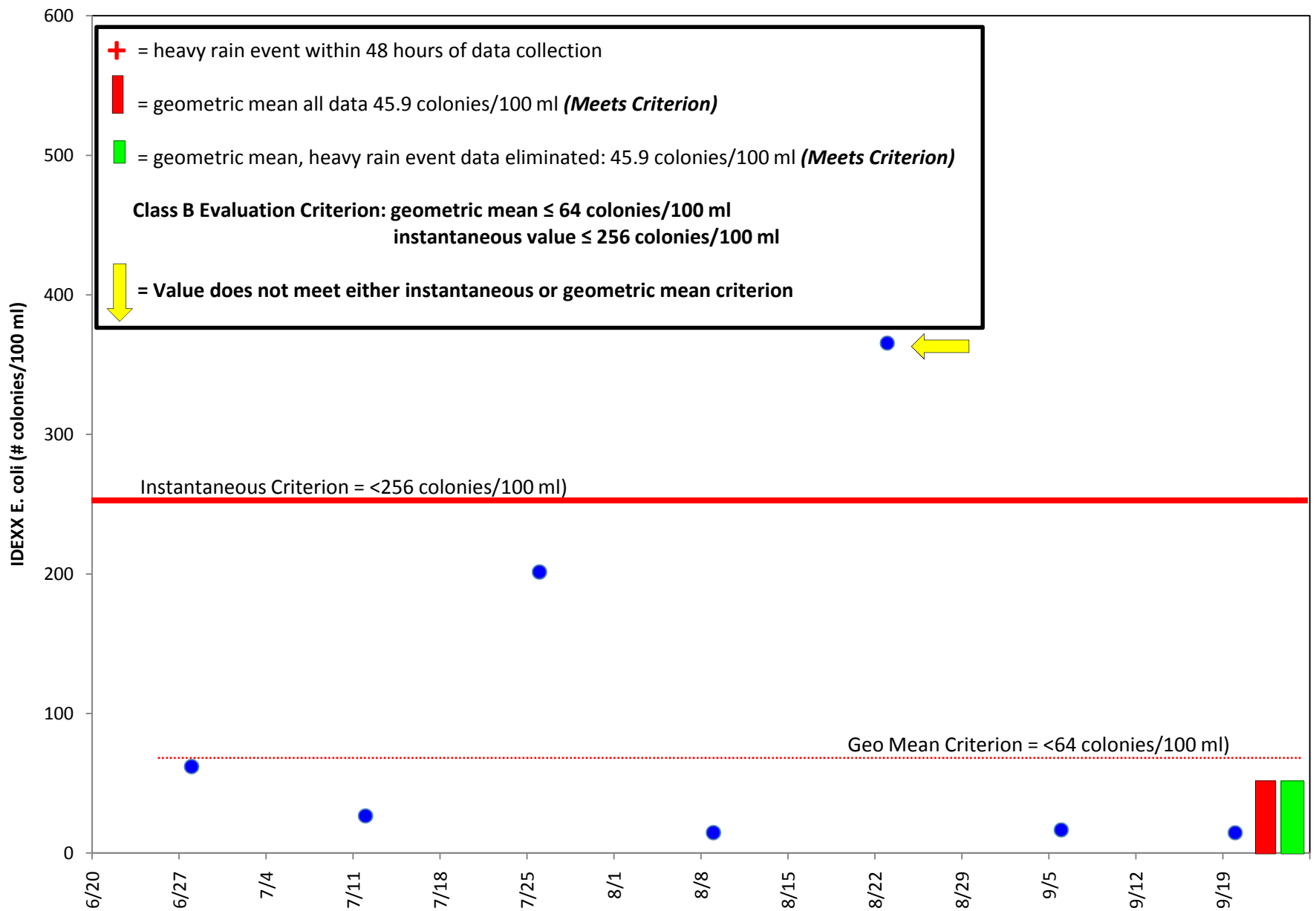
## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Brunswick Canoe Mooring (Apr - Sep)



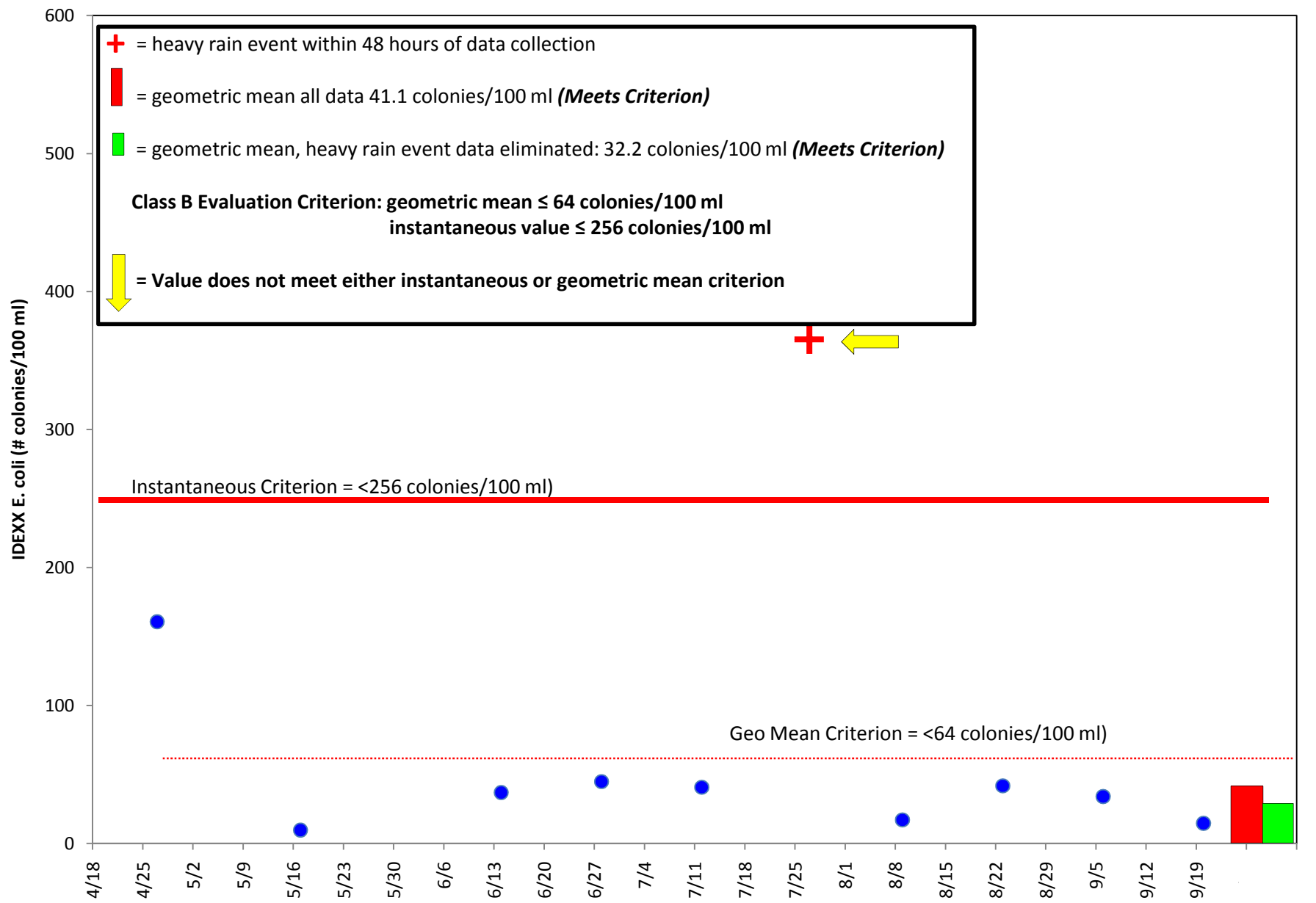
### Lower Androscoggin River 2009 *E. coli* (IDEXX) - Bruns Water St. Boat Launch (Apr - Sep)



## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Water St. Mooring (Apr - Sep)




## Lower Androscoggin River 2009 *E. coli* (IDEXX) - Brunswick Bay Bridge (Apr - Sep)



**Lower Androscoggin River 2009 E.coli**  
**Class B Criterion: geomean  $\leq$  64 colonies/ml; instantaneous  $\leq$  256 colonies/ml**  
 (\* = value not used; taken during heavy rain event)

<span style="background-color: yellow;">■</span> = does not meet criterion; out of compliance				IDEXX <i>E. coli</i> (colonies/100 ml)			Coliscan <i>E. coli</i> (colonies/100 ml)		Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	All Data (Mean of Reps)	Replicate Data	Heavy Rain Data Excluded	All Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Durham Boat Launch</b>											
4/27/2009	9:00 AM	overcast	P-low	88.25	83.3, 93.2	88.25					
5/17/2009	8:00 AM	dournour	P-heavy	50.4		*					
6/14/2009	8:10 AM	dournour	P-moderate	85.7		85.7	960	960			
6/28/2009	7:55 AM	overcast	P-low	42		42	40	40	16.5	18.5	
7/12/2009	8:00 AM	overcast	P-heavy	124.3	131.7, 116.9	*	40	*	16	17	heavy rain previous night
7/26/2009	7:35 AM	fog/haze	P-heavy	172.5	151.5, 193.5	*	120	*	17.5	19.5	heavy rain two nights before sample
8/9/2009	8:00 AM	clear		43.5		43.5	80	80	13.5	20.5	
8/23/2009	7:55 AM	clear	P-heavy, B	157.6		*			22.5	24	3 boats launched before sample
9/6/2009	8:00 AM	clear	B	26.2		26.2	1	1	11	18	boats
9/20/2009	8:00 AM	clear		16		16	1	1	6	15.5	
<b>DBL Geometric mean</b>				<b>63.01</b>		<b>42.38</b>	<b>28.36</b>	<b>19.84</b>			
<b>Pejepscot Boat Launch</b>											
4/27/2009	8:45 AM	overcast	P-low	218.7		218.7					
5/17/2009	10:30 AM	overcast	P-heavy	52	49.5, 54.5	*	320	*			
6/14/2009	8:40 AM	drizzle	P-heavy	54.8		*					
6/28/2009	8:35 AM	overcast	P-low	50.4		50.4			17.5	19.3	
7/12/2009	7:00 AM	overcast	P-low	44.25	48.1, 40.4	44.25	1	1	16.5	17.6	sampled DO in flow and eddy- same reading
7/26/2009	7:35 AM	overcast	P-moderate	218.7		218.7			18	19.8	DO 1 at .5m; DO 2 at 1m; H2O temp at .5m: 20.1; SC at .5m: 65.4
8/9/2009	6:40 AM	clear		28.8		28.8			13	21.3	
8/23/2009	6:35 AM	clear/overcast		154.15	146.7, 161.6	154.15	80	80	23.6	25.6	air temp from DO meter; bacteria sample by hand direct to bottle- no throw bucket
9/6/2009	6:55 AM	clear		15.8	15.6, 16	15.8	1	1	8	20	lowest water of season, 1m depth
9/20/2009	7:00 AM	clear		15.6		15.6	1	1	4	17	
<b>PBL Geometric mean</b>				<b>56.52</b>		<b>57.33</b>	<b>7.61</b>	<b>2.99</b>			

**Lower Androscoggin River 2009 E.coli**  
**Class B Criterion: geomean  $\leq$  64 colonies/ml; instantaneous  $\leq$  256 colonies/ml**  
 (\* = value not used; taken during heavy rain event)


 = does not meet criterion; out of compliance				IDEXX <i>E. coli</i> (colonies/100 ml)			Coliscan <i>E. coli</i> (colonies/100 ml)		Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	All Data (Mean of Reps)	Replicate Data	Heavy Rain Data Excluded	All Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b><i>Fish Park Up [above dam]</i></b>											
4/27/2009	9:25 AM	overcast	P-low	167		167					
5/17/2009	10:55 AM	overcast	P	9.7		9.7					
6/14/2009	8:10 AM	drizzle	P-heavy	58.05	58.8, 57.3	*	280	*			
6/28/2009	8:00 AM	overcast	P-low	42.2		42.2			16.5	19.6	high water; 3'
7/12/2009	7:40 AM	overcast	P-low	42.5		42.5			16.5	17.8	sampling depth - 1m
7/26/2009	8:05 AM	overcast	P-moderate	163.85	160.7, 167	163.85	120	120	18	20.7	WT at surface: 10
8/9/2009	7:10 AM	clear		15.8		15.8			13	21.8	sample at 1m
8/23/2009	7:15 AM	partly cloudy		222.4		222.4			22.2	25.4	N. wind
9/6/2009	7:35 AM	clear		14.2		14.2			11	20.3	1m sample
9/20/2009	7:30 AM	clear		4.65	5.2, 4.1	4.65			5	17.6	WT- 8.8
<b>FPU Geometric mean</b>				<b>38.08</b>		<b>36.34</b>	<b>183.30</b>	<b>120.00</b>			
<b><i>Fish Park Down [below dam]</i></b>											
4/27/2009	9:37 AM	overcast	P-low	206.4		206.4					
5/17/2009	11:15 AM	overcast	P-low	5.2		5.2					
6/14/2009	8:00 AM	overcast	P-heavy	55.7		*					
6/28/2009	7:45 AM	overcast	P-low	46.4		46.4			16.2	19.5	high water
7/12/2009	7:50 AM	overcast	P-low	24.6		24.6			16.4	17.8	sampling depth- .5m
7/26/2009	8:25 AM	fog/haze	P-moderate	198.9		198.9			18.5	20.6	sample at .5m
8/9/2009	7:25 AM	clear		16.65	17.3, 16	16.65	1	1	12.5	21.7	WT Surface: 8.2, 8.6, 8.8
8/23/2009	7:25 AM	overcast		172.5		172.5			23.3	25.4	no waves
9/6/2009	7:50 AM	clear		9.7		9.7			11.5	20.7	.5m sample depth
9/20/2009	7:45 AM			9.7		9.7			5	17.5	
<b>FPD Geometric mean</b>				<b>36.01</b>		<b>34.31</b>	<b>1.00</b>	<b>1.00</b>			




**Lower Androscoggin River 2009 E.coli**  
**Class B Criterion: geomean  $\leq$  64 colonies/ml; instantaneous  $\leq$  256 colonies/ml**  
 (\* = value not used; taken during heavy rain event)

<span style="background-color: yellow;">■</span> = does not meet criterion; out of compliance				IDEXX <i>E. coli</i> (colonies/100 ml)			Coliscan <i>E. coli</i> (colonies/100 ml)		Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	All Data (Mean of Reps)	Replicate Data	Heavy Rain Data Excluded	All Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Bruns. Water Works</b>											
4/27/2009	9:55 AM	overcast	P-low	88.2		88.2					
5/17/2009	11:45 AM	overcast	P-low	18.7		18.7					
<b>BWW Geometric mean</b>				<b>40.61</b>		<b>40.61</b>					
<b>Bruns. Interstate Ledges</b>											
5/17/2009	12:15 PM	overcast	P	20.1		20.1					
6/14/2009	7:25	drizzle	P-heavy	73.8		*					
6/28/2009	7:20 AM	overcast	P-low	35.1	39.3, 30.9	35.1			16.5	19.6	
7/12/2009	8:10 AM	overcast	P-low	41.4		41.4			18.5	17.85	
7/26/2009	8:40 AM	fog/haze	P-moderate	178.9		178.9			18.5	20.6	small amount of foam across river; readings taken at .5m and 1m. Results the same
8/9/2009	7:55 AM	clear		21.8		21.8			14.5	21.7	light foam; low water
8/23/2009	7:50 AM	partly cloudy		239.55	231, 248.1	239.55	40	40	23.1	25.4	low water
9/6/2009	8:10 AM	clear		13.5		13.5			13	20.3	1m sample depth
9/20/2009	8:30 AM	clear		9.8		9.8			9	17.5	
<b>BIL Geometric mean</b>				<b>40.07</b>		<b>37.13</b>	<b>40.00</b>	<b>40.00</b>			
<b>Bruns. Canoe Portage</b>											
4/27/2009	10:20 AM	overcast	P-low	156.5		156.5					
5/17/2009	12:40 PM	overcast		16.9		16.9			10	13	
6/14/2009	6:53 AM	drizzle	P-heavy	55.7		*			15.6	18.8	
6/28/2009	6:50 AM	overcast	P-low	52		52			16.5	19.6	high water
8/9/2009	7:30 AM	clear		13.4		13.4					
8/23/2009	8:05 AM	overcast		517.2		517.2					in eddy
9/6/2009	8:40 AM	clear		13.1		13.1			13	20.1	.5m depth
<b>BCP Geometric mean</b>				<b>49.18</b>		<b>48.17</b>					

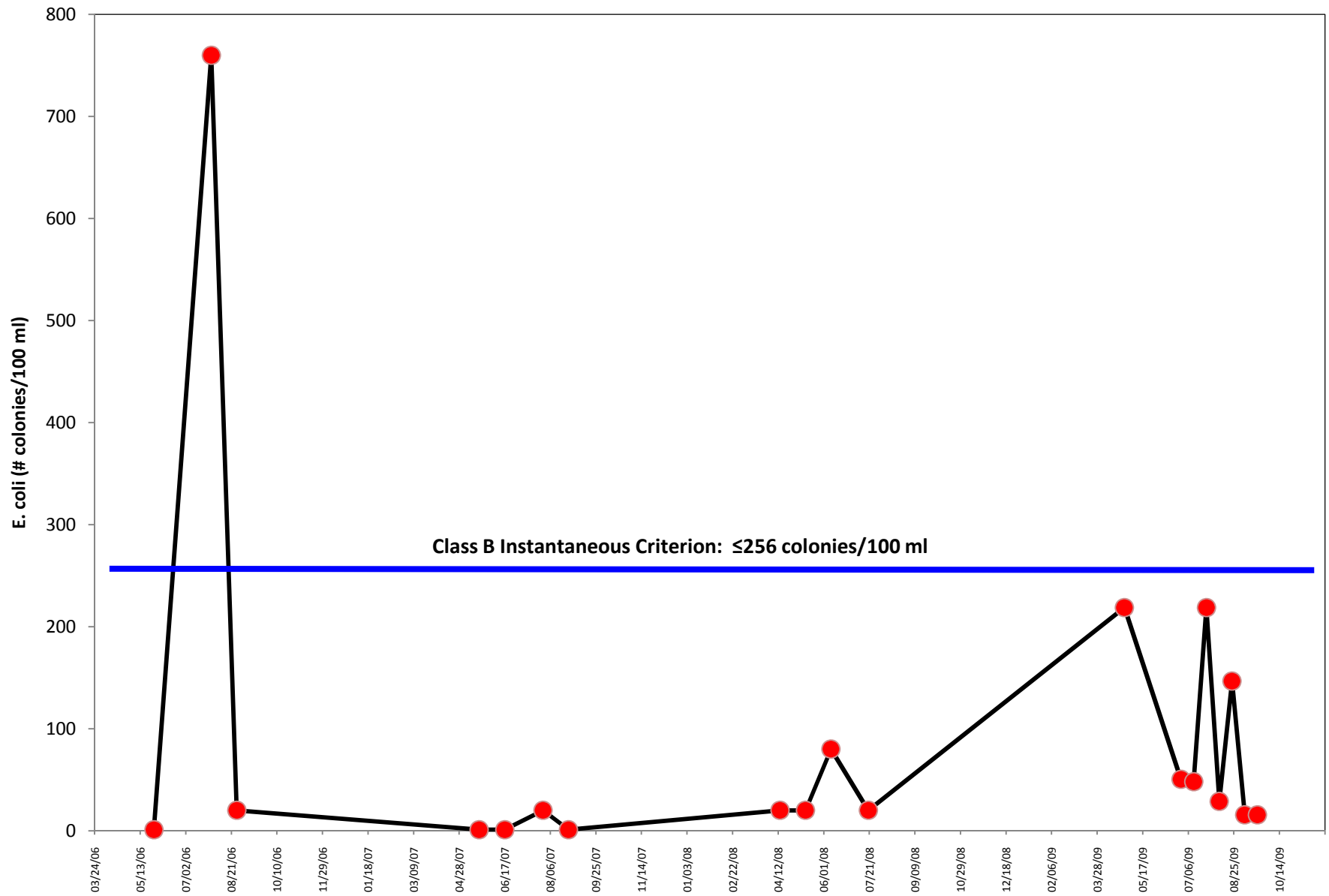
**Lower Androscoggin River 2009 E.coli**  
**Class B Criterion: geomean  $\leq$  64 colonies/ml; instantaneous  $\leq$  256 colonies/ml**  
 (\* = value not used; taken during heavy rain event)

 = does not meet criterion; out of compliance				IDEXX <i>E. coli</i> (colonies/100 ml)			Coliscan <i>E. coli</i> (colonies/100 ml)		Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	All Data (Mean of Reps)	Replicate Data	Heavy Rain Data Excluded	All Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Bruns. Canoe Mooring [off BCP]</b>											
7/12/2009	7:30 AM	overcast	P-low	45	42, 48	45	40	40		18	bacteria-surface sample 9"
7/26/2009	7:30 AM	overcast	P-heavy	174.45	150, 198.9	*			21	20.8	1 boat and several ducks
8/9/2009	7:30 AM	clear	M, W	38	18.7, 57.3	38			18	21.8	a lot of effluent-very foamy
8/23/2009	8:00 AM	overcast	W	355.1	344.8, 365.4	355.1			24	25	W-ducks
9/6/2009	9:05 AM	clear		10.8		10.8	40	40		20.3	2.5m sample depth
9/20/2009	6:55 AM	clear	W	9.2	9.8, 8.6	9.2	80	80	11.4	17.1	beaver, heron
<b>BCM Geometric mean</b>				<b>46.81</b>		<b>35.98</b>	<b>50.40</b>	<b>50.40</b>			
<b>Bruns. Water St. Boat Launch</b>											
5/17/2009	10:15 AM	overcast	P	436		436					
6/14/2009	9:15 AM	Steady Rain	P-heavy	53.3	28.2, 78.4	*					
6/28/2009	9:35 AM		P-moderate	67.7		67.7			16.7	10	2+ boats
7/12/2009	9:20 AM	overcast	P-moderate	36.9		36.9			14.4	18	2+ boats
7/26/2009	7:55 AM	overcast/fog	P-heavy	214.3		*	40	*	18.3	15.6	boat
8/9/2009	7:40 AM	clear	P-moderate	19.3	23.8, 14.8	19.3			14.4	21	DO- Ed
8/23/2009	8:05 AM	overcast		517.2		517.2					in shore eddy
9/6/2009	7:45 AM	clear		25.6		25.6			8.9	19.9	DO-KMC
9/20/2009	9:20 AM	clear		3		3			11.7		
<b>BWS Geometric mean</b>				<b>59.63</b>		<b>50.48</b>	<b>40.00</b>	<b>na</b>			

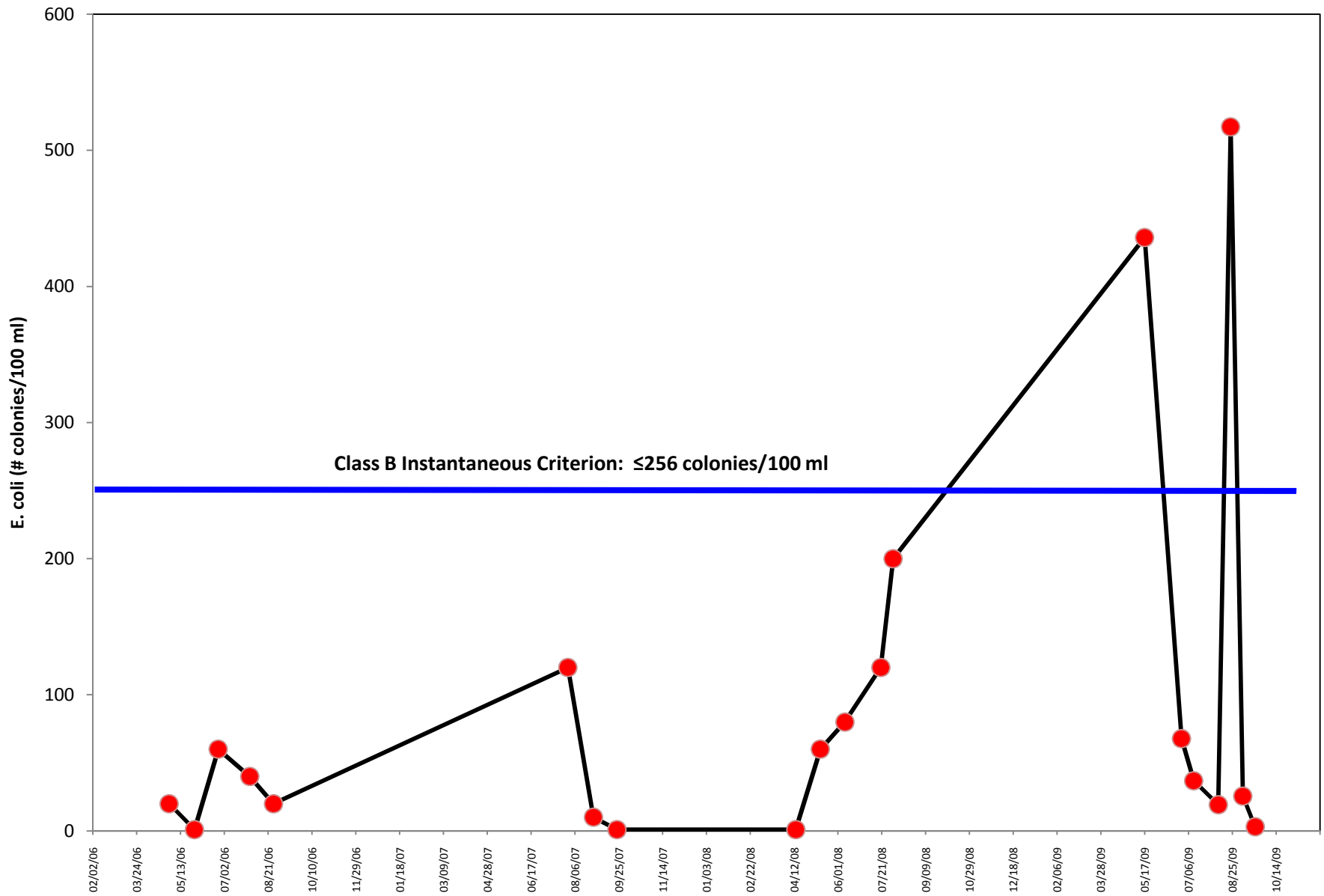
**Lower Androscoggin River 2009 E.coli**  
**Class B Criterion: geomean  $\leq$  64 colonies/ml; instantaneous  $\leq$  256 colonies/ml**  
 (\* = value not used; taken during heavy rain event)

 = does not meet criterion; out of compliance				IDEXX <i>E. coli</i> (colonies/100 ml)			Coliscan <i>E. coli</i> (colonies/100 ml)		Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	All Data (Mean of Reps)	Replicate Data	Heavy Rain Data Excluded	All Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Water St. Mooring [off BWS]</b>											
6/28/2009	7:50 AM	overcast	P-low	61.95	63.7, 60.2	61.95	40	40		19.4	DO taken at 7' (8.8 DO recorded at shore)
7/12/2009	7:45 AM	overcast	P-low	26.6		26.6				17.9	sample at 7'
7/26/2009	8:40 AM	fog/haze	P-moderate	201.4		201.4				20.5	WT at surface: 8.4, 8.4, 8.6; DO meter at surface: 8.5
8/9/2009	7:50 AM	clear		14.6		14.6	1	1		21.8	
8/23/2009	7:55 AM			365.4		365.4	120	120		25.3	
9/6/2009	8:00 AM	clear		16.6		16.6	80	80		20.4	2.5m sample depth
9/20/2009	7:59 AM	clear		14.5		14.5	1	1	11.4	17.6	
<b>WSM Geometric mean</b>				<b>45.85</b>		<b>45.85</b>	<b>13.09</b>	<b>13.09</b>			
<b>Brunswick Bay Bridge</b>											
4/27/2009	10:50 AM	clear	P-low	160.7		160.7					
5/17/2009	10:00 AM	drizzle	P-low	9.7		9.7					High Tide
6/14/2009	8:00 AM	drizzle	P-moderate	36.9		36.9					
6/28/2009	8:50 AM	overcast	P-moderate	44.8		44.8				18.6	
7/12/2009	8:40 AM	overcast	P-moderate	40.8		40.8				17.7	
7/27/2009	8:20 AM	overcast	P-high	365.4		*					
8/9/2009	7:00 AM			17.1		17.1				20.9	bacteria sample taken at 1:50pm
8/23/2009	7:20 AM			41.8	40.8, 42.8	41.8				25	
9/6/2009	7:10 AM	clear		34.05	34.5, 33.6	34.05				19.7	.5 m sample
9/20/2009	7:25 AM	clear		14.6		14.6			12.2	17.5	
<b>BBB Geometric mean</b>				<b>41.07</b>		<b>32.21</b>	<b>#NUM!</b>	<b>#NUM!</b>			

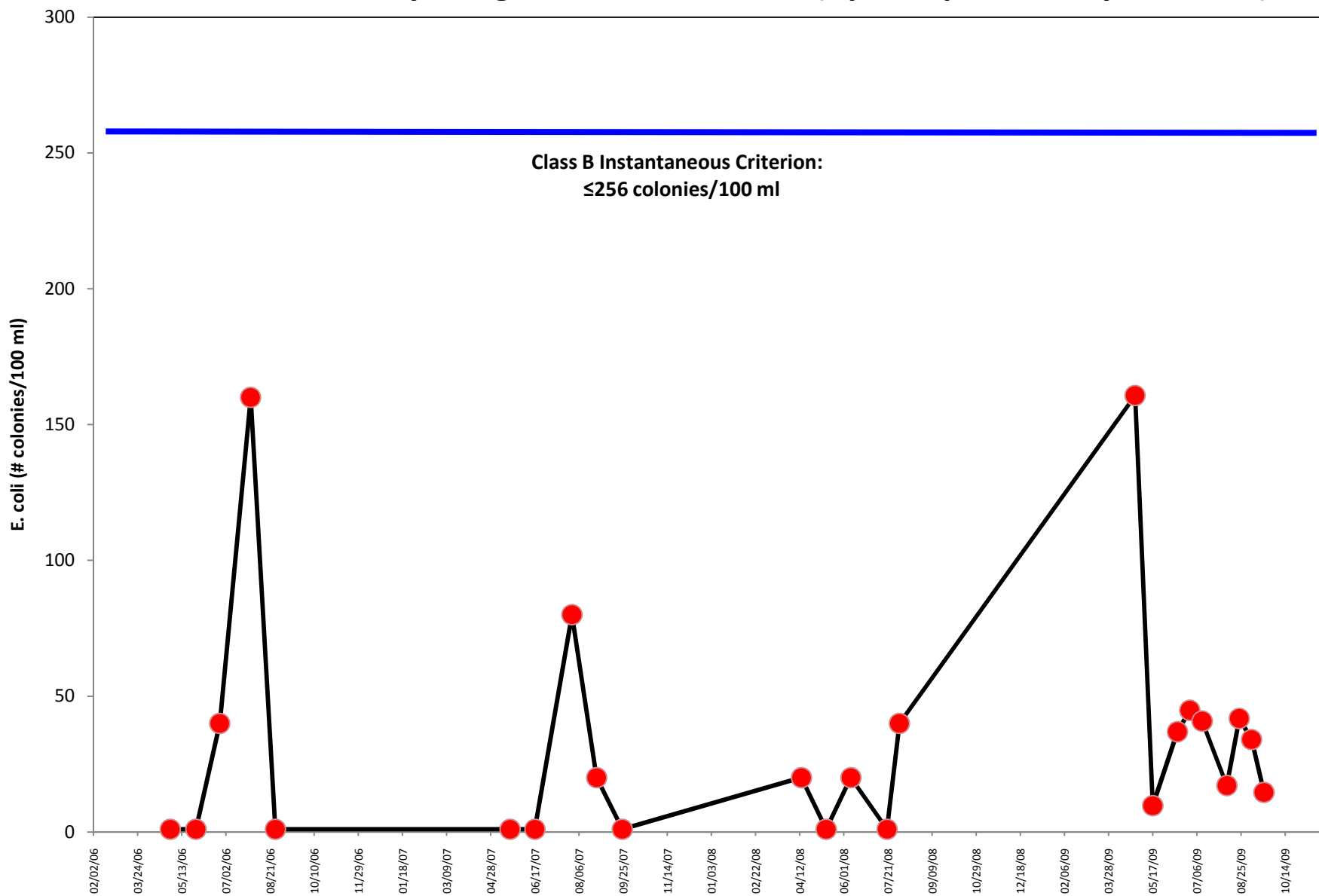
Pejepscot Boat Landing *E. coli* 2006 - 2009 (Apr - Sep; no heavy rain data)



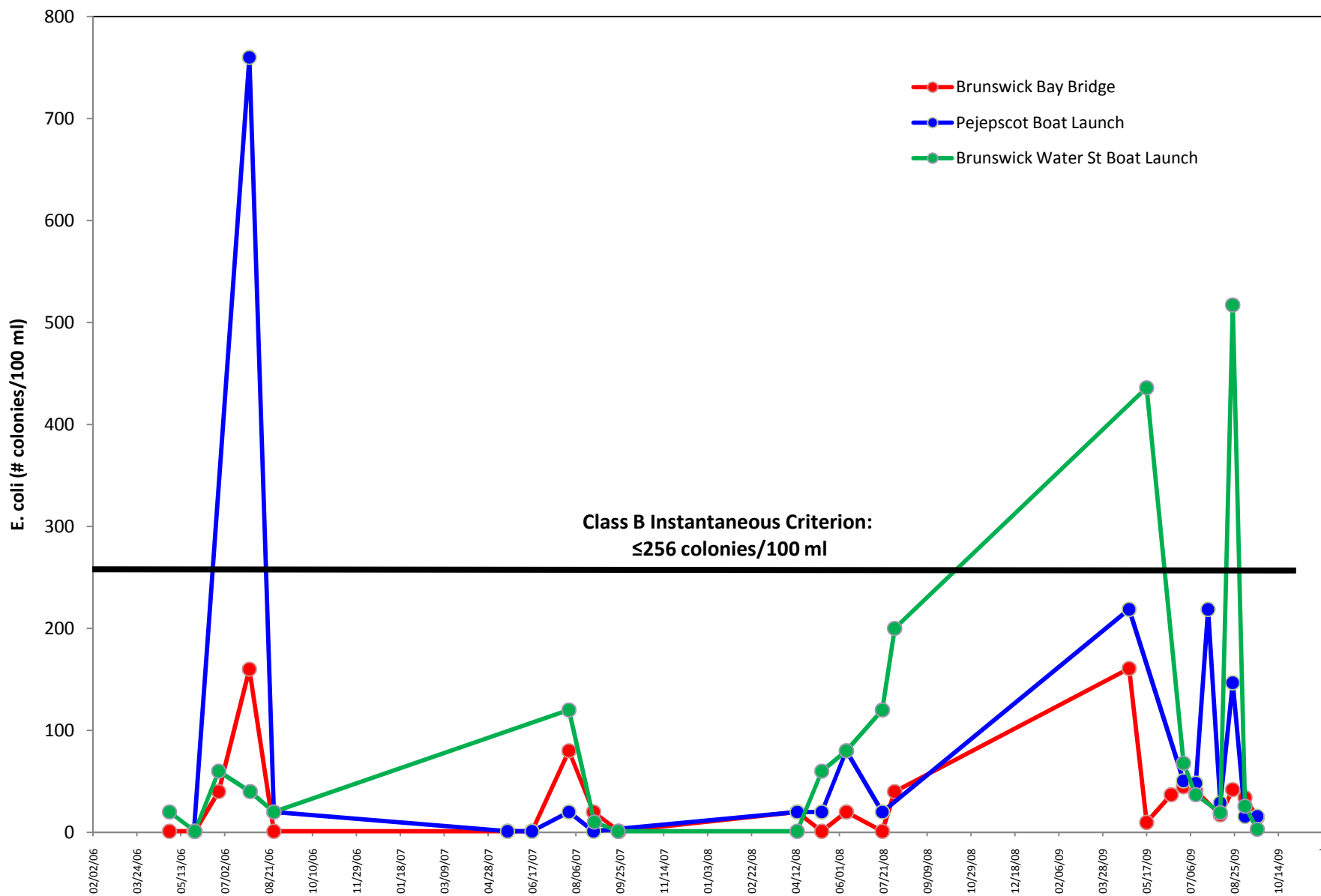
**Brunswick Water Street Boat Launch *E. coli* 2006 - 2009 (Apr - Sep; no heavy rain data)**



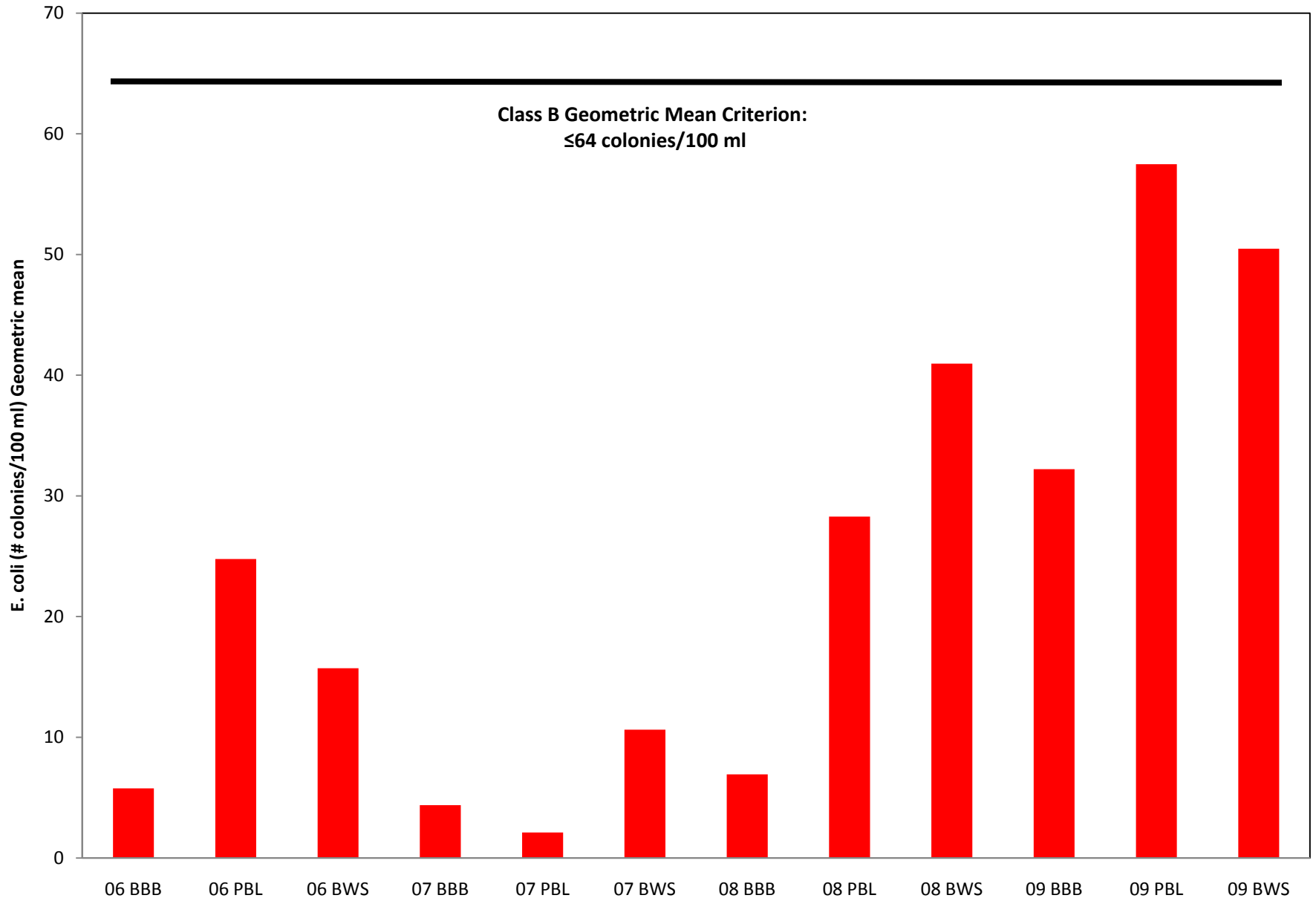
# Brunswick Bay Bridge *E. coli* 2006 - 2009 (Apr - Sep; no heavy rain data)



### Lower Androscoggin River - E. coli 2006 to 2009 (Apr - Sep; no heavy rain data)

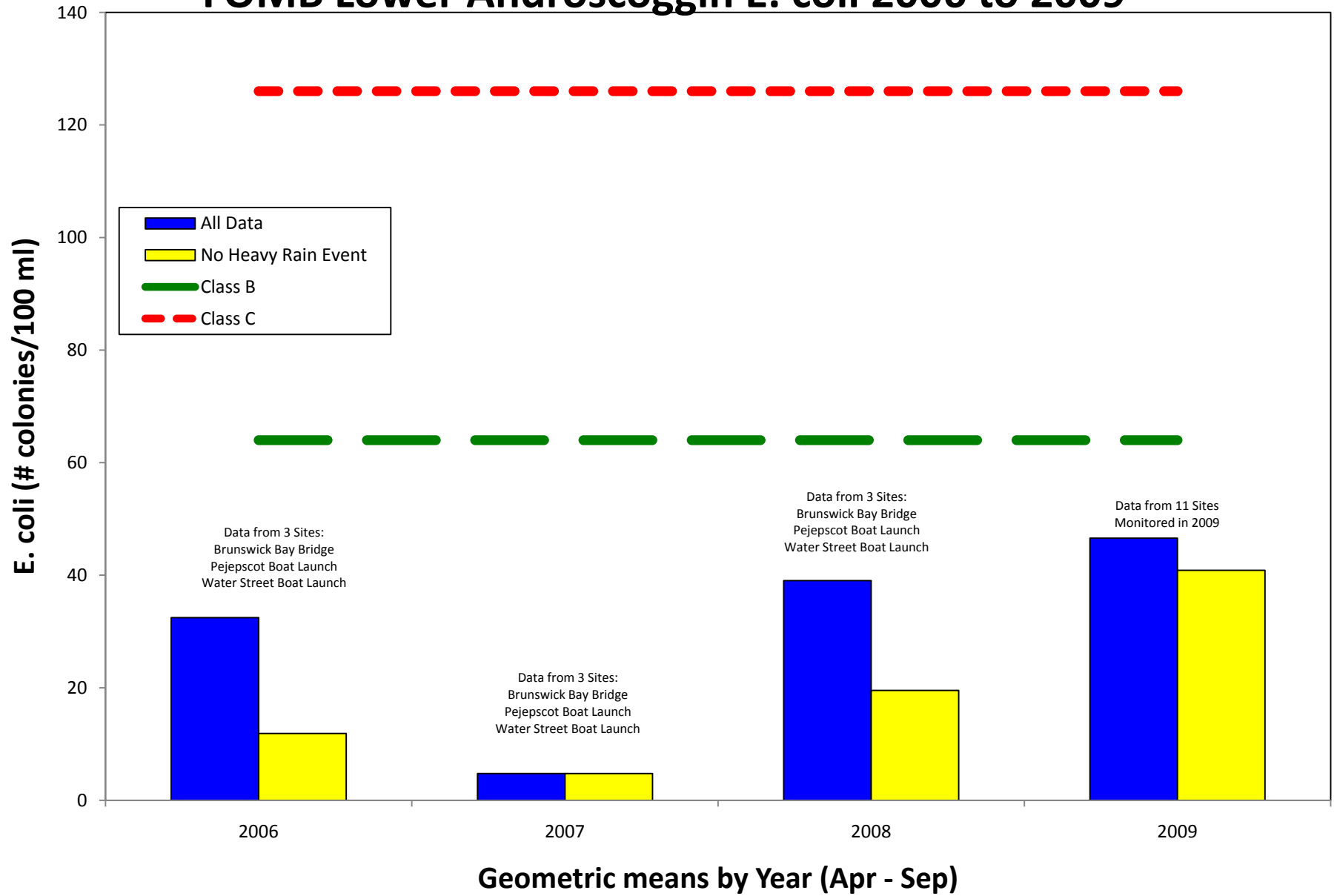


Lower Androscoggin River - *E. coli* GeoMeans by Station and Year (Apr - Sep; no heavy rain events)

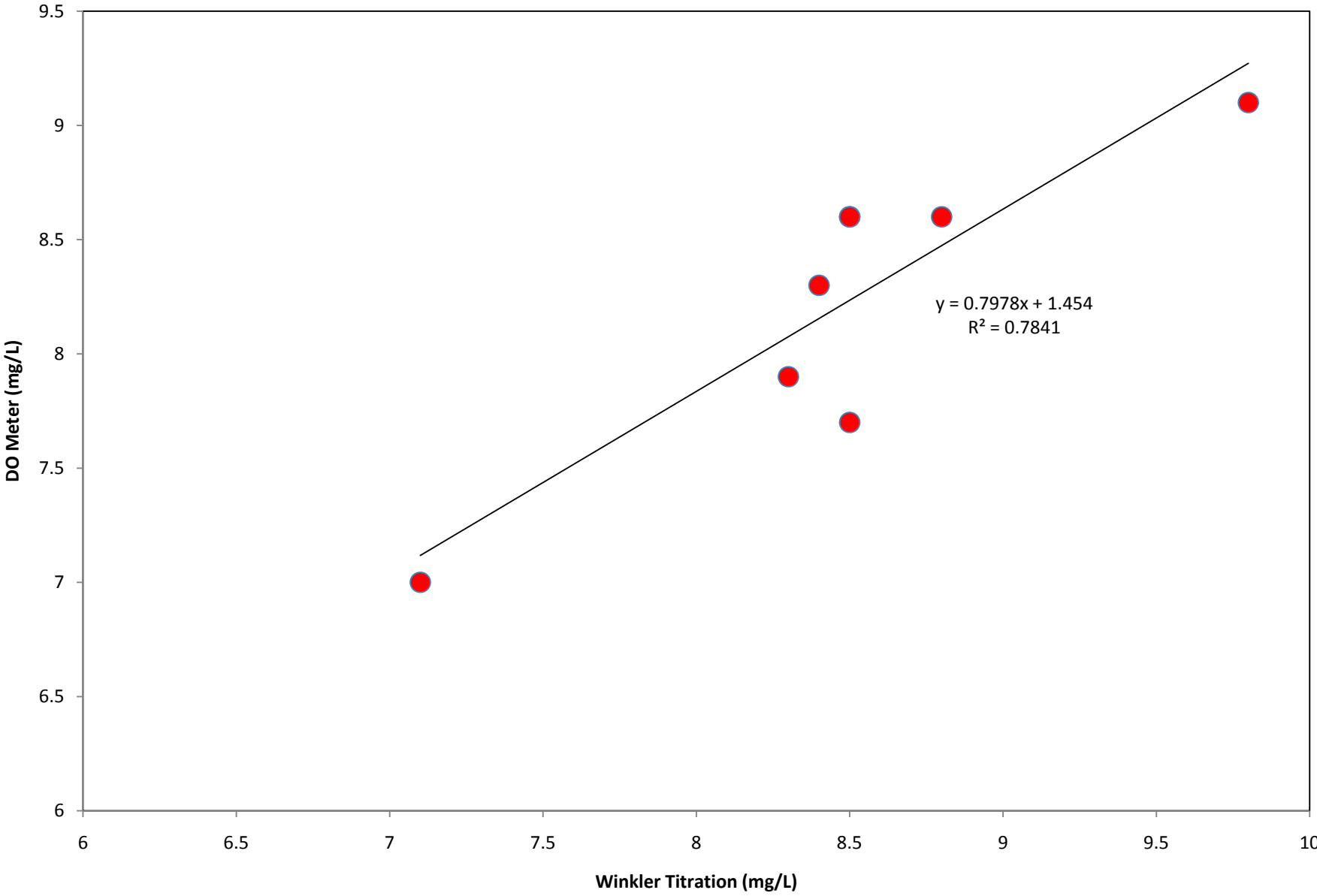




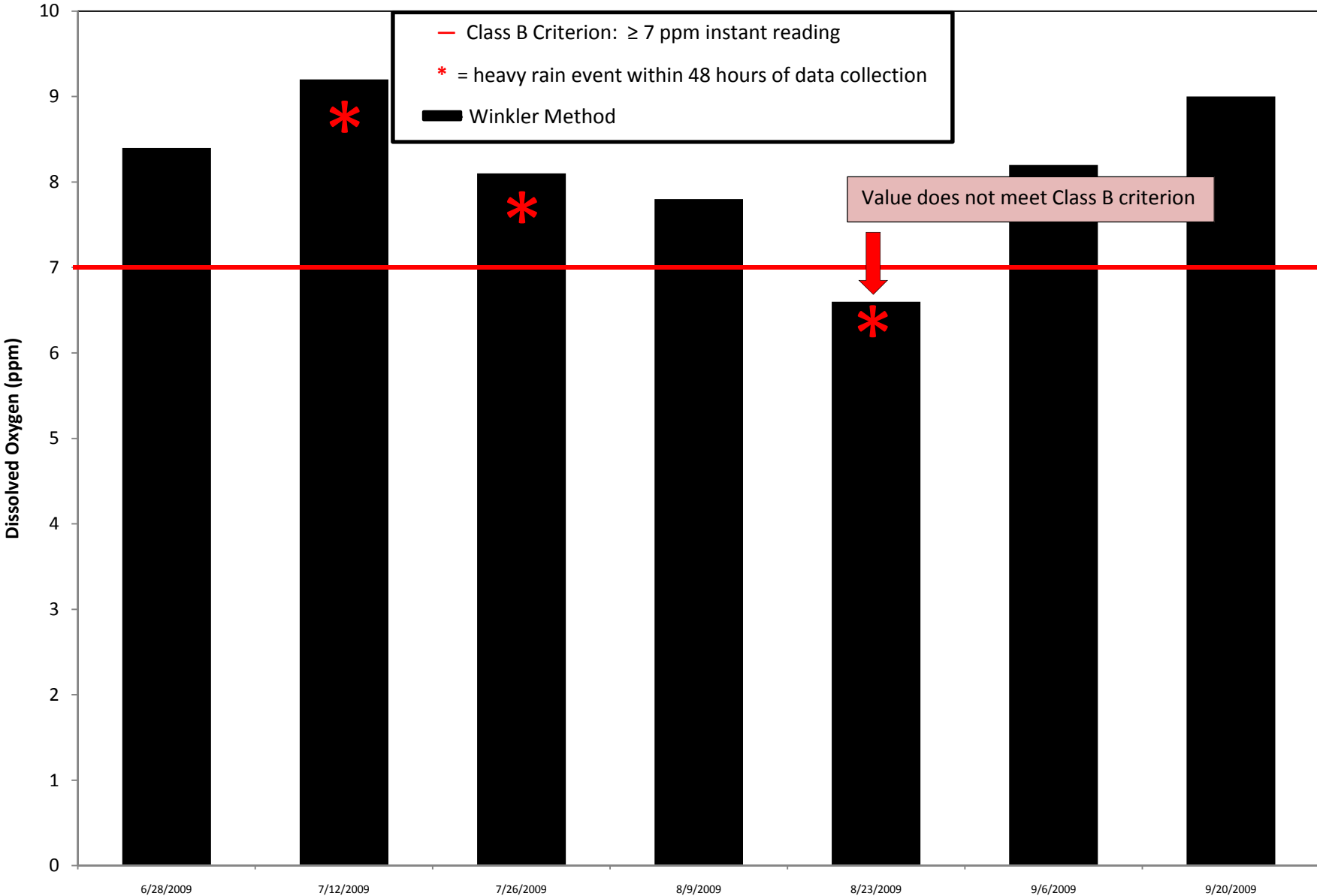
# FOMB Lower Androscoggin E. coli 2006 to 2009



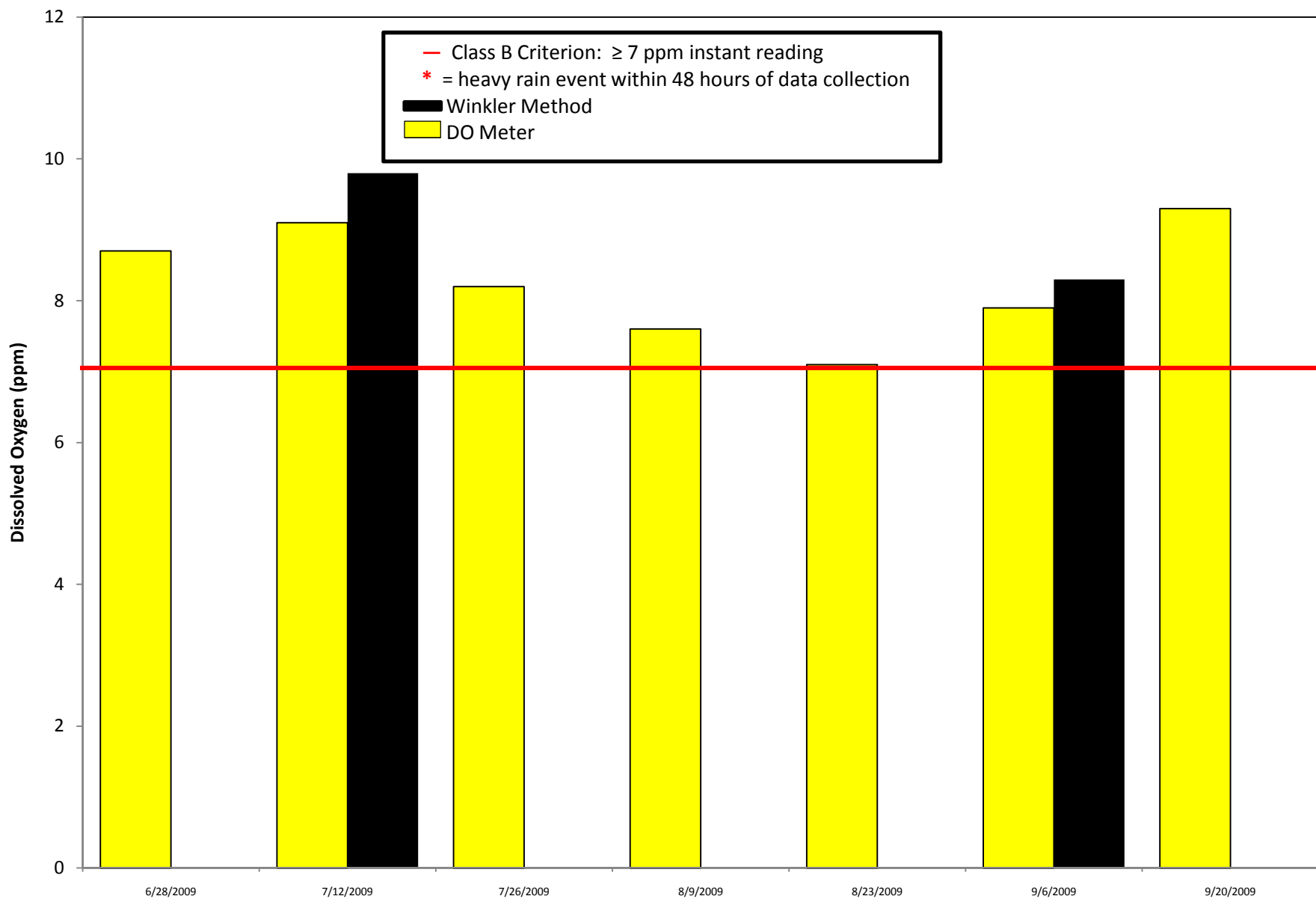
# Comparison of DO Meter & Winkler Titration for DO



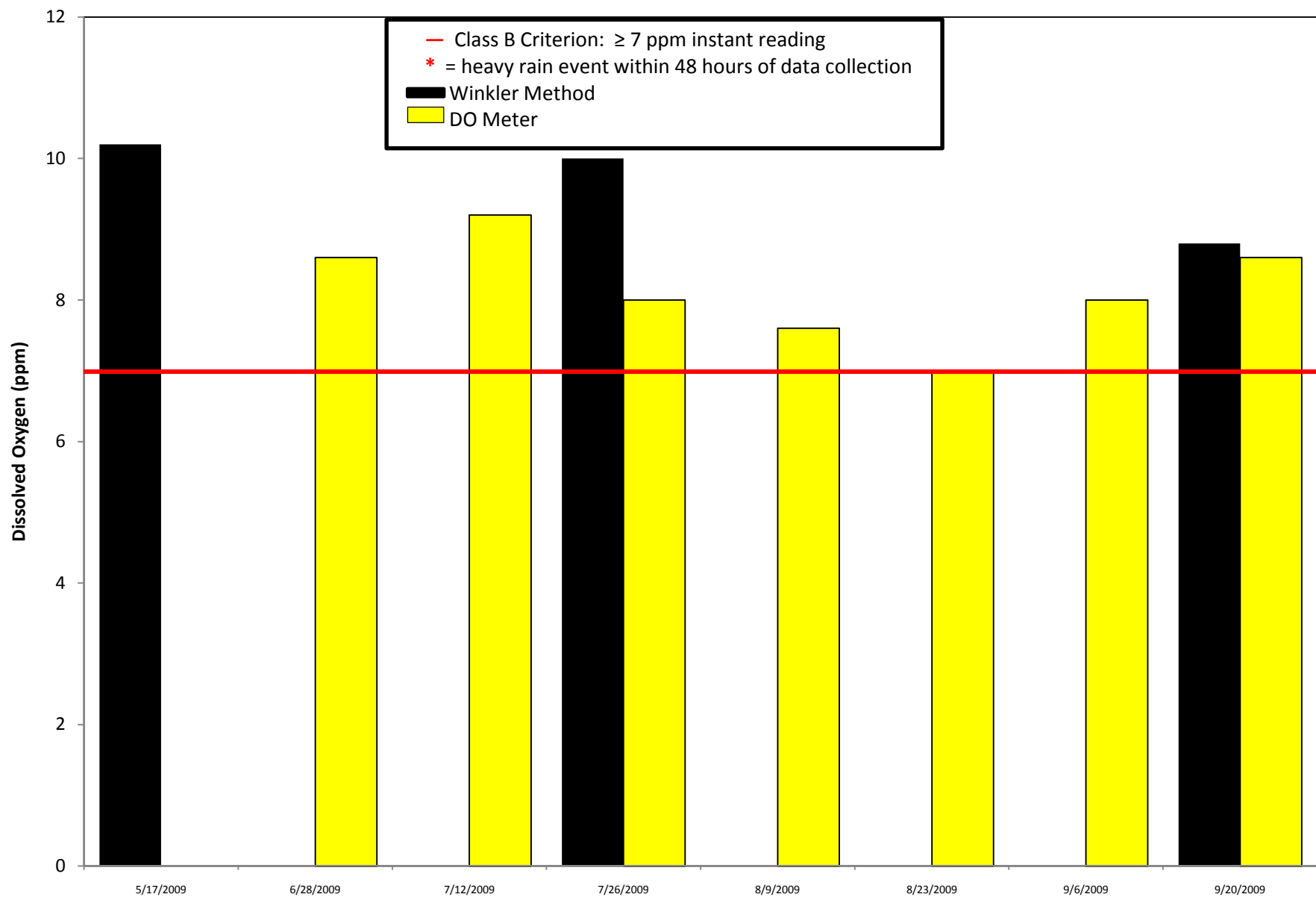
# Lower Androscoggin River 2009 DO - Durham Boat Launch (Apr - Sep)



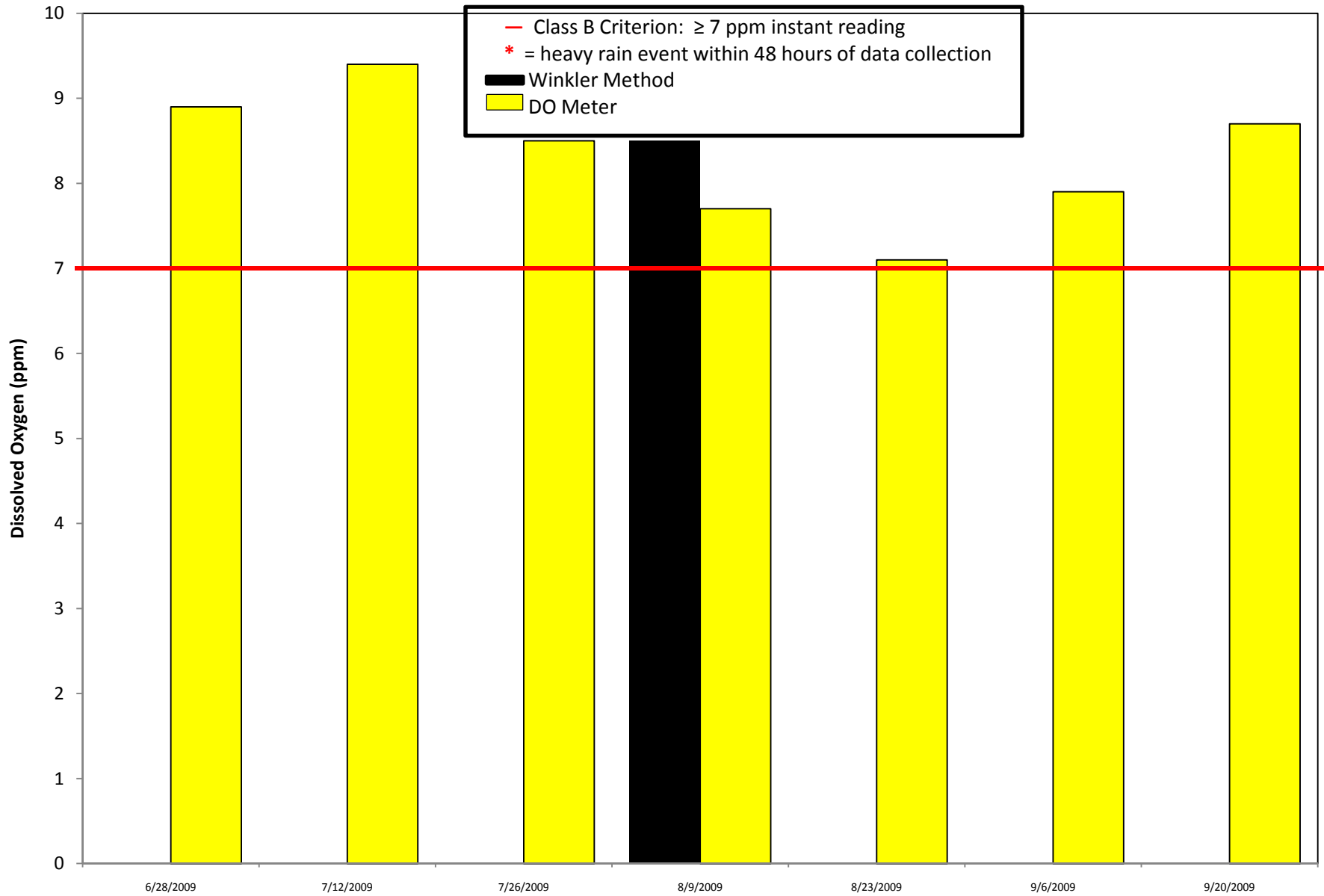
## Lower Androscoggin River 2009 DO - Pejepscot Boat Launch (Apr - Sep)



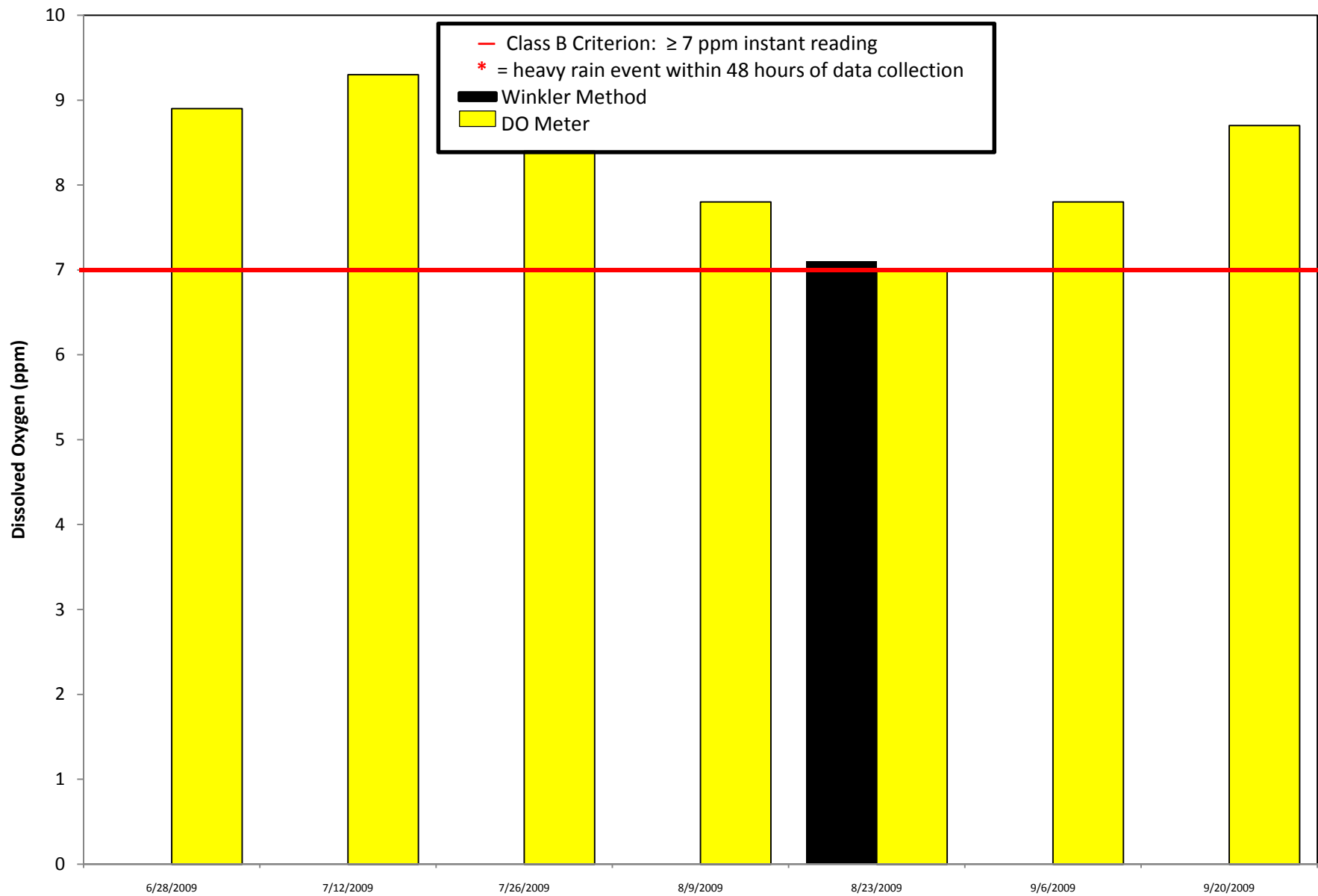
## Lower Androscoggin River 2009 DO - Fish Park Above Dam (Apr - Sep)



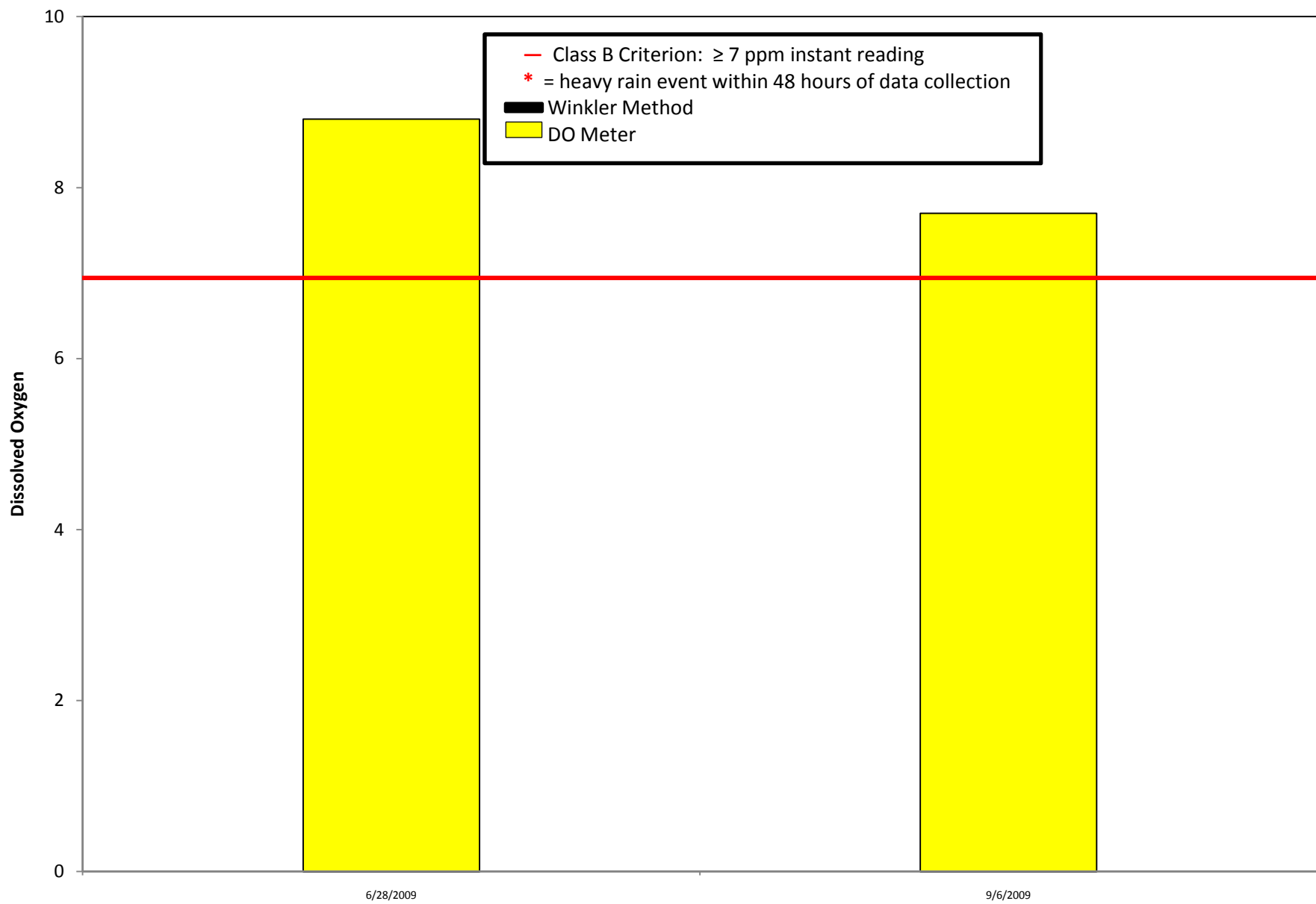
# Lower Androscoggin River 2009 DO - Fish Park Below Dam (Apr - Sep)



### Lower Androscoggin River 2009 DO - Brunswick Interstate Ledges (Apr - Sep)

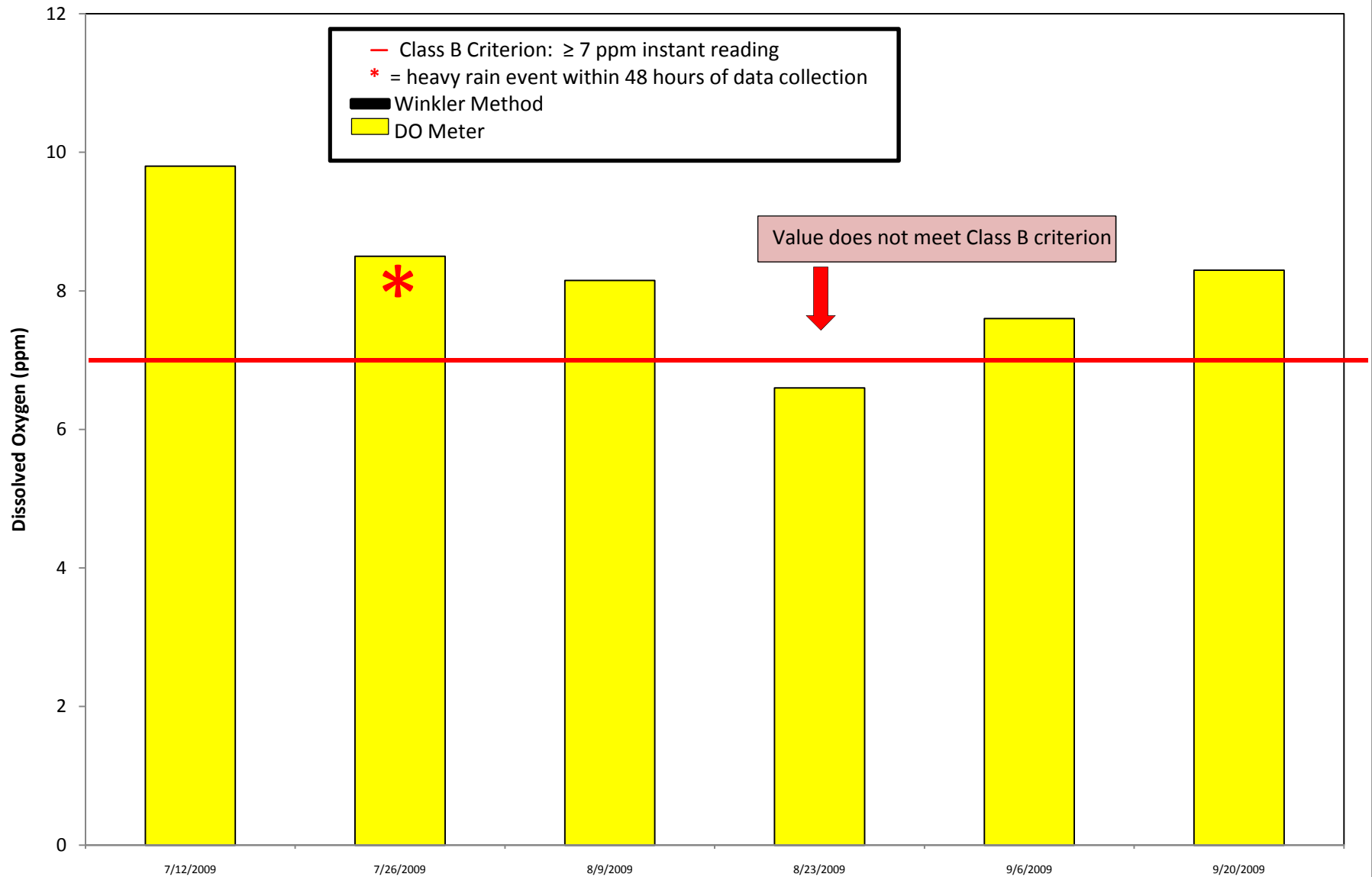


### Lower Androscoggin River 2009 DO - Brunswick Canoe Portage (Apr - Sep)

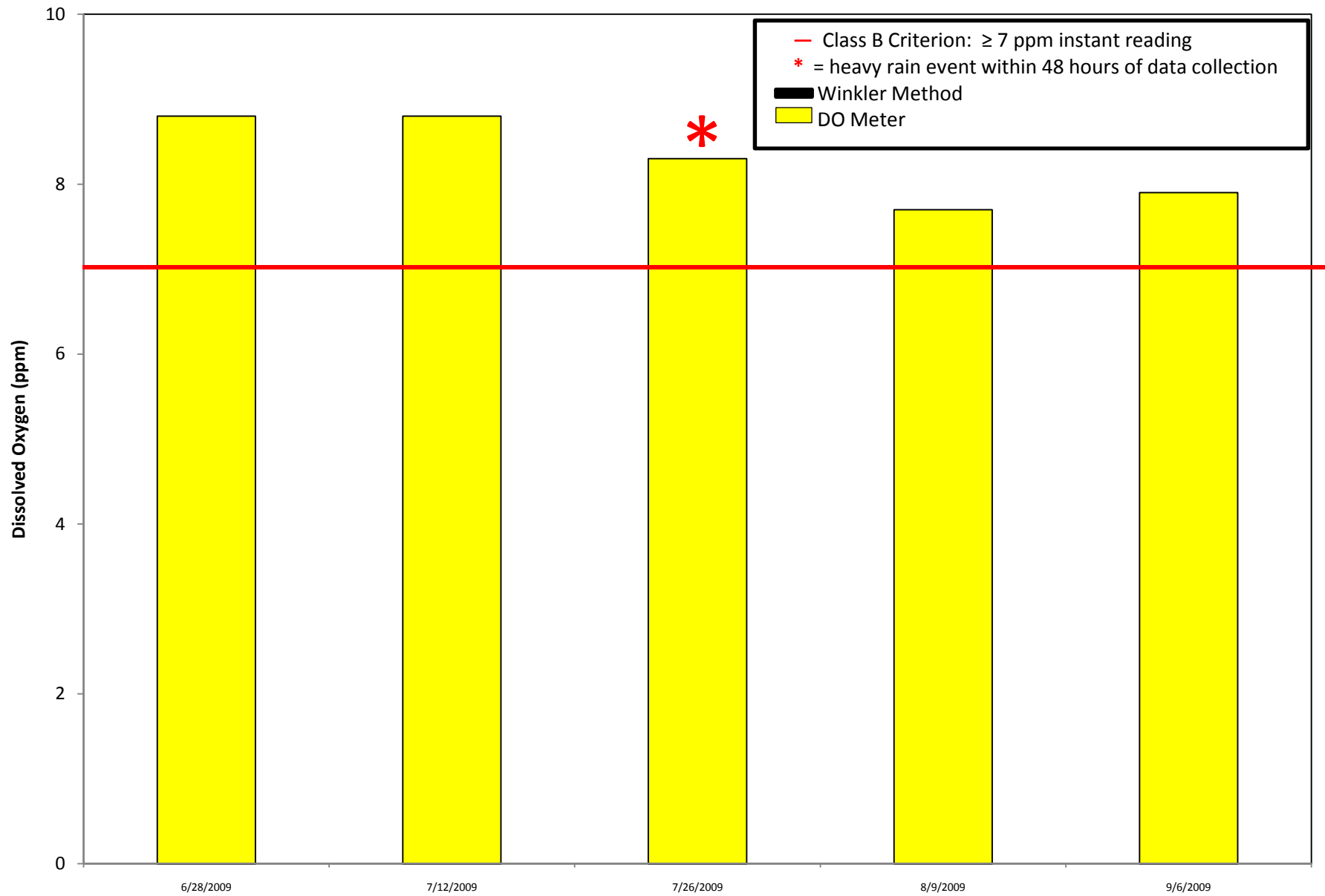




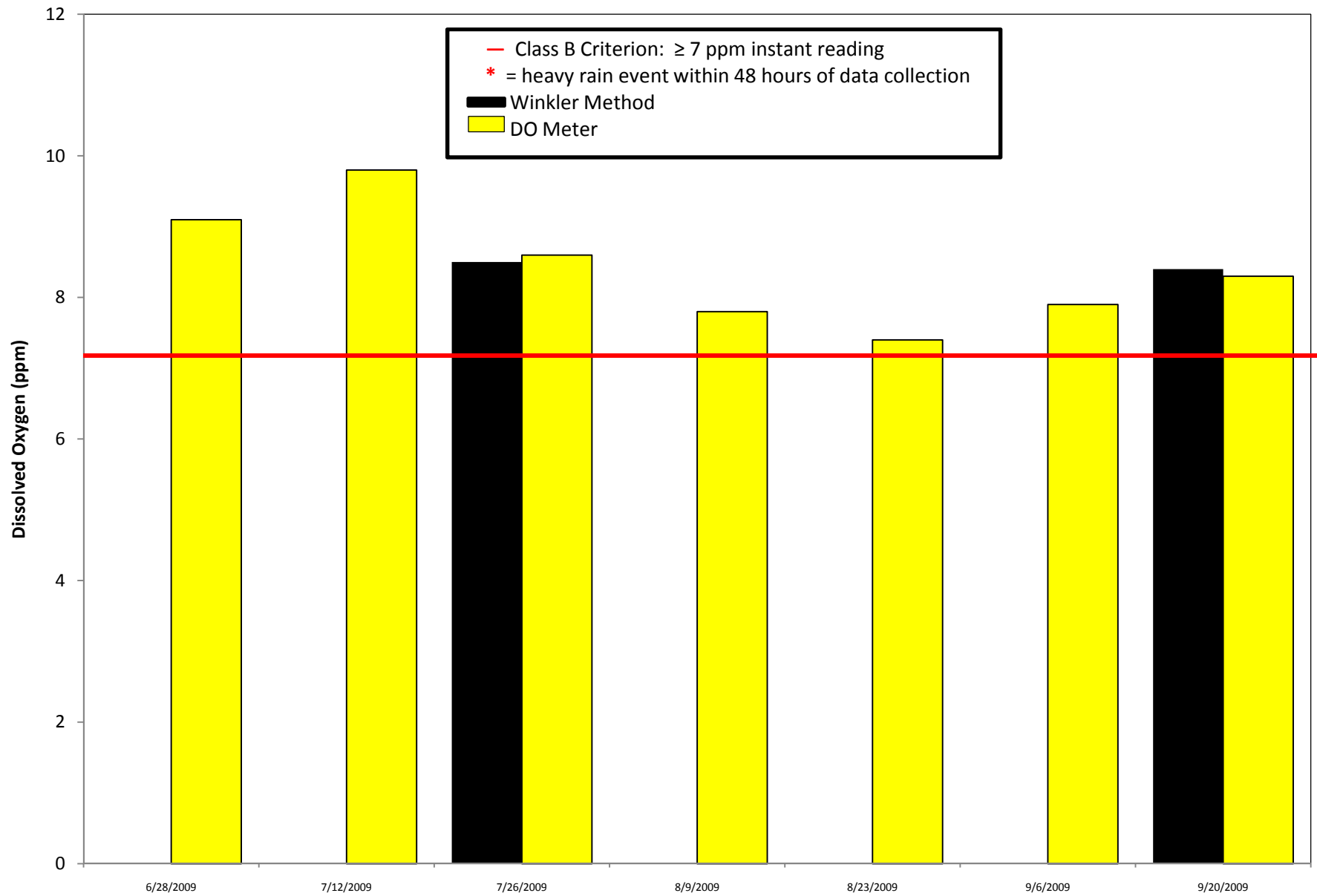
### Lower Androscoggin River 2009 DO - Brunswick Canoe Mooring (off BCP) (Apr - Sep)



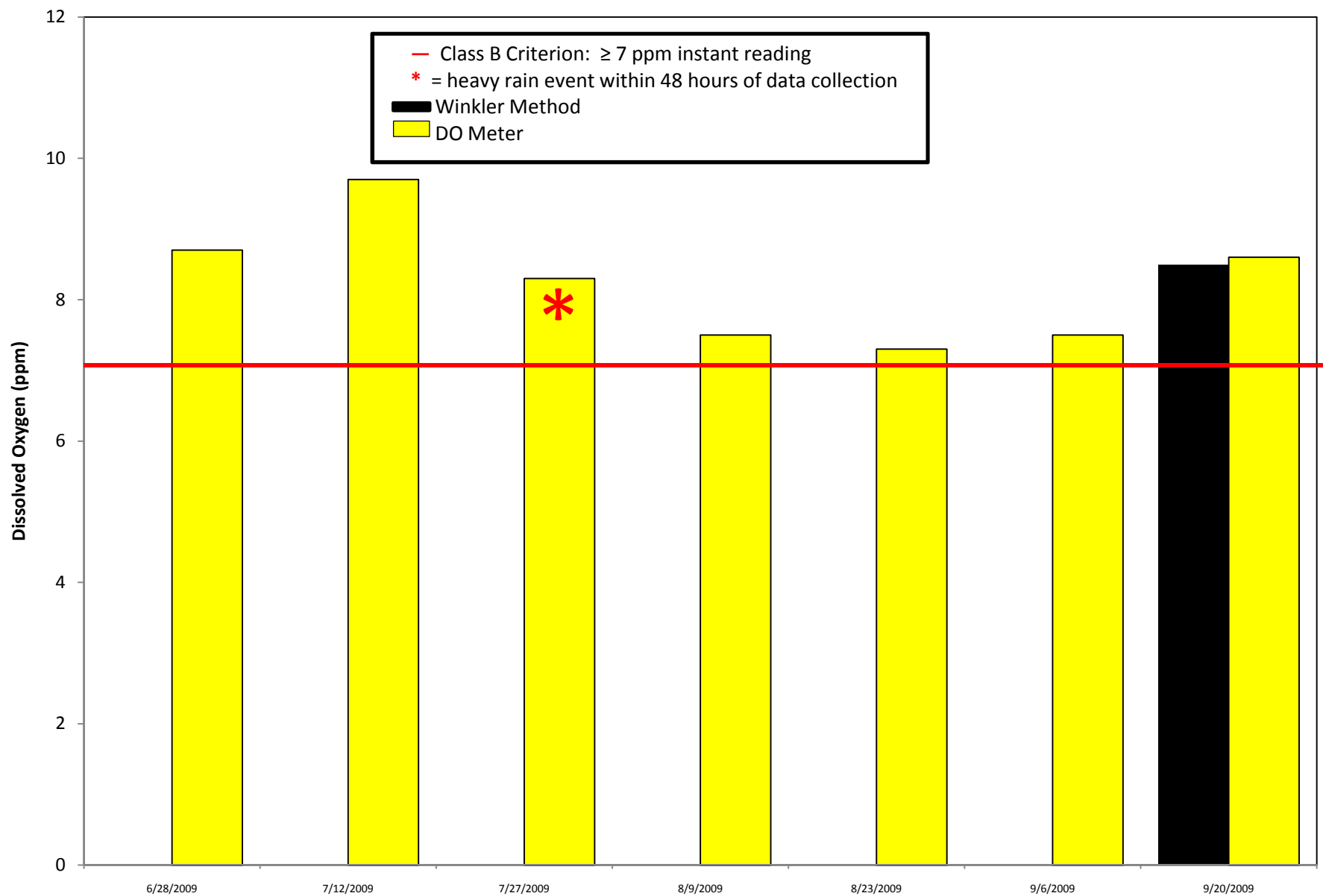
### Lower Androscoggin River 2009 DO - Brunswick Water St. Boat Launch (Apr - Sep)



### Lower Androscoggin River 2009 DO - Water St. Mooring (off BWS) (Apr - Sep)



## Lower Androscoggin River 2009 DO - Brunswick Bay Bridge (Apr - Sep)



**Lower Androscoggin River 2009 Dissolved Oxygen**  
**Class B Criterion: > 7 ppm instant reading**  
 (\* = value not used; taken during heavy rain event)

☐ = does not meet criterion; out of compliance				DO-Winkler (ppm) Criterion: > 7 ppm instant			DO-Meter (ppm) Criterion: > 7 ppm instant			Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	Replicate Data	Rep Data	Heavy Rain Data Excluded	(Mean of Reps)	Rep Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Durham Boat Launch</b>												
6/28/2009	7:55 AM	overcast	P-low	8.4		8.4				16.5	18.5	
7/12/2009	8:00 AM	overcast	P-heavy	9.2	9.2, 9.2	*				16.0	17.0	heavy rain previous night
7/26/2009	7:35 AM	fog/haze	P-heavy	8.1		*				17.5	19.5	heavy rain two nights before sample
8/9/2009	8:00 AM	clear		7.8		7.8				13.5	20.5	
8/23/2009	7:55 AM	clear	P-heavy, B	6.6		*				22.5	24.0	3 boats launched before sample
9/6/2009	8:00 AM	clear	B	8.2		8.2				11.0	18.0	boats
9/20/2009	8:00 AM	clear		9		9				6.0	15.5	
<b>DBL Geometric mean</b>				<b>8.15</b>		<b>8.34</b>						
<b>Pejepscot Boat Launch</b>												
6/28/2009	8:35 AM	overcast	P-low				8.7		8.7	17.5	19.3	
7/12/2009	7:00 AM	overcast	P-low	9.8		9.8	9.1	9.1, 9.1	9.1	16.5	17.6	sampled DO in flow and eddy- same reading
7/26/2009	7:35 AM	overcast	P-moderate				8.2		8.2	18.0	19.8	DO 1 at .5m; DO 2 at 1m; H2O temp at .5m: 20.1; SC at .5m: 6
8/9/2009	6:40 AM	clear					7.6		7.6	13.0	21.3	
8/23/2009	6:35 AM	clear/overcast					7.1	7.1, 7.2	7.1	23.6	25.6	air temp from DO meter; bacteria sample by hand direct to bott
9/6/2009	6:55 AM	clear		8.3		8.3	7.9	7.9, 7.9	7.9	8.0	20.0	lowest water of season, 1m depth
9/20/2009	7:00 AM	clear					9.3		9.3	4.0	17.0	
<b>PBL Geometric mean</b>				<b>9.02</b>		<b>9.02</b>	<b>8.24</b>		<b>8.24</b>			
<b>Fish Park Up [above dam]</b>												
5/17/2009	10:55 AM	overcast	P	10.2		10.2						
6/28/2009	8:00 AM	overcast	P-low				8.6		8.6	16.5	19.6	high water; 3'
7/12/2009	7:40 AM	overcast	P-low				9.2		9.2	16.5	17.8	sampling depth - 1m
7/26/2009	8:05 AM	overcast	P-moderate	10		10	8	8, 8	8	18.0	20.7	WT at surface: 10
8/9/2009	7:10 AM	clear					7.6		7.6	13.0	21.8	sample at 1m
8/23/2009	7:15 AM	partly cloudy					7		7	22.2	25.4	N. wind
9/6/2009	7:35 AM	clear					8		8	11.0	20.3	1m sample
9/20/2009	7:30 AM	clear		8.8		8.8	8.6	8.6, 8.6	8.6	5.0	17.6	WT- 8.8
<b>FPU Geometric mean</b>				<b>9.38</b>		<b>9.38</b>	<b>8.11</b>		<b>8.11</b>			

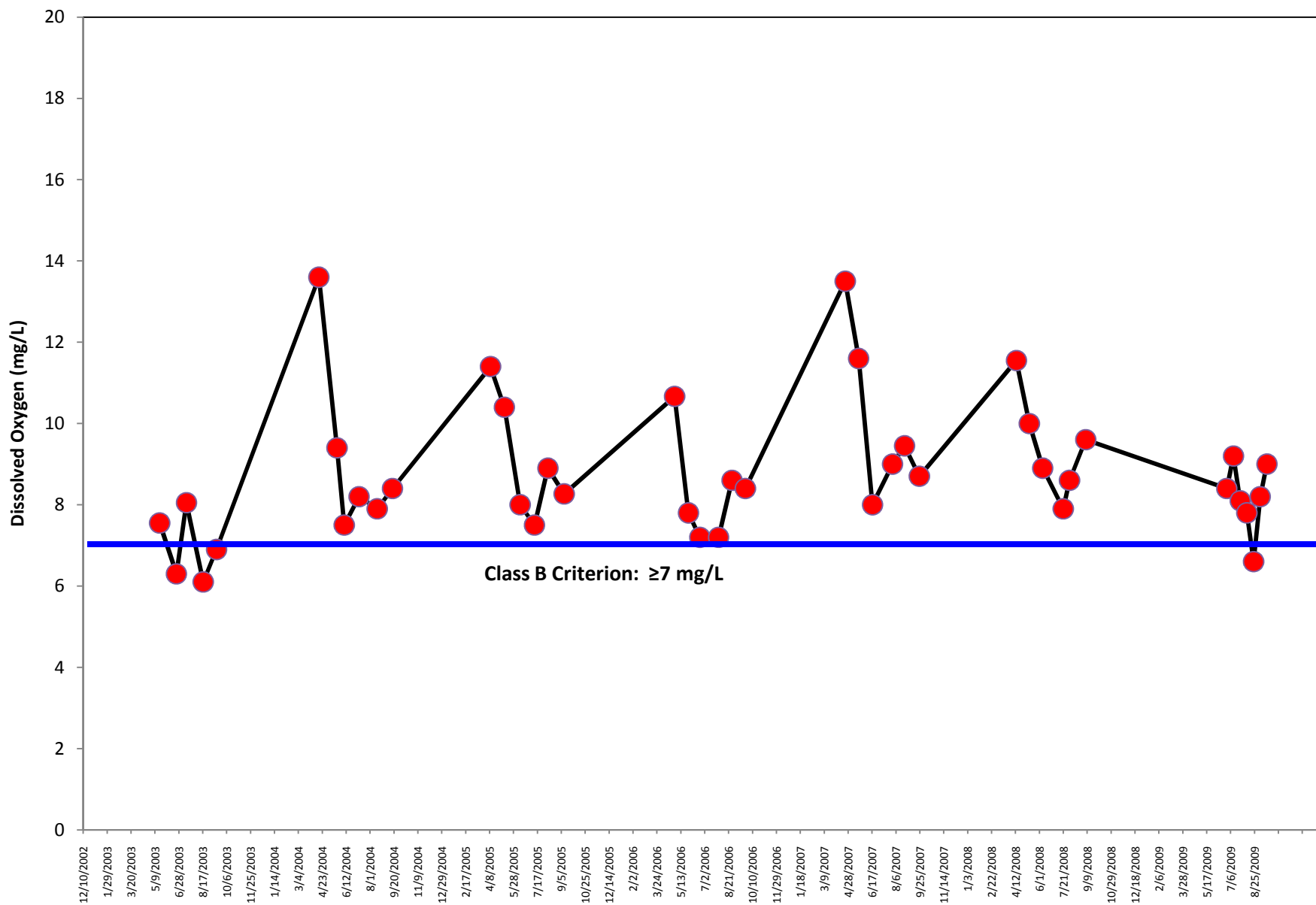
**Lower Androscoggin River 2009 Dissolved Oxygen**  
**Class B Criterion: > 7 ppm instant reading**  
 (\* = value not used; taken during heavy rain event)

☐ = does not meet criterion; out of compliance				DO-Winkler (ppm) Criterion: > 7 ppm instant			DO-Meter (ppm) Criterion: > 7 ppm instant			Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	Replicate Data	Rep Data	Heavy Rain Data Excluded	(Mean of Reps)	Rep Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b>Fish Park Down [below dam]</b>												
6/28/2009	7:45 AM	overcast	P-low				8.9		8.9	16.2	19.5	high water
7/12/2009	7:50 AM	overcast	P-low				9.4		9.4	16.4	17.8	sampling depth- .5m
7/26/2009	8:25 AM	fog/haze	P-moderate				8.5		8.5	18.5	20.6	sample at .5m
8/9/2009	7:25 AM	clear		8.5		8.5	7.7	7.7, 7.7	7.7	12.5	21.7	WT Surface: 8.2, 8.6, 8.8
8/23/2009	7:25 AM	overcast					7.1		7.1	23.3	25.4	no waves
9/6/2009	7:50 AM	clear					7.9		7.9	11.5	20.7	.5m sample depth
9/20/2009	7:45 AM						8.7		8.7	5.0	17.5	
<b>FPD Geometric mean</b>				<b>8.50</b>		<b>8.50</b>	<b>8.28</b>		<b>8.28</b>			
<b>Bruns. Interstate Ledges</b>												
6/28/2009	7:20 AM	overcast	P-low				8.9	8.9, 8.9	8.9	16.5	19.6	
7/12/2009	8:10 AM	overcast	P-low				9.3		9.3	18.5	17.9	
7/26/2009	8:40 AM	fog/haze	P-moderate				8.4		8.4	18.5	20.6	small amount of foam across river; readings taken at .5m and 1m
8/9/2009	7:55 AM	clear					7.8		7.8	14.5	21.7	light foam; low water
8/23/2009	7:50 AM	partly cloudy		7.1		7.1	7	7, 7	7	23.1	25.4	low water
9/6/2009	8:10 AM	clear					7.8		7.8	13.0	20.3	1m sample depth
9/20/2009	8:30 AM	clear					8.7		8.7	9.0	17.5	
<b>BIL Geometric mean</b>				<b>7.10</b>		<b>7.10</b>	<b>8.24</b>		<b>8.24</b>			
<b>Bruns. Canoe Portage</b>												
6/28/2009	6:50 AM	overcast	P-low				8.8		8.8	16.5	19.6	high water
9/6/2009	8:40 AM	clear					7.7		7.7	13.0	20.1	.5m depth
<b>BCP Geometric mean</b>							<b>8.23</b>		<b>8.23</b>			
<b>Bruns. Canoe Mooring [off BCP]</b>												
7/12/2009	7:30 AM	overcast	P-low				9.8	9.8, 9.8	9.8		18.0	bacteria-surface sample 9"; bacteria- mid depth sample
7/26/2009	7:30 AM	overcast	P-heavy				8.5	8.5, 8.5	*	21.0	20.8	1 boat and several ducks
8/9/2009	7:30 AM	clear	M, W				8.15	8.1, 8.2	8.1	18.0	21.8	a lot of effluent-very foamy
8/23/2009	8:00 AM	overcast	W				6.6		6.6	24.0	25.0	W-ducks
9/6/2009	9:05 AM	clear					7.6		7.6		20.3	2.5m sample depth
9/20/2009	6:55 AM	clear					8.3	8.3, 8.3		11.4	17.1	
<b>BCM Geometric mean</b>							<b>8.10</b>		<b>7.94</b>			

**Lower Androscoggin River 2009 Dissolved Oxygen**  
**Class B Criterion: > 7 ppm instant reading**  
 (\* = value not used; taken during heavy rain event)

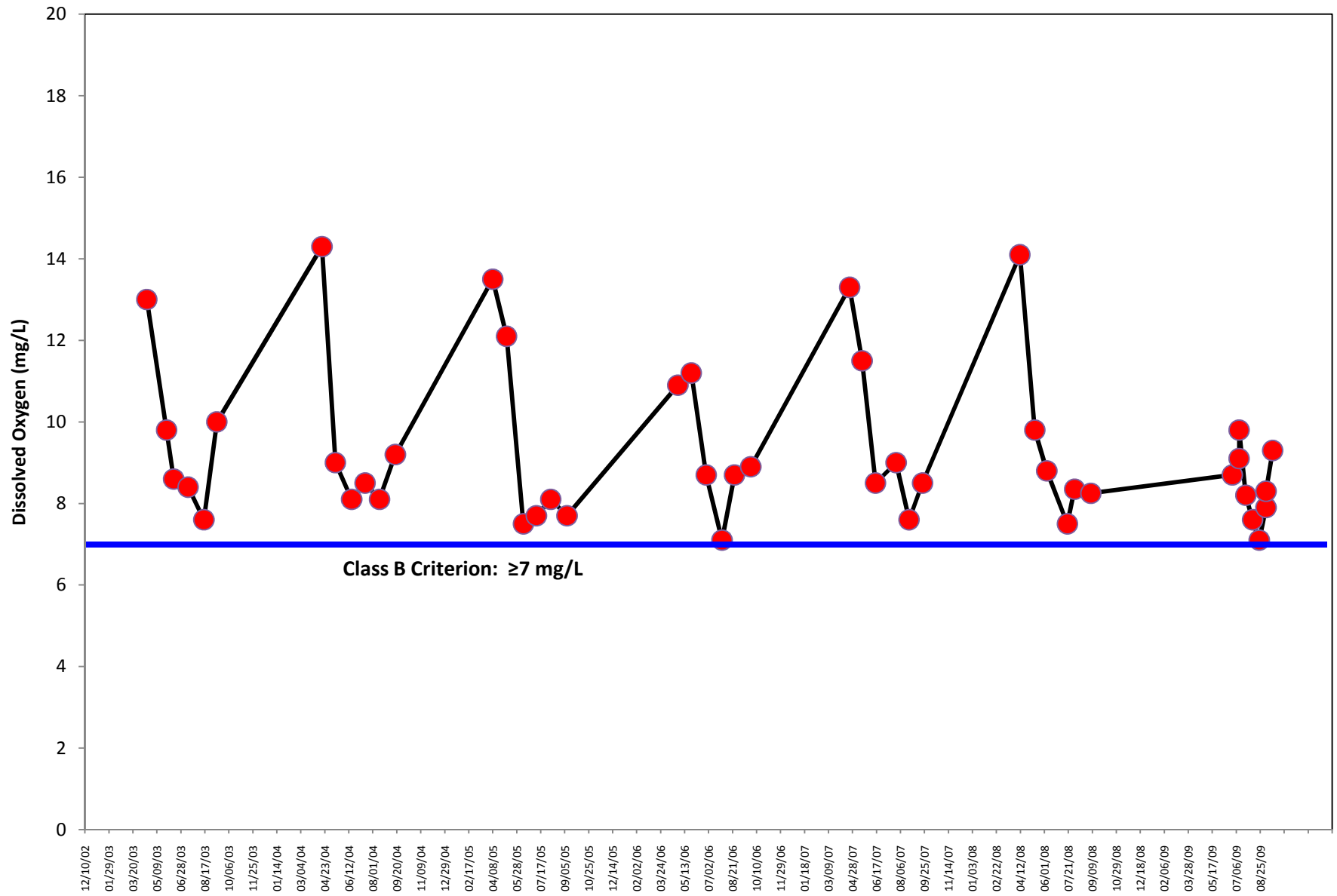
☐ = does not meet criterion; out of compliance				DO-Winkler (ppm) Criterion: > 7 ppm instant			DO-Meter (ppm) Criterion: > 7 ppm instant			Temp		Notes
Date	Sample Time	Weather	Adversities (precip last 48 hrs)	Replicate Data	Rep Data	Heavy Rain Data Excluded	(Mean of Reps)	Rep Data	Heavy Rain Data Excluded	Air (C°)	Water (C°)	
<b><i>Bruns. Water St. Boat Launch</i></b>												
6/28/2009	9:35 AM		P-moderate				8.8		8.8	16.7	10.0	2+ boats
7/12/2009	9:20 AM	overcast	P-moderate				8.8		8.8	14.4	18.0	2+ boats
7/26/2009	7:55 AM	overcast/fog	P-heavy				8.3		*	18.3	15.6	boat
8/9/2009	7:40 AM	clear	P-moderate				7.7		7.7	14.4	21.0	DO- Ed; monthly = throw bottle
9/6/2009	7:45 AM	clear					7.9		7.9	8.9	19.9	DO-KMC
<b>BWS Geometric mean</b>							<b>8.29</b>		<b>8.28</b>			
<b><i>Water St. Mooring [off BWS]</i></b>												
6/28/2009	7:50 AM	overcast	P-low				9.1		9.1		19.4	DO taken at 7' (8.8 DO recorded at shore)
7/12/2009	7:45 AM	overcast	P-low				9.8		9.8		17.9	sample at 7'
7/26/2009	8:40 AM	fog/haze	P-moderate	8.5		8.5	8.6		8.6		20.5	WT at surface: 8.4, 8.4, 8.6; DO meter at surface: 8.5
8/9/2009	7:50 AM	clear					7.8		7.8		21.8	
8/23/2009	7:55 AM						7.4		7.4		25.3	
9/6/2009	8:00 AM	clear					7.9		7.9		20.4	2.5m sample depth
9/20/2009	7:59 AM	clear		8.4		8.4	8.3		8.3	11.4	17.6	
<b>WSM Geometric mean</b>				<b>8.45</b>		<b>8.45</b>	<b>8.38</b>		<b>8.38</b>			
<b><i>Brunswick Bay Bridge</i></b>												
6/28/2009	8:50 AM	overcast	P-moderate				8.7		8.7		18.6	
7/12/2009	8:40 AM	overcast	P-moderate				9.7		9.7		17.7	
7/27/2009	8:20 AM	overcast	P-high				8.3		*			
8/9/2009	7:00 AM						7.5		7.5		20.9	bacteria sample taken at 1:50pm
8/23/2009	7:20 AM						7.3	7.3, 7.3	7.3		25.0	
9/6/2009	7:10 AM	clear					7.5	7.5, 7.5	7.5		19.7	.5 m sample
9/20/2009	7:25 AM	clear		8.5		8.5	8.6		8.6	12.2	17.5	
<b>BBB Geometric mean</b>				<b>8.50</b>		<b>8.50</b>	<b>8.19</b>		<b>8.17</b>			

## Durham Boat Launch Dissolved Oxygen: 2003 - 2009 (Apr - Sep)

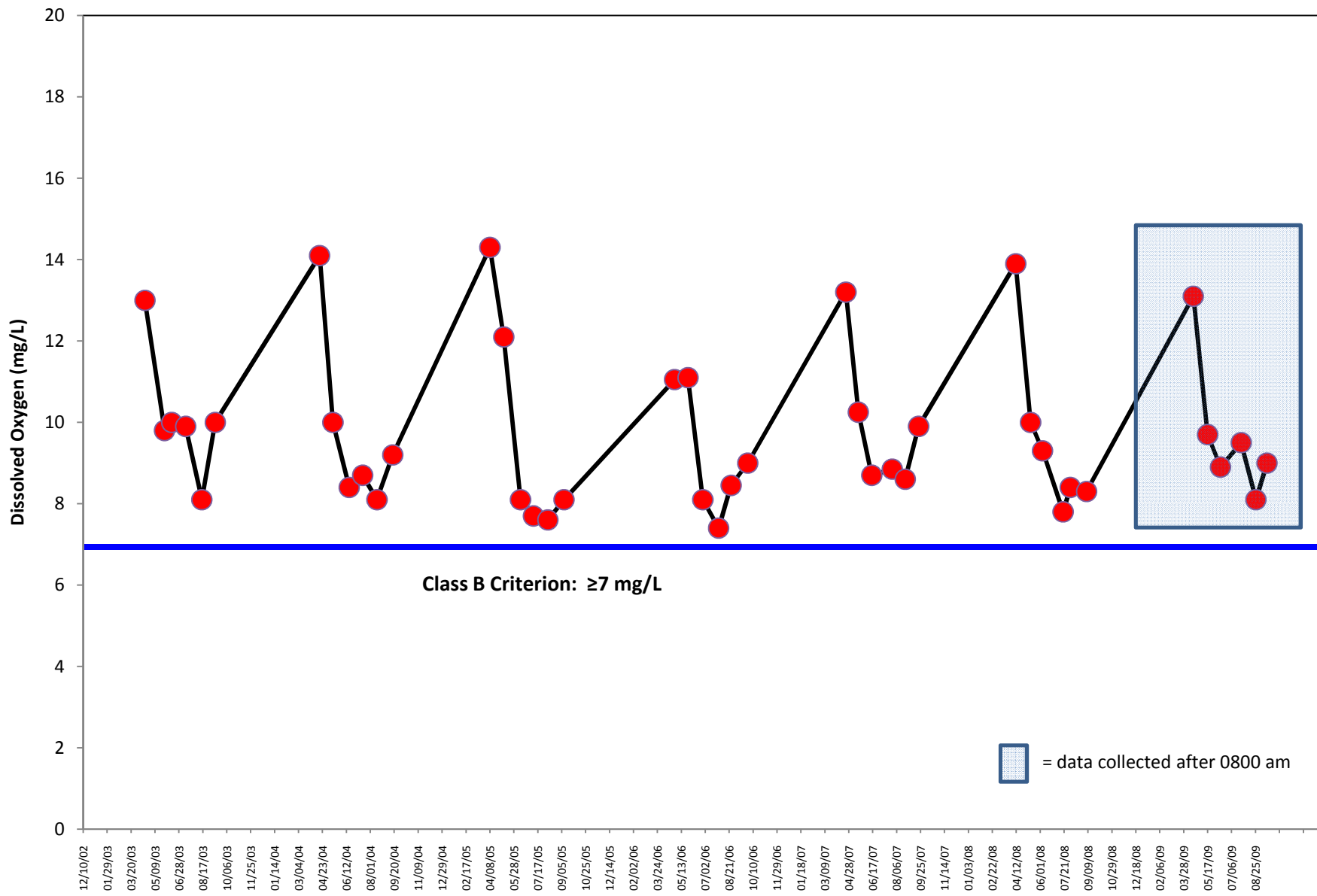




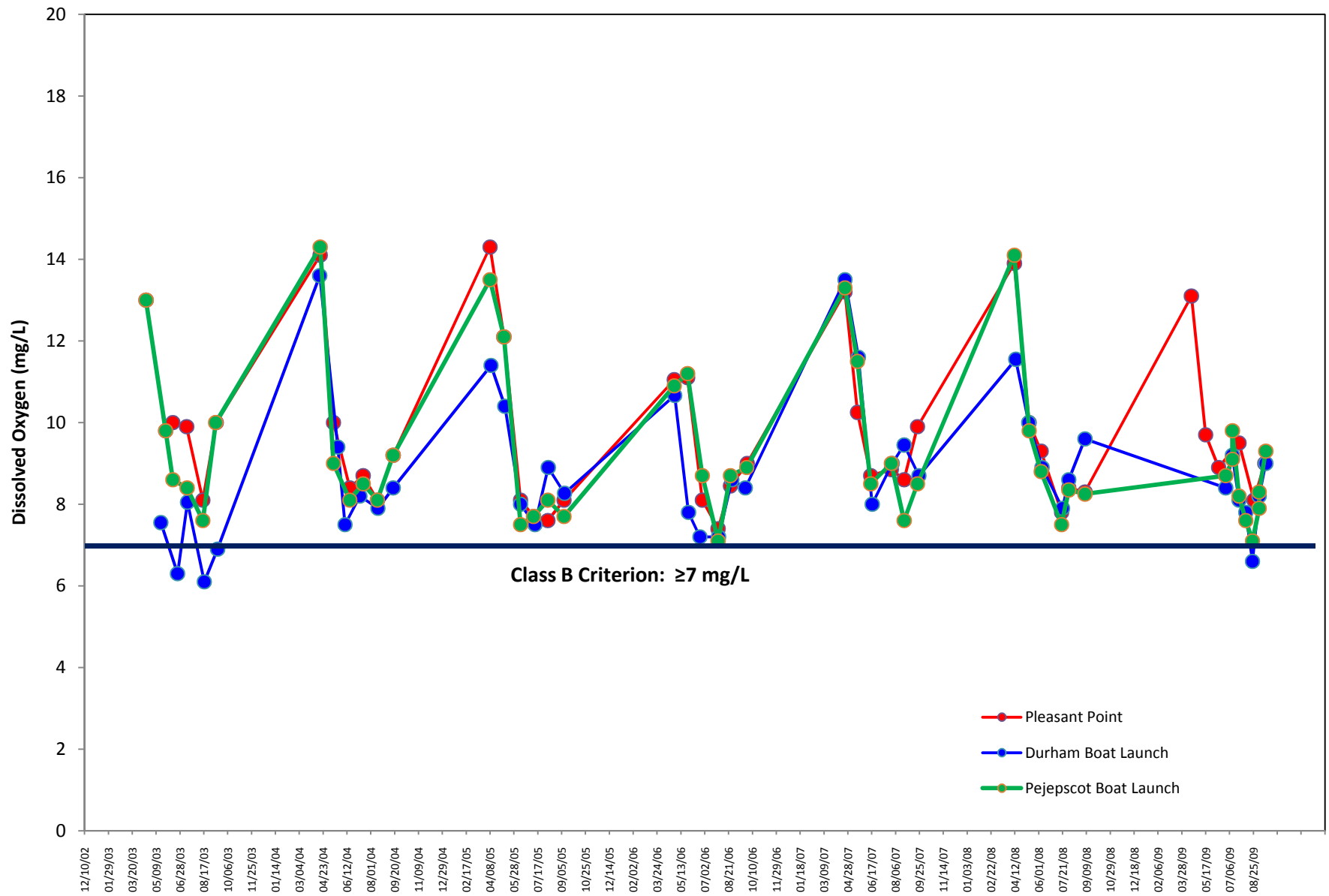
# Pejepscot Boat Launch Dissolved Oxygen: 2003 - 2009 (Apr - Sep)



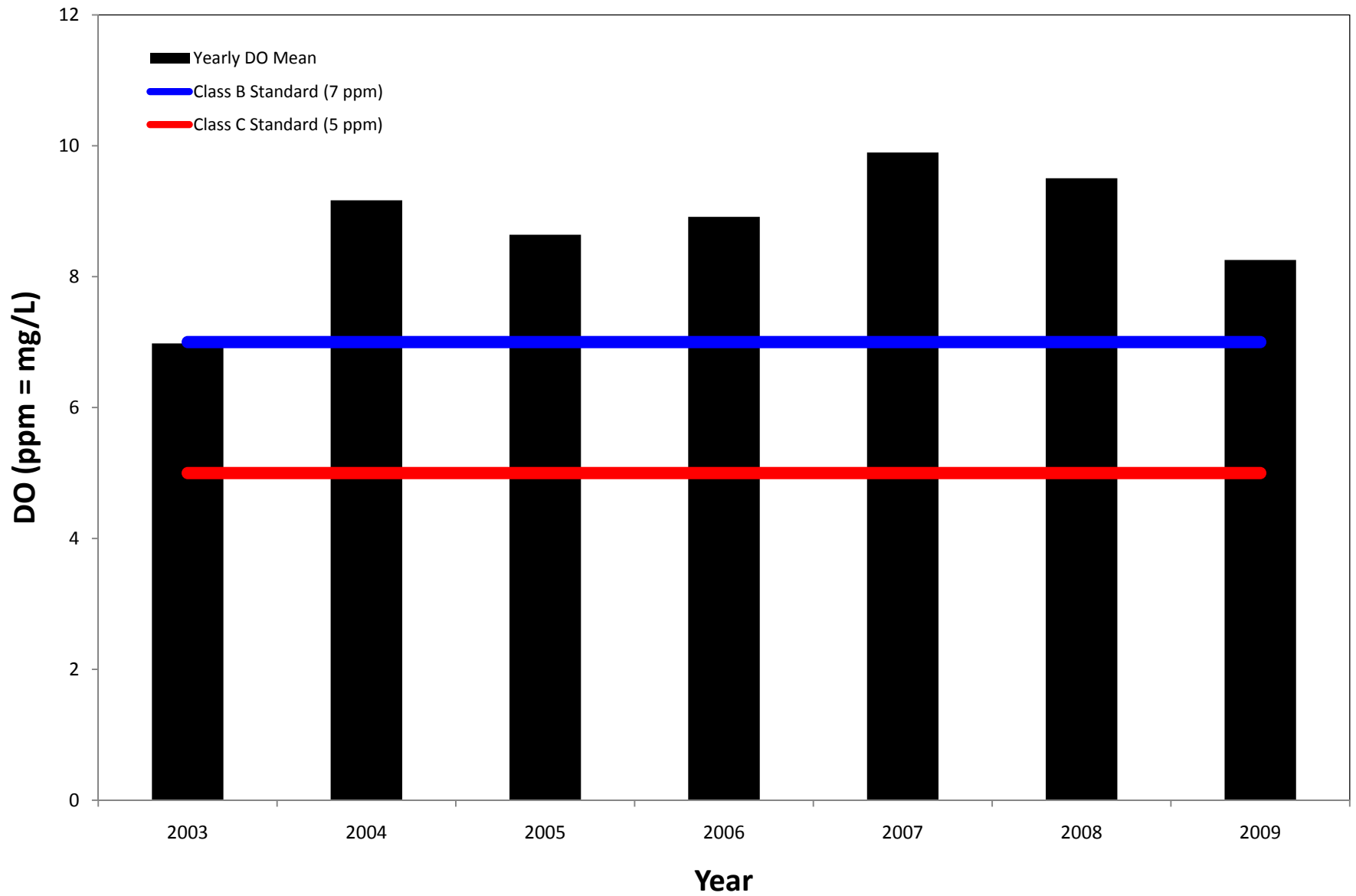
## Pleasant Point Dissolved Oxygen: 2003 - 2009 (Apr - Sep)



## Lower Androscoggin River - All Sites - Dissolved Oxygen 2003 to 2009 (Apr - Sep)

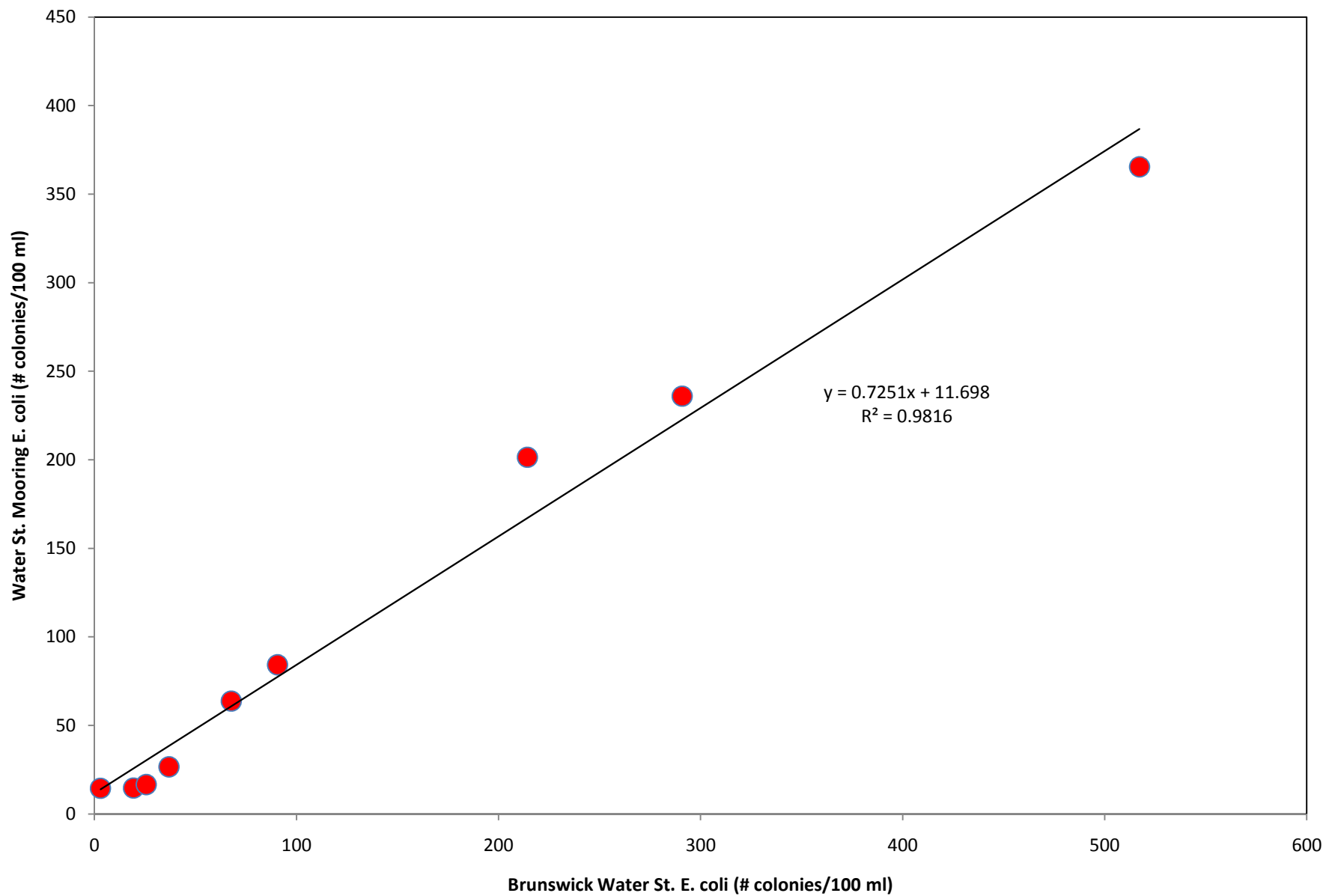


### Yearly DO Means for Lower Androscoggin River vs Class B & C Standards

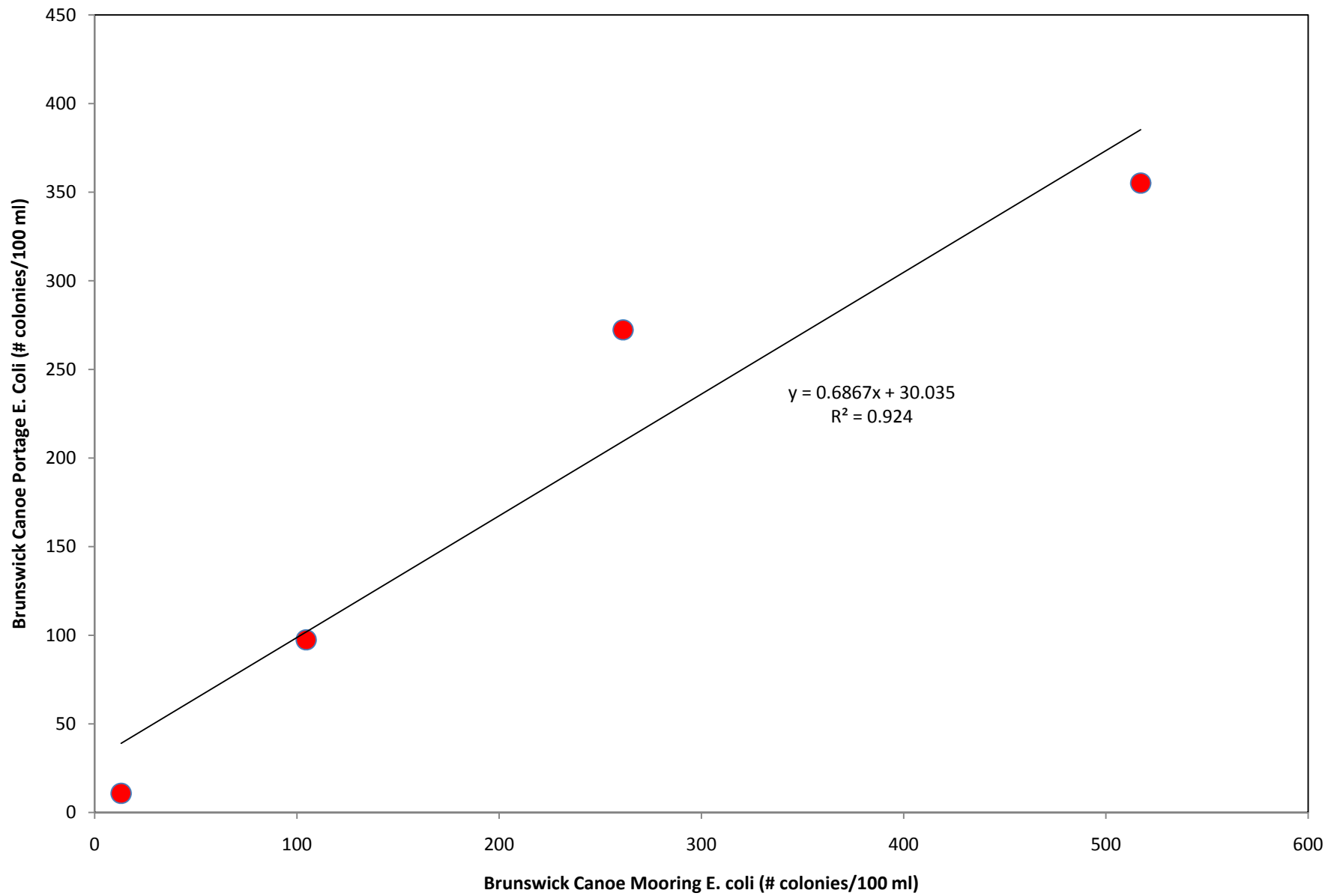


(for 2003 to 2008 Sites = Pleasant Pt., Pejepscot Boat Launch & Durham Boat Launch; for 2009 = all 10 sites monitored)

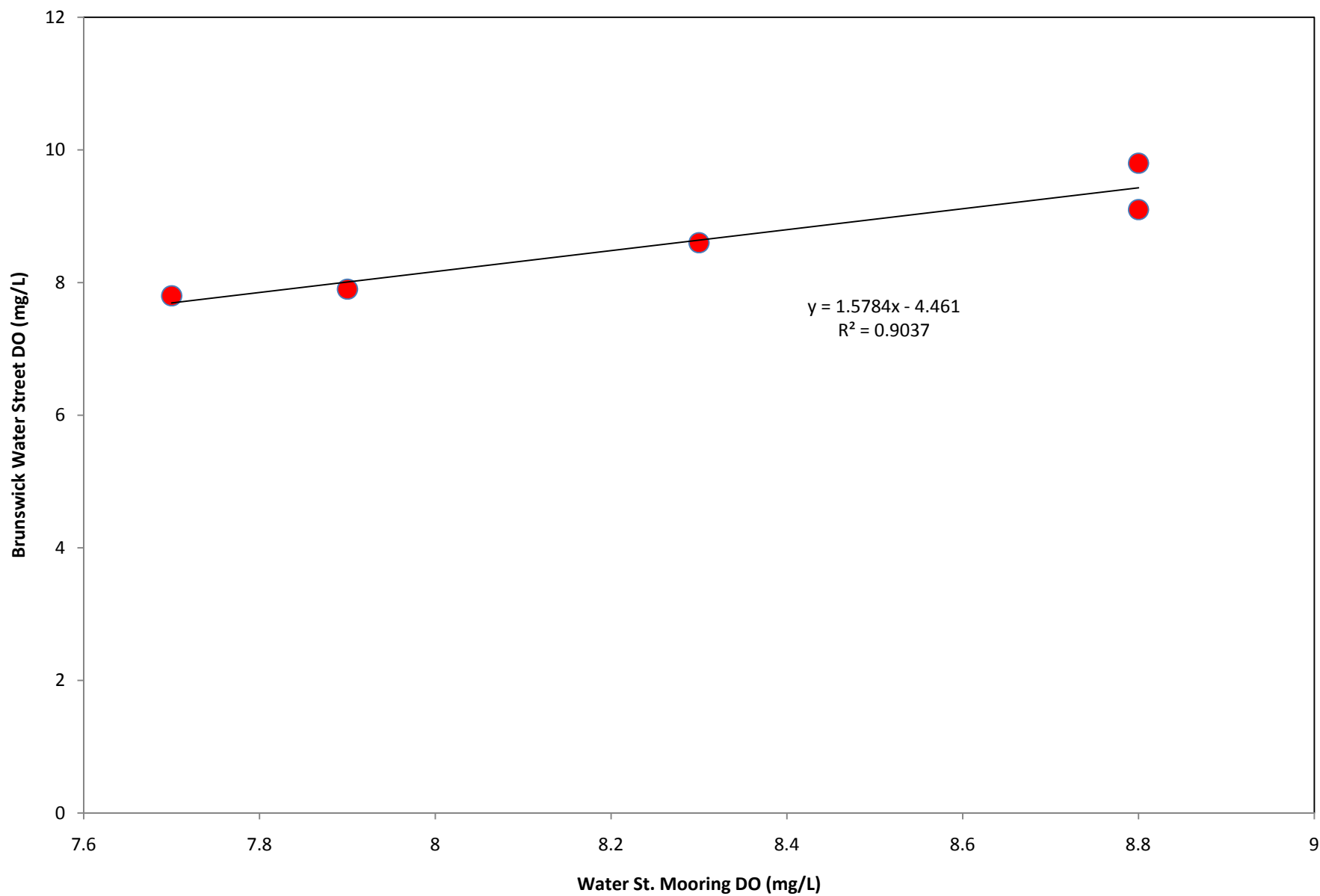
### Brunswick Water St. vs Water St. Mooring - E. coli



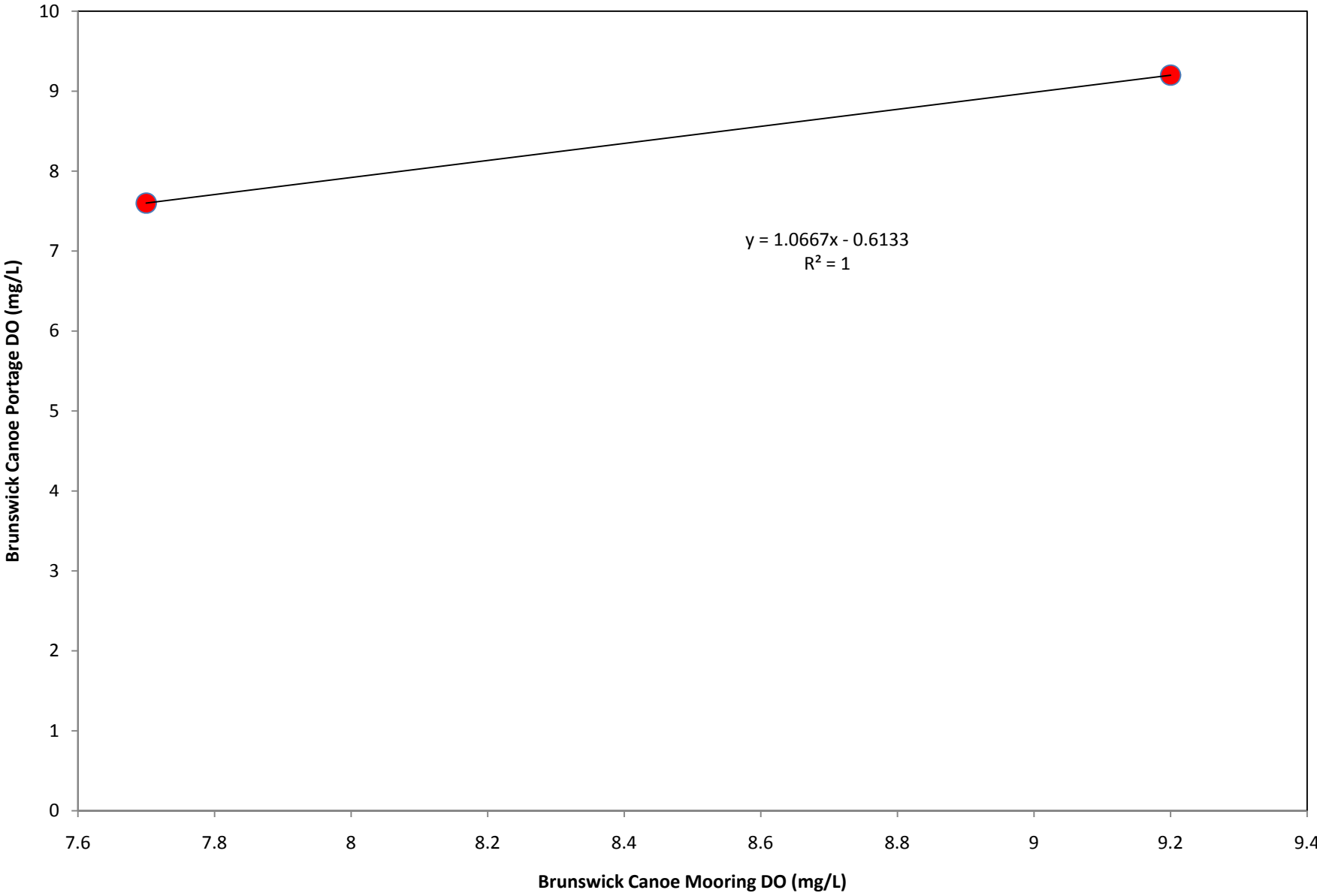
## Brunswick Canoe Portage vs Brunswick Canoe Mooring - E. coli



### Brunswick Water St. vs Water St. Mooring - Dissolved Oxygen



# Brunswick Canoe Portage vs Brunswick Canoe Mooring- Dissolved Oxygen





Appendix I  
Public 163 LD 330 Section 24

PLEASE NOTE: Legislative Information **cannot** perform research, provide legal advice, or interpret Maine law. For legal assistance, please contact a qualified attorney.

## **An Act To Change the Classification of Certain Waters of the State**

**Be it enacted by the People of the State of Maine as follows:**

**Sec. 1. 38 MRSA §467, sub-§1, ¶C**, as amended by PL 2003, c. 317, §2, is further amended to read:

C. Androscoggin River, Upper Drainage; that portion within the State lying above the river's most upstream crossing of the Maine-New Hampshire boundary - Class A unless otherwise specified.

(1) Cupsuptic River and its tributaries - Class AA.

(2) Kennebago River and its tributaries except for the impoundment of the dam at Kennebago Falls - Class AA.

(3) Rapid River, from a point located 1,000 feet downstream of Middle Dam to its confluence with Umbagog Lake - Class AA.

(4) Magalloway River and tributaries above Aziscohos Lake in Lynchton Township, Parmachenee Township and Bowmantown Township - Class AA.

(4-A) Abbott Brook and its tributaries in Lincoln Plantation - Class AA.

(5) Little Magalloway River and tributaries in Parmachenee Township and Bowmantown Township - Class AA.

(6) Long Pond Stream in Rangeley - Class AA.

(7) Dodge Pond Stream in Rangeley - Class AA.

**Sec. 2. 38 MRSA §467, sub-§1, ¶D**, as amended by PL 2003, c. 317, §3, is further amended to read:

D. Androscoggin River, minor tributaries - Class B unless otherwise specified.

(1) All tributaries of the Androscoggin River that enter between the Maine-New Hampshire boundary in Gilead and its confluence with, and including, the Ellis River and that are not otherwise classified - Class A.

(2) Bear River - Class AA.

(3) Sabattus River from Sabattus Lake to limits of the Lisbon urban area - Class C.

- (4) Webb River - Class A.
- (5) Swift River, and its tributaries, above the Mexico-Rumford boundary - Class A.
- (6) Nezinscot River, east and west branches above their confluence in Buckfield - Class A.
- (7) Wild River in Gilead, Batchelders Grant - Class AA.
- (8) Aunt Hannah Brook and its tributaries in Dixfield - Class A.

**Sec. 3. 38 MRSA §467, sub-§4, ¶A**, as amended by PL 2003, c. 317, §6 and affected by §25, is further amended to read:

A. Kennebec River, main stem.

- (1) From the east outlet of Moosehead Lake to a point 1,000 feet below the lake - Class A.
- (2) From the west outlet of Moosehead Lake to a point 1,000 feet below the lake - Class A.
- (3) From a point 1,000 feet below Moosehead Lake to its confluence with Indian Pond - Class AA.
- (4) From Harris Dam to a point located 1,000 feet downstream from Harris Dam - Class A.
- (5) From a point located 1,000 feet downstream from Harris Dam to its confluence with the Dead River - Class AA.
- (6) From its confluence with the Dead River to the confluence with Wyman Lake, including all impoundments - Class A.
- (7) From the Wyman Dam to its confluence with the impoundment formed by the Williams Dam - Class A.
- (8) From the confluence with the Williams impoundment to the Route 201A bridge in Anson-Madison, including all impoundments - Class A.
- (9) From the Route 201A bridge in Anson-Madison to the Fairfield-Skowhegan boundary, including all impoundments - Class B.
- (10) From the Fairfield-Skowhegan boundary to ~~its confluence with Messalonskee Stream, including all impoundments~~ the Shawmut Dam - Class C.
- (10-A) From the Shawmut Dam to its confluence with Messalonskee Stream, excluding all impoundments - Class B.

(a) Waters impounded by the Hydro-Kennebec Dam and the Lockwood Dam in Waterville-Winslow - Class C.

(11) From its confluence with Messalonskee Stream to the Sidney-Augusta boundary, including all impoundments - Class B.

(12) From the Sidney-Augusta boundary to the Father John J. Curran Bridge in Augusta, including all impoundments - Class B.

(13) From the Father John J. Curran Bridge in Augusta to a line drawn across the tidal estuary of the Kennebec River due east of Abagadasset Point - Class B. Further, the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained. Further, the license limits for total residual chlorine and bacteria for existing direct discharges of wastewater to this segment as of January 1, 2003 must remain the same as the limits in effect on that date and must remain in effect until June 30, 2009 or upon renewal of the license, whichever comes later. Thereafter, license limits for total residual chlorine and bacteria must be those established by the department in the license and may include a compliance schedule pursuant to section 414-A, subsection 2.

(14) From a line drawn across the tidal estuary of the Kennebec River due east of Abagadasset Point, to a line across the southwesterly area of Merrymeeting Bay formed by an extension of the Brunswick-Bath boundary across the bay in a northwesterly direction to the westerly shore of Merrymeeting Bay and to a line drawn from Chop Point in Woolwich to West Chop Point in Bath - Class B. Further, the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained.

**Sec. 4. 38 MRSA §467, sub-§4, ¶I**, as repealed and replaced by PL 1989, c. 228, §2, is amended to read:

I. Kennebec River, minor tributaries - Class B unless otherwise specified.

(1) All minor tributaries entering above Wyman Dam that are not otherwise classified - Class A.

(2) All tidal portions of tributaries entering between ~~Edwards Dam~~ the Sidney-Vassalboro-Augusta town line and a line drawn across the tidal estuary of the Kennebec River due east of Abagadasset Point - Class ~~C~~ B, unless otherwise specified.

(a) Eastern River from head of tide to its confluence with the Kennebec River - Class C.

(3) Cold Stream, West Forks Plantation - Class AA.

(4) Moxie Stream, Moxie Gore, below a point located 1,000 feet downstream of the Moxie

Pond dam - Class AA.

(5) Austin Stream and its tributaries above the highway bridge of Route 201 in the Town of Bingham - Class A.

**Sec. 5. 38 MRSA §467, sub-§7, ¶E**, as amended by PL 1999, c. 277, §11, is further amended to read:

E. Piscataquis River Drainage.

(1) Piscataquis River, main stem.

(a) From the confluence of the East Branch and the West Branch to the Route 15 bridge in Guilford - Class A.

(b) From the Route 15 bridge in Guilford to the Maine Central Railroad bridge in Dover-Foxcroft - Class B.

(c) From the Maine Central Railroad bridge in Dover-Foxcroft to its confluence with the Penobscot River - Class B.

(2) Piscataquis River, tributaries - Class B unless otherwise specified.

(a) Except as otherwise provided, East and West Branches of the Piscataquis River and their tributaries above their confluence near Blanchard - Class A.

(b) East Branch of the Piscataquis River from 1,000 feet below Shirley Pond to its confluence with the West Branch - Class AA.

(c) Pleasant River, East Branch and its tributaries - Class A.

(d) Pleasant River, West Branch, from the outlet of Fourth West Branch Pond to its confluence with the East Branch - Class AA.

(e) Pleasant River, West Branch tributaries - Class A.

(f) Sebec River and its tributaries above Route 6 in Milo - Class A.

(g) West Branch of the Piscataquis River from 1,000 feet below West Shirley Bog to its confluence with the East Branch - Class AA.

(h) Black Stream - Class A.

(i) Cold Stream - Class A.

(j) Kingsbury Stream - Class A.

(k) Schoodic Stream - Class A.

(l) Scutaze Stream - Class A.

(m) ~~Sebois~~Seboeis Stream, including East and West Branches, and tributaries - Class A.

(n) Alder Stream and its tributaries - Class A.

**Sec. 6. 38 MRSA §467, sub-§7, ¶F**, as amended by PL 2003, c. 317, §13, is further amended to read:

F. Penobscot River, minor tributaries - Class B unless otherwise specified.

(1) Cambolasse Stream (Lincoln) below the Route 2 bridge - Class C.

(2) Great Works Stream (Bradley) and its tributaries above the Route 178 bridge - Class A.

(3) Kenduskeag Stream (Bangor) below the Bullseye Bridge - Class C.

(4) Mattanawcook Stream (Lincoln) below the outlet of Mattanawcook Pond - Class C.

(5) Olamon Stream and its tributaries above the bridge on Horseback Road - Class A.

(6) Passadumkeag River and its tributaries - Class A, unless otherwise specified.

(a) Passadumkeag River from the Pumpkinhill Dam to its confluence with the Penobscot River - Class AA.

(b) Ayers Brook - Class AA.

(7) Souadabscook Stream above head of tide - Class AA.

(7-A) Souadabscook Stream, tributaries of - Class B, unless otherwise specified.

(a) West Branch Souadabscook Stream (Hampden, Newburgh) - Class A.

(b) Brown Brook (Hampden) - Class A.

(8) Sunkhaze Stream and its tributaries - Class AA.

(9) Birch Stream - Class A.

(10) Hemlock Stream - Class A.

(11) Mattamiscontis Stream and its tributaries - Class A.

(12) Medunkeunk Stream - Class A.

(13) Rockabema Stream - Class A.

(14) Salmon Stream - Class A.

(15) Salmon Stream in Winn - Class A.

(16) Little Salmon Stream in Medway - Class A.

(17) Narrimissic River in Bucksport and Orland, including all impoundments - Class B.

**Sec. 7. 38 MRSA §467, sub-§9, ¶B**, as amended by PL 1991, c. 499, §16, is further amended to read:

B. Presumpscot River, tributaries - Class A unless otherwise specified.

(1) All tributaries entering below the outlet of Sebago Lake - Class B.

(2) Crooked River and its tributaries, except as otherwise provided, excluding existing impoundments ~~and excluding that area of the river previously impounded at Scribners Mill~~ - Class AA.

(3) Stevens Brook (Bridgton) - Class B.

(4) Mile Brook (Casco) - Class B.

**Sec. 8. 38 MRSA §467, sub-§12, ¶B**, as amended by PL 2003, c. 317, §15, is further amended to read:

B. Saco River, tributaries, those waters lying within the State - Class B unless otherwise specified.

(1) All tributaries entering above the confluence of the Ossipee River lying within the State

and not otherwise classified - Class A.

(2) Wards Brook (Fryeburg) - Class C.

(3) Buff Brook (Waterboro) - Class A.

(4) Ossipee River Drainage, those waters lying within the State - Class B unless otherwise specified.

(a) Emerson Brook in Parsonsfield - Class A.

(b) South River and its tributaries (Parsonsfield), those waters lying within the State - Class A.

**Sec. 9. 38 MRSA §467, sub-§13, ¶A**, as repealed and replaced by PL 1989, c. 764, §14, is amended to read:

A. St. Croix River, main stem.

(1) Except as otherwise provided, from the outlet of Chiputneticook Lakes to its confluence with the Woodland Lake impoundment, those waters lying within the State - Class A.

(2) Those waters ~~of~~ impounded in the Grand Falls Flowage including those waters between Route 1 (Princeton and Indian Township) and ~~Black-Cat Island~~ Grand Falls Dam - Class BGPA.

(3) Woodland Lake impoundment - Class C.

(4) From the Woodland Dam to tidewater, those waters lying within the State, including all impoundments - Class C.

**Sec. 10. 38 MRSA §467, sub-§15, ¶C**, as amended by PL 2003, c. 317, §17, is further amended to read:

C. Aroostook River Drainage.

(1) Aroostook River, main stem.

(a) From the confluence of Millinocket Stream and Munsungan Stream to the Route 11 bridge - Class AA.

(b) From the Route 11 bridge to the Sheridan Dam - Class B.



- (c) From the Sheridan Dam to its confluence with Presque Isle Stream, including all impoundments - Class B.
  - (d) From its confluence with Presque Isle Stream to a point located 3.0 miles upstream of the intake of the Caribou water supply, including all impoundments - Class C.
  - (e) From a point located 3.0 miles upstream of the intake of the Caribou water supply to a point located 100 yards downstream of the intake of the Caribou water supply, including all impoundments - Class B.
  - (f) From a point located 100 yards downstream of the intake of the Caribou water supply to the international boundary, including all impoundments - Class C.
- (2) Aroostook River, tributaries, those waters lying within the State - Class A unless otherwise specified.
- (a) All tributaries of the Aroostook River entering below the confluence of the Machias River that are not otherwise classified - Class B.
  - (b) Little Machias River and its tributaries - Class A.
  - (c) Little Madawaska River and its tributaries, including Madawaska Lake tributaries above the Caribou-Connor Township line - Class A.
  - (d) Machias River, from the outlet of Big Machias Lake to the Aroostook River - Class AA.
  - (e) Millinocket Stream, from the outlet of Millinocket Lake to its confluence with Munsungan Stream - Class AA.
  - (f) Munsungan Stream, from the outlet of Little Munsungan Lake to its confluence with Millinocket Stream - Class AA.
  - (g) Presque Isle Stream and its tributaries above the Mapleton-Presque Isle town line - Class A.
  - (h) St. Croix Stream from its confluence with Hall Brook in T.9, R.5, W.E.L.S. to its confluence with the Aroostook River - Class AA.

(j) Squa Pan Stream from the outlet of Squa Pan Lake to its confluence with the Aroostook River - Class C.

(k) Limestone Stream from the Long Road bridge to the Canadian border - Class C.

(l) Beaver Brook and its tributaries (T.14 R.6 W.E.L.S., T.14 R.5 W.E.L.S., T.13 R.5 W.E.L.S., Portage Lake, Ashland, Castle Hill) - Class A.

(m) Gardner Brook and its tributaries (T.14 R.5 W.E.L.S., T.13 R.5 W.E.L.S., Wade) - Class A.

**Sec. 11. 38 MRSA §467, sub-§15, ¶F**, as amended by PL 2003, c. 317, §18, is further amended to read:

F. St. John River, minor tributaries, those waters lying within the State - Class A unless otherwise specified.

(1) Except as otherwise classified, all minor tributaries of the St. John River entering below the international bridge in Fort Kent, those waters lying within the State - Class B.

(2) Baker Branch, from the headwaters at the St. John Ponds to its confluence with the Southwest Branch - Class AA.

(3) Big Black River, from the international boundary to its confluence with the St. John River - Class AA.

(4) Northwest Branch, from the outlet of Beaver Pond in T.12, R.17, W.E.L.S. to its confluence with the St. John River - Class AA.

(5) Prestile Stream from its source to Route 1A in Mars Hill - Class A.

(6) Southwest Branch, from a point located 5 miles downstream of the international boundary to its confluence with the Baker Branch - Class AA.

(7) Violette Stream and its tributaries, from its source to the confluence with Caniba Brook - Class A.

**Sec. 12. 38 MRSA §467, sub-§16, ¶B**, as amended by PL 1999, c. 277, §22, is further amended to read:

B. Salmon Falls River, tributaries, those waters lying within the State - Class B unless otherwise specified.

(1) Chicks Brook (South Berwick, York) - Class A.

(2) Little River and its tributaries (Berwick, North Berwick, Lebanon) - Class A.

**Sec. 13. 38 MRS §468, sub-§1, ¶A-1** is enacted to read:

A-1. Cape Elizabeth.

(1) Trout Brook, those waters that form the town boundary with South Portland - Class C.

**Sec. 14. 38 MRS §468, sub-§1, ¶B**, as repealed and replaced by PL 1989, c. 764, §21, is amended to read:

B. Portland.

(1) All minor drainages unless otherwise specified - Class C.

(2) Stroudwater River from its origin to tidewater, including all tributaries - Class B.

**Sec. 15. 38 MRS §468, sub-§1, ¶C**, as repealed and replaced by PL 1989, c. 764, §21, is amended to read:

C. Scarborough.

(1) All minor drainages - Class C unless otherwise specified.

(2) Finnard Brook - Class B.

(3) Stuart Brook - Class B.

(4) Nonesuch River from the headwaters to a point 1/2 mile downstream of Mitchell Hill Road crossing - Class B.

(5) Stroudwater River from its origin to tidewater, including all tributaries - Class B.

**Sec. 16. 38 MRS §468, sub-§1, ¶D**, as repealed and replaced by PL 1989, c. 764, §21, is amended to read:

D. South Portland.

(1) All minor drainages - Class C.

(2) Trout Brook downstream of the first point where the brook becomes the town boundary between South Portland and Cape Elizabeth - Class C.

**Sec. 17. 38 MRS §468, sub-§1, ¶J** is enacted to read:

J. Westbrook.

(1) Long Creek, main stem - Class C.

**Sec. 18. 38 MRSA §468, sub-§4, ¶D** is enacted to read:

D. Bristol.

(1) Pemaquid River and its tributaries, all freshwater sections below Pemaquid Pond - Class A.

**Sec. 19. 38 MRSA §468, sub-§7, ¶D** is enacted to read:

D. Black Brook in Lincolnville - Class A.

**Sec. 20. 38 MRSA §468, sub-§7, ¶E** is enacted to read:

E. Kendall Brook in Lincolnville - Class A.

**Sec. 21. 38 MRSA §468, sub-§7, ¶F** is enacted to read:

F. Tucker Brook in Lincolnville - Class A.

**Sec. 22. 38 MRSA §469, sub-§5, ¶B**, as enacted by PL 1989, c. 764, §27, is amended to read:

B. Phippsburg.

(1) Tidal waters east of longitude 69°-50'-05" W. and west of longitude 69°-47'-00" W. - Class SA.

(2) Tidal waters of The Basin, including The Narrows east of a line drawn between 69°-51'-57" W. and 43°-48'-14" N. - Class SA.

**Sec. 23. Report concerning procedures for reclassification.** The Department of Environmental Protection shall review the current procedures for reclassification contained in the Maine Revised Statutes, Title 38, section 464, subsection 2 and suggest any changes or clarifications needed to make the procedures more consistent and efficient while maintaining a full public review process. The recommendations may include draft legislation. The report must be submitted to the Joint Standing Committee on Natural Resources by January 15, 2010 and the committee may submit legislation related to this report to the Second Regular Session of the 124th Legislature.

**Sec. 24. Lower Androscoggin River water quality sampling; report; legislation.** The Department of Environmental Protection, with the assistance of and in consultation with volunteer river monitors, shall establish and implement a water quality sampling program for the lower Androscoggin River from Gulf Island Dam to the line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction.

**1. Timing.** The water quality sampling program must occur during the 2009 sampling season.

**2. Purpose.** The purpose of the water quality sampling program implemented under this section is to allow additional water quality data to be collected to determine if the section of the Androscoggin River from Worumbo Dam in Lisbon Falls to the line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction meets, or can reasonably be expected

to meet, the criteria for reclassification from Class C to Class B.

**3. Reclassification procedures.** Unless the Department of Environmental Protection is unable to obtain the required monitoring data due to excessive rainfall or other unforeseen events, or unless the monitoring data indicate an upgrade is unwarranted, the department shall initiate the procedures for reclassification in accordance with the Maine Revised Statutes, Title 38, section 464, subsection 2 to upgrade the lower Androscoggin River from Worumbo Dam in Lisbon Falls to the line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction from Class C to Class B.

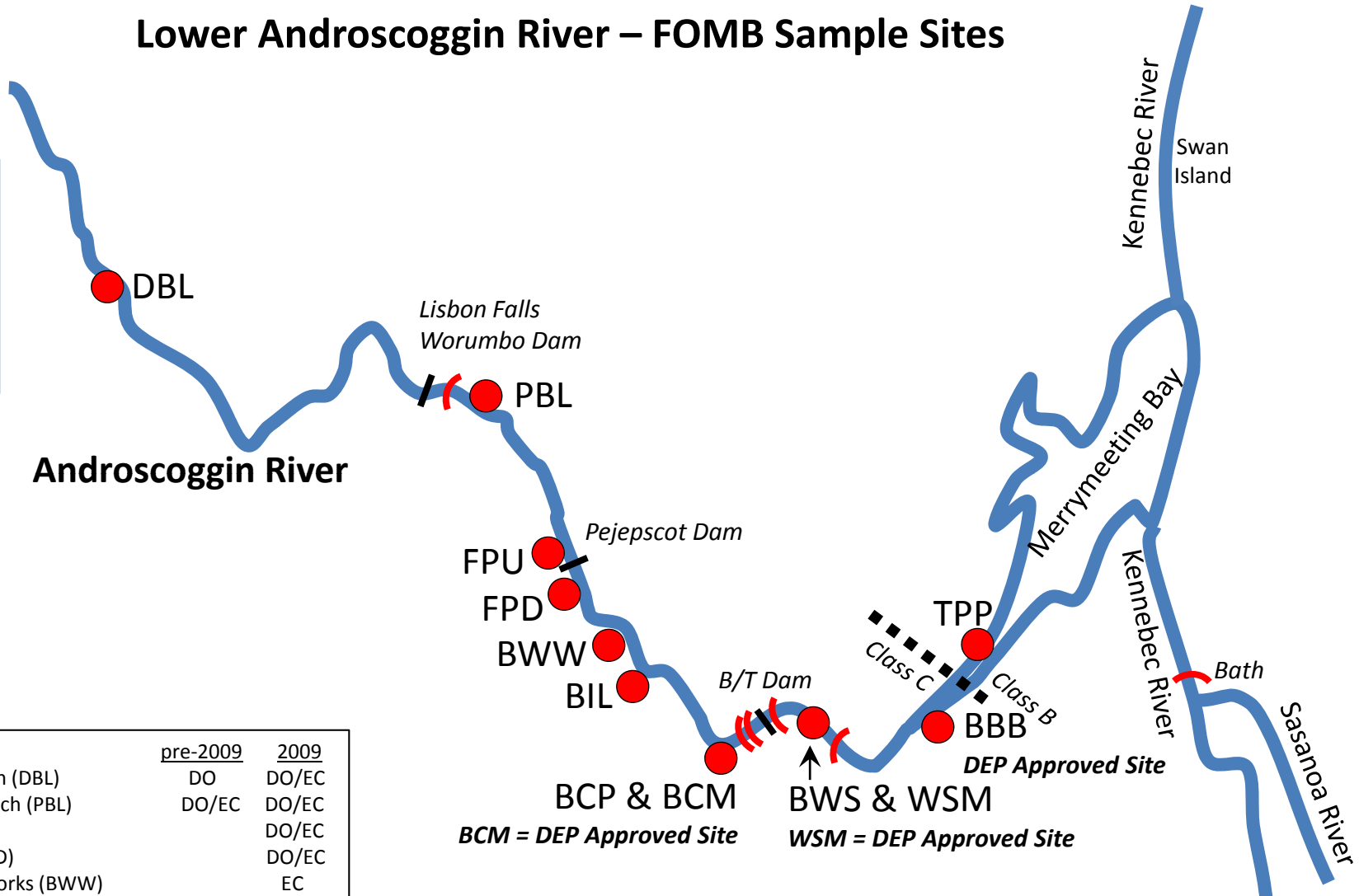
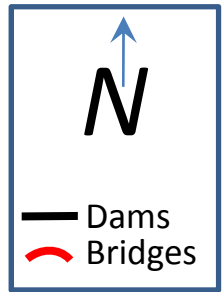
**4. Report.** By February 15, 2010, the Department of Environmental Protection shall submit a report, including recommendations and any necessary implementing legislation, in connection with the water quality sampling program required under this section to the Joint Standing Committee on Natural Resources.

**5. Legislation authorized.** The Joint Standing Committee on Natural Resources may report out legislation relating to the subject matter of this section to the Second Regular Session of the 124th Legislature.

Effective September 12, 2009

Appendix 2  
Map Lower Androscoggin River

# Lower Androskoggin River – FOMB Sample Sites



	<u>pre-2009</u>	<u>2009</u>
Durham Boat Launch (DBL)	DO	DO/EC
Pejepscot Boat Launch (PBL)	DO/EC	DO/EC
Fish Park Up (FPU)		DO/EC
Fish Park Down (FPD)		DO/EC
Brunswick Water Works (BWW)		EC
Brunswick Interstate Ledges (BIL)		DO/EC
Brunswick Canoe Portage (BCP)		DO/EC
Brunswick Canoe Mooring (BCM)		DO/EC
Brunswick Water St. Boat Launch (BWS)	EC	DO/EC
Water Street Mooring (WSM)		DO/EC
Brunswick Bay Bridge (BBB)	EC	DO/EC
Topsham Pleasant Pt. (TPP)	DO	DO

**BCP & BCM**  
**BCM = DEP Approved Site**

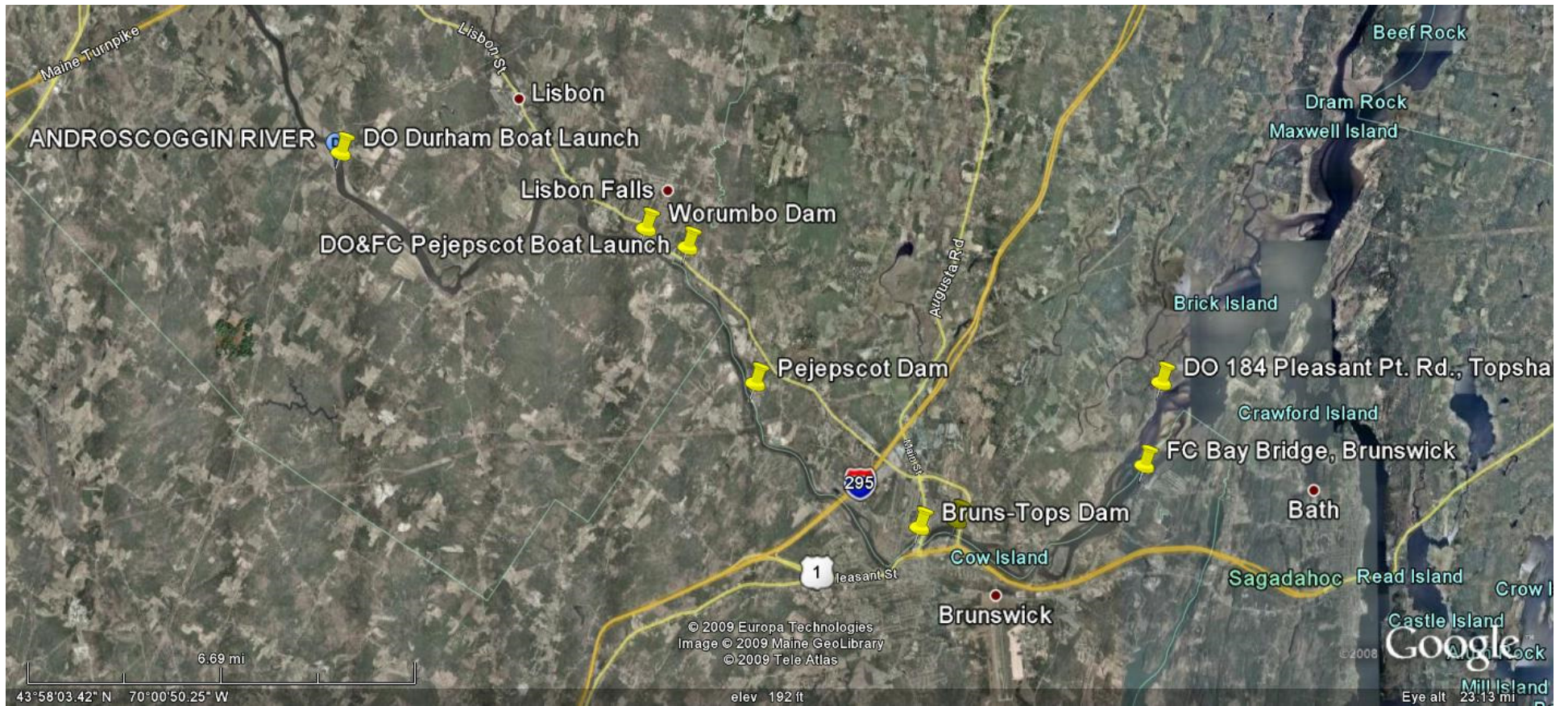
**BWS & WSM**  
**WSM = DEP Approved Site**

**TPP**  
**DEP Approved Site**

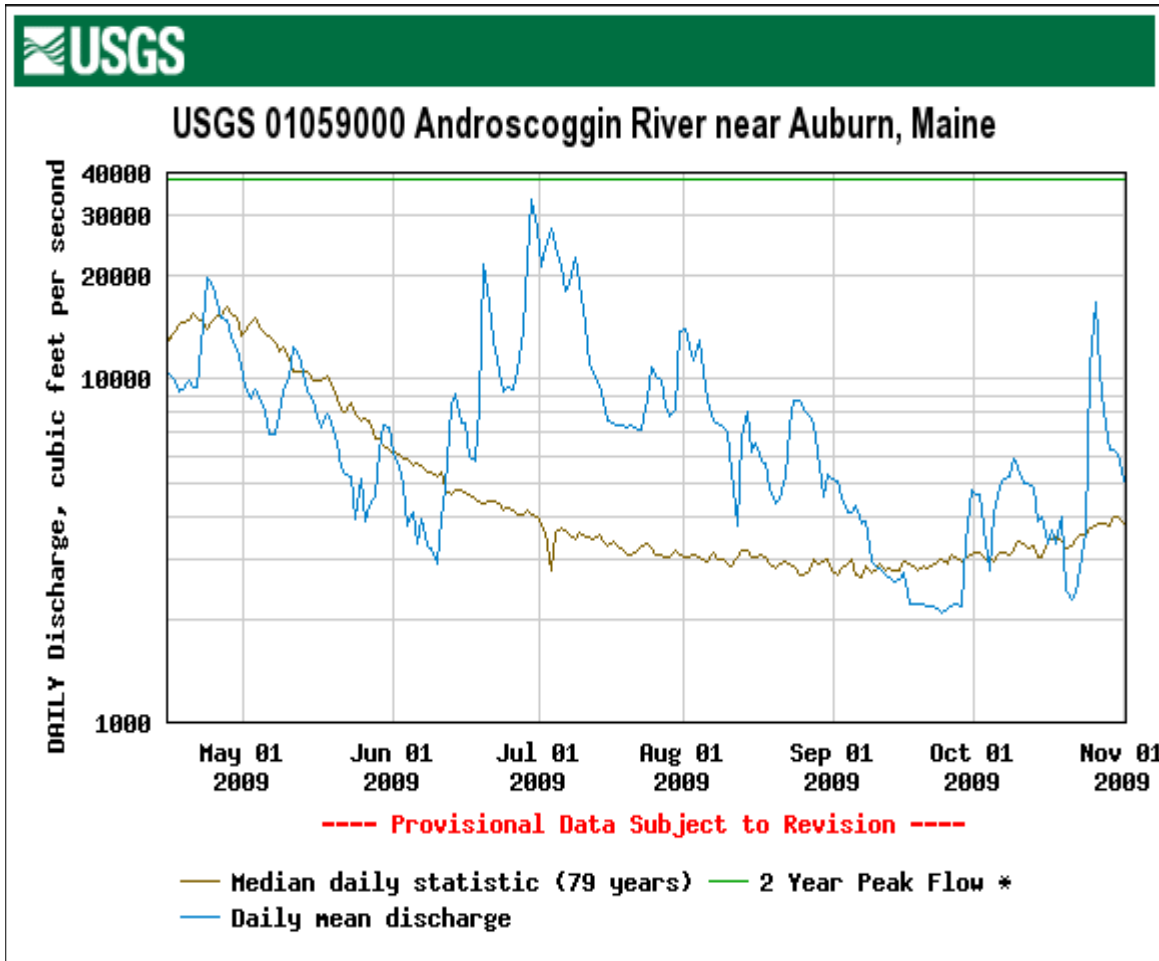
<b>Upstream Monitoring</b>	<u>pre-2009</u>	<u>2009</u>
Gulf Island Pond Above	DO	
Gulf Island Pond Below (Bates Boathouse)	DO	
Auburn Boat Launch		DO

Appendix 3  
Lower Androscoggin River  
Aerial View Map





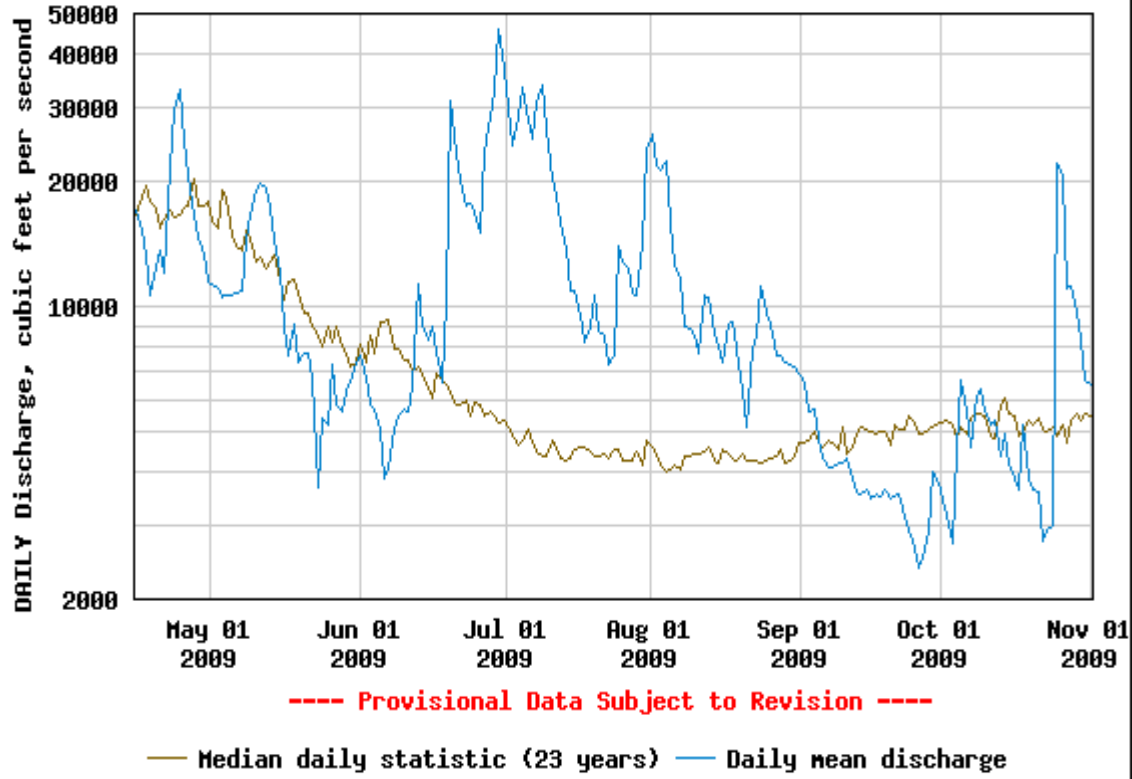
Appendix 4  
USGS Monthly Flows  
Lower Androscoggin River - Auburn



Appendix 5  
USGS Monthly Flows  
Lower Androscoggin River - Sidney



### USGS 01049265 Kennebec River at North Sidney, Maine



Appendix 6  
National Weather  
Portland Summary  
2009

000  
 CXUS51 KGYX 061615  
 CLAPWM

PORTLAND CLIMATE DATA FOR THE YEAR 2009  
 NATIONAL WEATHER SERVICE GRAY ME  
 1115 AM EST WED JAN 6 2010

THE YEAR 2009 IN PORTLAND MAINE WILL GO INTO THE RECORD BOOKS AS ONE OF THE WETTEST YEARS EVER RECORDED IN THE PAST 139 YEARS. HERE ARE SOME OF THE CLIMATOLOGICAL STATISTICS AND A DISCUSSION OF THE WEATHER HIGHLIGHTS FOR THE PAST YEAR.

TEMPERATURE DATA	YEAR 2009	NORMAL	DEPARTURE
AVG. MONTHLY	46.1	45.7	PLUS 0.4
AVG. MAXIMUM	55.1	55.2	MINUS 0.1
AVG. MINIMUM	37.1	36.3	PLUS 0.8

NUMBER OF DAYS:	YEAR 2009	NORMAL	
MAXIMUM 90 OR ABOVE	4	4.5	MINUS 0.5
MAXIMUM 32 OR BELOW	48	47.7	PLUS 0.3
MINIMUM 32 OR BELOW	139	154.7	MINUS 15.7
MINIMUM 0 OR BELOW	10	13.3	MINUS 3.3

HIGHEST TEMPERATURE... 92 ON APRIL 28TH  
 LOWEST TEMPERATURE... -16 ON JANUARY 16TH  
 COLDEST HIGH... 14 ON JANUARY 15TH & 16TH  
 WARMEST LOW.... 71 ON AUGUST 23RD

WARMEST DAY... AUGUST 19TH WITH AN AVERAGE OF 80 DEGREES  
 COLDEST DAY... JANUARY 16TH WITH AN AVERAGE OF -1 DEGREE

	YEAR 2009	NORMAL	DEPARTURE
HEATING DEGREE DAYS	7076	7318	MINUS 242
COOLING DEGREE DAYS	304	347	MINUS 43

HEATING AND COOLING DEGREE DAYS LISTED ARE FOR THE CALENDAR YEAR. THE HEATING DEGREE DAY SEASON NORMALLY RUNS FROM JULY 1ST THROUGH JUNE 30TH...WHILE THE COOLING DEGREE SEASON NORMALLY RUNS FROM JANUARY 1ST THROUGH DECEMBER 31ST.

	YEAR 2009	NORMAL	DEPARTURE
PRECIPITATION	58.61	45.83	PLUS 12.78
SNOWFALL	67.7	66.4	PLUS 1.3

GREATEST PRECIPITATION IN 24 HOURS... 5.25 INCHES ON NOVEMBER 14-15TH  
 GREATEST SNOWFALL IN 24 HOURS... 11.6 INCHES ON JANUARY 18-19TH  
 GREATEST SNOW DEPTH ON GROUND... 16 INCHES ON JANUARY 29TH

THE FOLLOWING DATA IS FOR A CALENDAR DAY /MIDNIGHT TO MIDNIGHT/...

NUMBER OF DAYS WITH PRECIPITATION OF		NORMAL	DEPARTURE
.01 INCH OR MORE	136	128.1	PLUS 7.9
.10 INCH OR MORE	81	77.3	PLUS 3.7
.50 INCH OR MORE	33	28.9	PLUS 4.1
1.00 INCH OR MORE	19	10.7	PLUS 8.3

NUMBER OF DAYS WITH SNOWFALL OF		NORMAL	DEPARTURE
---------------------------------	--	--------	-----------

1 WHOLE INCH OR MORE	16	17.2	MINUS 1.2
3 WHOLE INCHES OR MORE	8	9.0	MINUS 1.0
6 WHOLE INCHES OR MORE	3	3.6	MINUS 0.6
NUMBER OF DAYS WITH THUNDERSTORMS...	10	17.6	MINUS 7.6
NUMBER OF DAYS WITH HEAVY FOG...	52	48.6	PLUS 3.4
(VISIBILITY 1/4 MILE OR LESS)			

...PORTLAND MAINE 2009 MONTHLY TEMPERATURE DATA...  
(RANK: 1ST = WARMEST, 69TH = COLDEST)

MONTH	AVG HIGH	AVG LOW	MEAN TEMP	DEPARTURE FROM NORMAL	RANK
JAN	27.9	7.1	17.5	MINUS 4.2	17TH
FEB	35.8	16.0	25.9	PLUS 1.1	20TH (TIED)
MAR	41.5	24.4	33.0	MINUS 0.7	32ND
APR	57.0	36.4	46.7	PLUS 3.0	2ND
MAY	64.5	45.7	55.1	PLUS 1.3	12TH
JUN	67.9	54.1	61.0	MINUS 1.9	54TH (TIED)
JUL	74.0	58.3	66.2	MINUS 2.5	62ND
AUG	79.0	60.4	69.7	PLUS 2.5	10TH
SEP	69.5	48.6	59.1	PLUS 0.4	37TH
OCT	55.5	38.2	46.9	MINUS 0.8	56TH
NOV	52.0	34.0	43.0	PLUS 4.7	2ND (TIED)
DEC	36.9	21.6	29.3	PLUS 1.7	26TH
YEAR	55.1	37.1	46.1	PLUS 0.4	20TH (TIED)

...PORTLAND MAINE 2009 MONTHLY PRECIPITATION DATA...  
(RANK: 1ST = WETTEST, 139TH = DRIEST)

MONTH	PRECIPITATION	DEPARTURE FROM NORMAL	RANK
JAN	2.35	MINUS 1.74	116TH
FEB	2.79	MINUS 0.35	91ST
MAR	2.66	MINUS 1.48	98TH
APR	4.63	PLUS 0.37	37TH
MAY	4.52	PLUS 0.70	37TH
JUN	8.56	PLUS 5.28	5TH
JUL	8.60	PLUS 5.28	2ND
AUG	5.15	PLUS 2.10	16TH
SEP	1.38	MINUS 1.99	121ST
OCT	4.99	PLUS 0.59	28TH
NOV	7.74	PLUS 3.02	9TH (TIED)
DEC	5.24	PLUS 1.00	32ND
YEAR	58.61	PLUS 12.78	8TH

...PORTLAND MAINE 2009 MONTHLY SNOWFALL DATA...  
(RANK: 1 = SNOWIEST, 128TH = LEAST SNOWIEST)

MONTH	SNOWFALL	DEPARTURE FROM NORMAL	RANK
JAN	28.0	PLUS 7.5	23RD
FEB	15.3	PLUS 2.5	68TH (TIED)
MAR	10.6	MINUS 2.4	68TH (TIED)
APR	0.0	MINUS 3.2	119TH (TIED)
MAY	0.0	MINUS TRACE	23RD (TIED)
JUN	0.0	NORMAL	-----
JUL	0.0	NORMAL	-----



AUG	0.0	NORMAL	-----
SEP	0.0	NORMAL	-----
OCT	TRACE	MINUS 0.1	12TH (TIED)
NOV	TRACE	MINUS 3.2	92ND (TIED)
DEC	13.8	PLUS 0.2	49TH
YEAR	67.7	PLUS 1.3	-----

NOTE...SNOWFALL FOR THE YEAR IS GIVEN FOR THE CALENDAR YEAR.  
 NORMALLY SNOWFALL TOTALS AND RANKINGS ARE GIVEN FOR THE SEASON  
 ...FROM JULY 1ST THROUGH JUNE 30TH.

...DISCUSSION...

THE YEAR 2009 WAS MUCH WETTER AND SLIGHTLY WARMER THAN NORMAL.

PRECIPITATION (RAINFALL PLUS MELTED SNOWFALL) FOR THE YEAR WAS 58.61 INCHES. THIS WAS NEARLY 13 INCHES (12.78 INCHES) ABOVE NORMAL AND RANKS AS THE 8TH WETTEST YEAR IN THE PAST 139 YEARS OF PRECIPITATION RECORDS. THE WETTEST YEAR WAS IN 2005 WITH 66.45 INCHES AND THE DRIEST YEAR WAS IN 1941 WITH JUST 25.27 INCHES OF PRECIPITATION.

HERE IS A LIST OF THE TEN WETTEST YEARS ON RECORD...

RANK	PRECIPITATION	YEAR
1	66.45 INCHES	2005
2	66.33 INCHES	1983
3	61.24 INCHES	2008
4	61.15 INCHES	1979
5	60.86 INCHES	2006
6	59.69 INCHES	1920
7	59.24 INCHES	1888
8	58.61 INCHES	2009 <===
9	58.39 INCHES	1996
10	58.07 INCHES	1933

DRIEST	25.27 INCHES	1941
NORMAL	45.83 INCHES	

THE WET YEAR WAS HIGHLIGHTED BY THE WETTEST SUMMER ON RECORD. ALL THREE SUMMER MONTHS HAD ABOVE NORMAL RAINFALL WITH BOTH JUNE AND JULY RECORDING OVER EIGHT INCHES OF RAIN WITH AUGUST TOPPING FIVE INCHES. THIS WAS THE 5TH WETTEST JUNE WITH 8.56 INCHES OF RAIN FOLLOWED BY THE 2ND WETTEST JULY WITH 8.60 INCHES OF RAIN. AUGUST WAS THE 16TH WETTEST ON RECORD WITH 5.15 INCHES OF RAIN. JULY ALSO SET A RECORD WITH THE MOST DAYS IN THE MONTH OF JULY WITH RAIN. THERE WERE 22 DAYS WITH A TRACE OR MORE RAINFALL...BREAKING THE OLD RECORD FOR JULY OF 21 DAYS WHICH OCCURRED IN 1938 AND 1974.

HERE IS A LIST OF THE WETTEST SUMMERS ON RECORD...

RANK	RAINFALL	YEAR
1	22.31 INCHES	2009 <===
2	19.04 INCHES	1991
3	18.43 INCHES	1915
4	17.56 INCHES	1917
5	17.21 INCHES	2006
6	15.96 INCHES	1998

7	15.89	INCHES	1872
8	15.72	INCHES	1922
9	15.60	INCHES	1885
10	15.42	INCHES	1892
11	15.33	INCHES	1887
12	14.87	INCHES	2008
13	14.14	INCHES	1877
	14.14	INCHES	1879
DRIEST	4.10	INCHES	1999
NORMAL	9.65	INCHES	

THIS WAS ALSO ONE OF THE WETTEST SEASONS EVER IN PORTLAND MAINE. THE 22.31 INCHES THIS SUMMER WAS THE 4TH WETTEST SEASON EVER AND ONLY THE 7TH TIME PORTLAND RECORDED MORE THAN 20 INCHES OF PRECIPITATION IN A SEASON. THE WETTEST SEASON WAS AUTUMN OF 2005 WITH 24.18 INCHES OF PRECIPITATION.

HERE IS A LIST OF THE WETTEST SEASONS ON RECORD IN PORTLAND...

RANK	PRECIPITATION	SEASON	
1	24.18 INCHES	AUTUMN 2005	
2	23.15 INCHES	AUTUMN 1888	
3	22.55 INCHES	SPRING 1983	
4	22.31 INCHES	SUMMER 2009	<===
5	22.20 INCHES	AUTUMN 1996	
6	21.07 INCHES	SPRING 1901	
7	20.49 INCHES	WINTER 1934-35	
8	19.93 INCHES	SPRING 2005	
9	19.57 INCHES	SPRING 1984	
10	19.51 INCHES	SPRING 1973	

NORMAL WINTER	11.47	INCHES
NORMAL SPRING	12.22	INCHES
NORMAL SUMMER	9.65	INCHES
NORMAL AUTUMN	12.49	INCHES

NOTE...METEOROLOGICAL SEASONS ARE AS FOLLOWS...

WINTER IS DECEMBER, JANUARY AND FEBRUARY. SPRING IS MARCH, APRIL AND MAY. SUMMER IS JUNE, JULY AND AUGUST. AUTUMN IS SEPTEMBER, OCTOBER AND NOVEMBER.

IT SHOULD ALSO BE NOTED THAT THE COMBINED RAINFALL FOR JUNE AND JULY WAS A RECORD FOR THE TWO MONTH PERIOD. THE 17.16 INCHES OF RAIN IN JUNE AND JULY EASILY SURPASSED THE OLD RECORD FOR THE TWO MONTH PERIOD OF 14.83 INCHES IN 2006. NORMALLY THESE TWO MONTHS COMBINE FOR 6.60 INCHES OF RAIN.

THE RECORD SETTING WET SUMMER WAS A SHARP TURN AROUND FROM THE BEGINNING OF THE YEAR WHEN EACH OF THE FIRST THREE MONTHS HAD BELOW NORMAL PRECIPITATION. SEPTEMBER WAS THE ONLY OTHER MONTH IN 2009 WITH BELOW NORMAL PRECIPITATION.

NOVEMBER 2009 TIED AS THE NINTH WETTEST WITH 7.74 INCHES OF PRECIPITATION. THIS WAS HIGHLIGHTED BY A DAILY RECORD RAINFALL OF 5.03 INCHES FOR THE MONTH OF NOVEMBER. THE 5.03 INCHES ON NOVEMBER 14TH TOPPED THE OLD RECORD FOR MOST RAIN IN A NOVEMBER DAY IN PORTLAND OF 4.70 INCHES WHICH WAS SET ON NOVEMBER 10, 1990.

THIS WAS ONLY THE EIGHTH TIME PORTLAND HAD OVER FIVE INCHES OF PRECIPITATION FOR ANY DAY IN THE YEAR. THE WETTEST DAY EVER IN PORTLAND WAS ON OCTOBER 21, 1996 WHEN 11.74 INCHES OF RAIN FELL.

THE 5.03 INCHES ON NOVEMBER 14TH COMBINED WITH 0.22 INCHES ON THE 15TH TO GIVE THE GREATEST 24 HOUR (NOT NECESSARILY A CALENDAR DAY) TOTAL RAINFALL OF 5.25 INCHES FOR THE YEAR.

SNOWFALL FOR THE YEAR TOTALED 67.7 INCHES WHICH WAS 1.3 INCHES ABOVE NORMAL. RANKINGS FOR CALENDAR YEAR SNOWFALL ARE NOT KEPT, RATHER RANKINGS ARE FOR SEASONAL SNOWFALL.

JANUARY WAS THE SNOWIEST MONTH OF THE YEAR WITH 28.0 INCHES. THIS WAS FOLLOWED BY 15.3 INCHES IN FEBRUARY, 13.8 INCHES IN DECEMBER AND 10.6 INCHES IN MARCH. THE REST OF THE YEAR ACCOUNTED FOR JUST A TRACE OF SNOWFALL.

THE BIGGEST 24 HOUR SNOWFALL WAS JUST UNDER A FOOT OF SNOW (11.6 INCHES) ON JANUARY 18-19TH. TEN DAYS LATER, ON THE 29TH, PORTLAND HAD ITS GREATEST SNOW DEPTH FOR THE YEAR WITH 16 INCHES OF SNOW ON THE GROUND.

TEMPERATURES FOR THE YEAR WERE SLIGHTLY ABOVE NORMAL. THE AVERAGE TEMPERATURE OF 46.1 DEGREES WAS 0.4 DEGREES ABOVE NORMAL. THE WARMEST YEAR WAS IN 2006 WITH AN AVERAGE TEMPERATURE OF 48.5 DEGREES WHILE THE COLDEST YEAR WAS IN 1962 WITH AN AVERAGE TEMPERATURE OF 43.3 DEGREES. THE YEAR OF 2009 TIED AS THE 20TH WARMEST IN THE 69 YEARS OF TEMPERATURE RECORDS AT THE PORTLAND JETPORT.

THE AVERAGE HIGH FOR THE YEAR WAS 55.1 DEGREES...JUST 0.1 DEGREE BELOW NORMAL. THE AVERAGE LOW FOR THE YEAR WAS 37.1 DEGREES OR 0.8 DEGREES ABOVE NORMAL.

THE HOTTEST TEMPERATURE FOR THE YEAR SURPRISINGLY OCCURRED IN APRIL. THE HIGH OF 92 DEGREES ON APRIL 28TH WAS NOT ONLY A RECORD FOR THE WARMEST TEMPERATURE IN APRIL BUT WAS THE FIRST TIME PORTLAND EVER REACHED 90 DEGREES IN APRIL.

THIS WAS FOLLOWED BY A 91 DEGREE HIGH TEMPERATURE ON MAY 21ST...ONLY THE 14TH TIME PORTLAND HIT 90 IN MAY AND TIED TWO OTHER DAYS IN MAY AS THE 6TH WARMEST TEMPERATURE EVER RECORDED IN THAT MONTH.

THERE WERE TWO MORE 90 DEGREE DAYS IN 2009 AND THOSE HAPPENED IN AUGUST. AUGUST ALSO HAD THE WARMEST DAY OF THE YEAR WITH AN AVERAGE TEMPERATURE OF 80 DEGREES ON AUGUST 19TH AND THE WARMEST LOW TEMPERATURE FOR THE YEAR OF 71 DEGREES ON THE MORNING OF THE 23RD.

JUNE AND JULY, AS WET AS THEY WERE, WERE ALSO QUITE COOL WITH WELL BELOW NORMAL TEMPERATURES AND NO 90 DEGREE READINGS. IN FACT, JUNE NEVER REACHED 80 DEGREES WITH A MONTHLY HIGH OF ONLY 78. THERE WERE JUST TWO OTHER YEARS AT THE PORTLAND JETPORT WHEN JUNE TEMPERATURES NEVER REACHED 80.

OVERALL, JUNE WAS 1.9 DEGREES COLDER THAN NORMAL. THAT WAS TOPPED BY JULY WHICH WAS 2.5 DEGREES BELOW NORMAL.

JULY HAD SOME VERY REMARKABLY COLD HIGH TEMPERATURES EARLY IN THE MONTH. THE HIGH OF 58 DEGREES ON JULY 8TH TIED AS THE SECOND COLDEST HIGH EVER RECORDED IN THE MONTH OF JULY. THE RECORD STILL STANDS AT 57 DEGREES ON JULY 4TH, 1992.

THERE WERE TWO OTHER DAYS IN JULY THAT NEVER REACHED 60 AND ONE DAY THAT REACHED 60 DEGREES. THESE COLD HIGHS ALSO RANKED AS SOME OF THE COLDEST HIGH TEMPERATURES EVER RECORDED IN JULY.

HERE IS A LIST OF THE COLDEST JULY HIGH TEMPERATURES AT THE PORTLAND JETPORT...

RANK	TEMPERATURE	DATE
1	57 DEGREES	JULY 4, 1992
2	58 DEGREES	JULY 6, 1956
	58 DEGREES	JULY 8, 2009 <===
4	59 DEGREES	JULY 8, 1961
	59 DEGREES	JULY 16, 1961
	59 DEGREES	JULY 30, 1976
	59 DEGREES	JULY 3, 1987
	59 DEGREES	JULY 1, 2009 <===
	59 DEGREES	JULY 2, 2009 <===
10	60 DEGREES	JULY 7, 2009 <===
11	61 DEGREES	SEVERAL DATES

THESE TEMPERATURES ARE AN ASTOUNDING 20 DEGREES OR SO BELOW THE NORMAL JULY HIGH TEMPERATURE OF 78 DEGREES.

OVERALL, JULY 2009 WAS THE EIGHTH COLDEST ON RECORD WITH AN AVERAGE TEMPERATURE OF 66.2 DEGREES. THE COLDEST JULY WAS IN 1962 WITH AN AVERAGE TEMPERATURE OF 64.0 DEGREES. NORMALLY JULY HAS AN AVERAGE TEMPERATURE OF 68.7 DEGREES.

THE AVERAGE HIGH TEMPERATURE IN JULY WAS A RECORD FOR BEING SO COLD. THE AVERAGE HIGH WAS JUST 74.0 DEGREES, TOPPING THE OLD MARK OF 74.6 DEGREES IN 2004. NORMALLY JULY HAS AN AVERAGE HIGH OF 78.8 DEGREES.

IT IS INTERESTING TO NOTE THAT THE COLD WEATHER IN JUNE AND JULY FOLLOWED A VERY WARM SPRING WHEN PORTLANDS AVERAGE TEMPERATURE FOR THE SPRING MONTHS OF MARCH, APRIL AND MAY TIED AS THE 7TH WARMEST ON RECORD.

THE MONTH WITH THE GREATEST DEPARTURE FROM NORMAL WAS NOVEMBER WITH AN AVERAGE TEMPERATURE THAT WAS 4.7 DEGREES ABOVE NORMAL. THE AVERAGE OF 43.0 DEGREES TIED AS THE SECOND WARMEST ON RECORD.

FOR THE YEAR THERE WERE SEVEN MONTHS WITH ABOVE NORMAL TEMPERATURES AND FIVE WITH BELOW NORMAL TEMPERATURES. JANUARY WAS THE MOST EXTREME ON THE COLD SIDE WITH AN AVERAGE THAT WAS 4.2 DEGREES BELOW NORMAL AND THE 17TH COLDEST JANUARY ON RECORD.

JANUARY ALSO HAD THE COLDEST DAY OF THE YEAR. THE AVERAGE TEMPERATURE ON JANUARY 16TH WAS MINUS ONE...THE ONLY DAY TO AVERAGE BELOW ZERO DURING THE YEAR. THE HIGH TEMPERATURE ON JANUARY 16TH WAS 14 DEGREES WHICH TIED JANUARY 15TH AS

THE COLDEST HIGH FOR THE YEAR. THE LOW ON JANUARY 16TH WAS 16 DEGREES BELOW ZERO...THE COLDEST TEMPERATURE FOR THE YEAR.

HERE IS A LIST OF DAILY TEMPERATURE AND PRECIPITATION RECORDS... FROM MIDNIGHT TO MIDNIGHT...SET OR TIED DURING THE YEAR 2009...

DATE	RECORD	PREVIOUS RECORD AND YEAR
JAN 18	11.5 - GREATEST DAILY SNOWFALL	11.2 INCHES IN 1979
JAN 25	35 - GREATEST DAILY TEMP. RANGE	32 DEGREES IN 1986
FEB 8	51 - RECORD HIGH TEMPERATURE	46 DEGREES IN 1991
MAR 2	7.9 - GREATEST DAILY SNOWFALL	6.0 INCHES IN 1908
MAR 7	37 - WARMEST LOW TEMPERATURE	37 DEGREES IN 1974 & 1979 (TIED)
MAR 30	4 - SMALLEST DAILY TEMP. RANGE	4 DEGREES IN 1944, 1956 & 1972 (TIED)
APR 18	46 - WARMEST LOW TEMPERATURE	45 DEGREES IN 1945, 1973, 1987 & 2006
APR 26	80 - RECORD HIGH TEMPERATURE	76 DEGREES IN 1985
APR 26	49 - WARMEST LOW TEMPERATURE	49 DEGREES IN 1986 (TIED)
APR 26	65 - WARMEST DAILY AVERAGE TEMP.	60 DEGREES IN 1985
APR 28	92 - RECORD HIGH TEMPERATURE	81 DEGREES IN 1990
APR 28	69 - WARMEST DAILY AVERAGE TEMP.	63 DEGREES IN 1990
APR 28	47 - GREATEST DAILY TEMP. RANGE	37 DEGREES IN 1990
MAY 21	91 - RECORD HIGH TEMPERATURE	87 DEGREES IN 1992
MAY 21	70 - WARMEST AVERAGE TEMPERATURE	70 DEGREES IN 1996 (TIED)
MAY 21	43 - GREATEST DAILY TEMP. RANGE	43 DEGREES IN 1992 (TIED)
MAY 22	63 - WARMEST LOW TEMPERATURE	60 DEGREES IN 1987
MAY 22	75 - WARMEST AVERAGE TEMPERATURE	72 DEGREES IN 1987 & 1992
MAY 28	49 - COLDEST HIGH TEMPERATURE	53 DEGREES IN 1941 & 2004
MAY 28	47 - COLDEST AVERAGE TEMPERATURE	49 DEGREES IN 1950 & 1977
MAY 28	5 - SMALLEST DAILY TEMP. RANGE	5 DEGREES IN 1941 & 1966 (TIED)
JUN 12	1.67 - GREATEST PRECIPITATION	1.18 INCHES IN 1936
JUN 14	3 - SMALLEST DAILY TEMP. RANGE	6 DEGREES IN 1954
JUN 19	3.21 - GREATEST PRECIPITATION	2.43 INCHES IN 1922
JUN 19	5 - SMALLEST DAILY TEMP. RANGE	5 DEGREES IN 1959 & 1962 (TIED)
JUN 30	4 - SMALLEST DAILY TEMP. RANGE	7 DEGREES IN 1967, 1972, 1980 & 1996
JUL 1	59 - COLDEST HIGH TEMPERATURE	62 DEGREES IN 1976
JUL 1	3 - SMALLEST DAILY TEMP. RANGE	4 DEGREES IN 1979
JUL 2	59 - COLDEST HIGH TEMPERATURE	63 DEGREES IN 1986
JUL 2	3 - SMALLEST DAILY TEMP. RANGE	5 DEGREES IN 1970
JUL 2	1.41 - GREATEST PRECIPITATION	1.32 INCHES IN 1983
JUL 7	60 - COLDEST HIGH TEMPERATURE	64 DEGREES IN 1956
JUL 7	5 - SMALLEST DAILY TEMP. RANGE	6 DEGREES IN 2005
JUL 7	1.57 - GREATEST PRECIPITATION	1.34 INCHES IN 1935
JUL 8	58 - COLDEST HIGH TEMPERATURE	59 DEGREES IN 1961
JUL 8	57 - COLDEST DAILY AVERAGE TEMP.	57 DEGREES IN 1963 & 1995 (TIED)
JUL 8	3 - SMALLEST DAILY TEMP. RANGE	4 DEGREES IN 1979
JUL 24	65 - COLDEST HIGH TEMPERATURE	66 DEGREES IN 1964
JUL 24	5 - SMALLEST DAILY TEMP. RANGE	7 DEGREES IN 1988
JUL 24	2.10 - GREATEST PRECIPITATION	1.77 INCHES IN 2008
JUL 30	67 - WARMEST LOW TEMPERATURE	67 DEGREES IN 1970, 1979 & 1983 (TIED)
AUG 19	90 - RECORD HIGH TEMPERATURE	90 DEGREES IN 1947 (TIED)
AUG 19	70 - WARMEST LOW TEMPERATURE	67 DEGREES IN 1955
AUG 19	80 - WARMEST DAILY AVERAGE TEMP.	76 DEGREES IN 1947 & 2002

AUG 21	68 - WARMEST LOW TEMPERATURE	66 DEGREES IN 2003
AUG 22	69 - WARMEST LOW TEMPERATURE	66 DEGREES IN 1976 & 2003
AUG 23	71 - WARMEST LOW TEMPERATURE	66 DEGREES IN 1942
AUG 23	79 - WARMEST DAILY AVERAGE TEMP.	76 DEGREES IN 1942
AUG 23	2.97 - GREATEST PRECIPITATION	1.91 INCHES IN 1966
AUG 24	66 - WARMEST LOW TEMPERATURE	65 DEGREES IN 1947 & 1974
SEP 23	67 - WARMEST DAILY AVERAGE TEMP.	67 DEGREES IN 1959 (TIED)
OCT 3	1.90 - GREATEST PRECIPITATION	1.68 INCHES IN 1979
OCT 13	48 - COLDEST HIGH TEMPERATURE	48 DEGREES IN 1988 (TIED)
OCT 15	43 - COLDEST HIGH TEMPERATURE	47 DEGREES IN 1961
OCT 15	37 - COLDEST DAILY AVERAGE TEMP.	37 DEGREES IN 1980 (TIED)
OCT 18	TRACE - GREATEST SNOWFALL	TRACE - MOST RECENT IN 1959 (TIED)
OCT 28	4 - SMALLEST DAILY TEMP. RANGE	4 DEGREES IN 1953 (TIED)
NOV 9	37 - GREATEST DAILY TEMP. RANGE	30 DEGREES IN 1964
NOV 10	64 - RECORD HIGH TEMPERATURE	63 DEGREES IN 1999
NOV 14	5.03 - GREATEST PRECIPITATION	1.75 INCHES IN 1887
NOV 26	5 - SMALLEST DAILY TEMP. RANGE	5 DEGREES IN 1942, 1996 & 1999 (TIED)
DEC 3	68 - RECORD HIGH TEMPERATURE	55 DEGREES IN 1970 & 1986
DEC 3	56 - WARMEST AVERAGE TEMPERATURE	47 DEGREES IN 1982 & 1986

## MONTHLY RECORDS FOR PORTLAND SET OR TIED IN 2009...

DATE	RECORD	PREVIOUS RECORD AND DATE
APRIL 28	92 - WARMEST TEMPERATURE	85 DEGREES ON APRIL 21, 1957 & APRIL 20, 2005
APRIL 28	69 - WARMEST DAILY AVG TEMP.	68 DEGREES ON APRIL 21, 1957
JULY 1	3 - SMALLEST DAILY TEMP. RANGE	
JULY 2	3 - SMALLEST DAILY TEMP. RANGE	
JULY 8	3 - SMALLEST DAILY TEMP. RANGE	3 DEGREES SET 6 OTHER TIMES IN PREVIOUS YEARS IN JULY
JULY 1-31	22 DAYS WITH PRECIPITATION	21 DAYS IN 1938 & 1974
NOV 14	5.03 - GREATEST CALENDAR DAY PRECIPITATION	4.70 INCHES ON NOV 10, 1990
NOV 14-15	5.25 - GREATEST ANY 24 HOUR PRECIPITATION	4.70 INCHES ON NOV 10, 1990

OF NOTE...

APRIL WAS THE 2ND WARMEST ON RECORD  
NOVEMBER TIED AS THE 2ND WARMEST ON RECORD  
JULY WAS THE 2ND WETTEST ON RECORD

## SEASONAL RECORDS FOR PORTLAND SET OR TIED IN 2009...

WETTEST SUMMER - 22.31 INCHES	OLD RECORD 19.04 INCHES IN 1991
WETTEST JUNE & JULY - 17.16 INCHES	OLD RECORD 14.83 INCHES IN 2006

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Appendix 7  
FOMB DEP SAP  
2009 Final



# Maine Volunteer River Monitoring Program (VRMP) Quality Assurance Program Plan



## SAMPLING and ANALYSIS PLAN (SAP)

Maine Department of Environmental Protection  
Bureau of Land and Water Quality  
Division of Watershed Management &  
Division of Environmental Assessment

**Title of SAP:** Androscoggin River

**Volunteer Group Name:** Friends of Merrymeeting Bay (FOMB)

**Date of Latest Modification to SAP:** July 29, 2009

**Date of VRMP QAPP Being Referenced in this SAP:** June 10, 2009

**Project Duration (if known):**

### Review & Approval Signatures:

FOMB Board Chair- Research & Advocacy	_____	Ed Friedman	_____	Date
Maine DEP QA Manager:	_____	Malcolm Burson	_____	Date
Maine DEP-DEA Representative:	_____	Barry Mower	_____	Date
Maine DEP-VRMP Biologist:	_____	Mary Ellen Dennis	_____	Date
Maine DEP-VRMP Coordinator:	_____	Jeff Varricchione	_____	Date

