12-5-2005

Comparative Study of Leonard Washburn Brook and Poquoy Brook

The comparison of

Leonard Washburn Brook

and

Poquoy Brook

Alexa Chiuppi, Salina Duggan, Pat Maguire, Courtney May, Rikki Nobre, Monet Viens

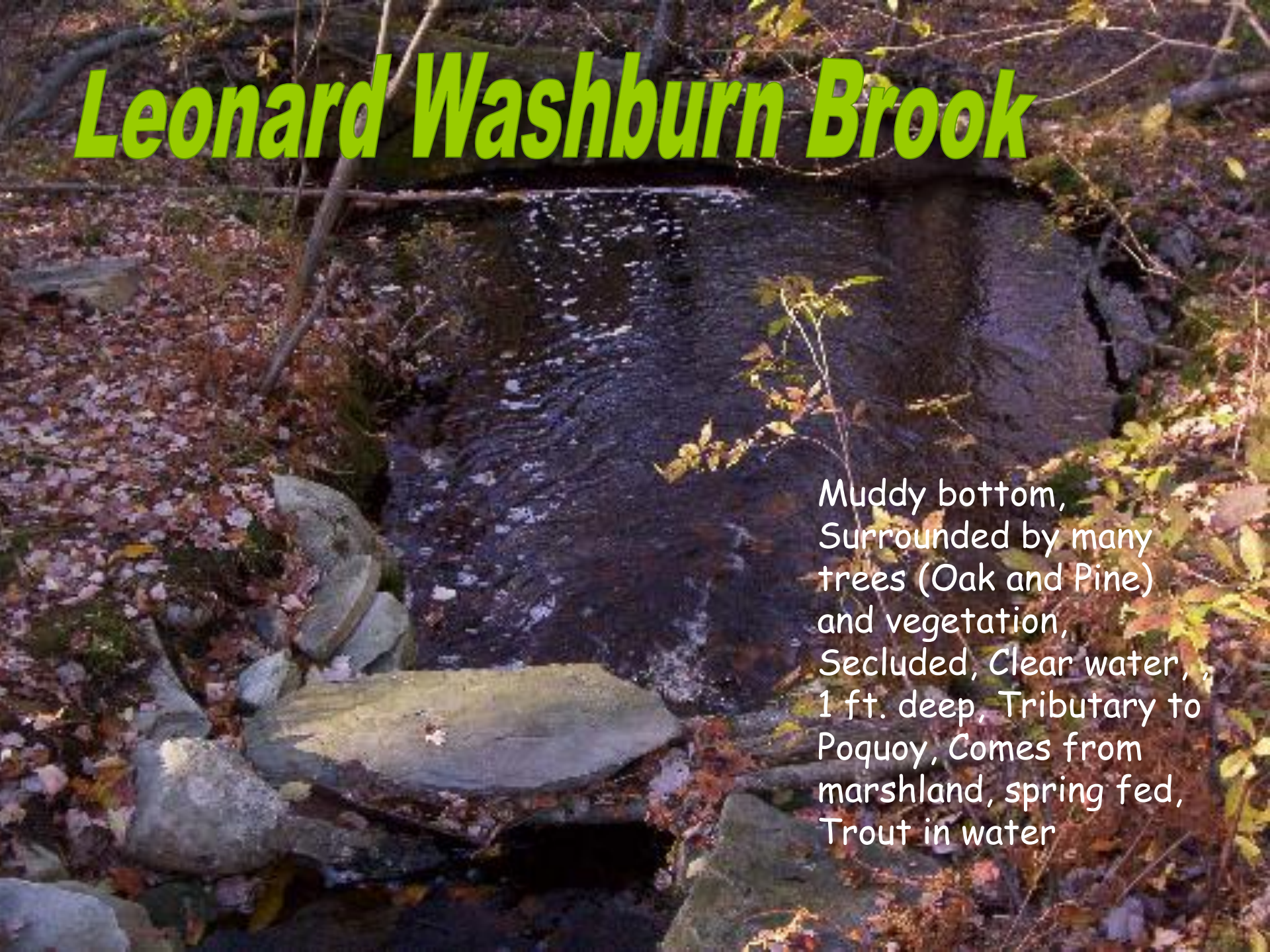
What is the difference between

Water of a pristine river environment

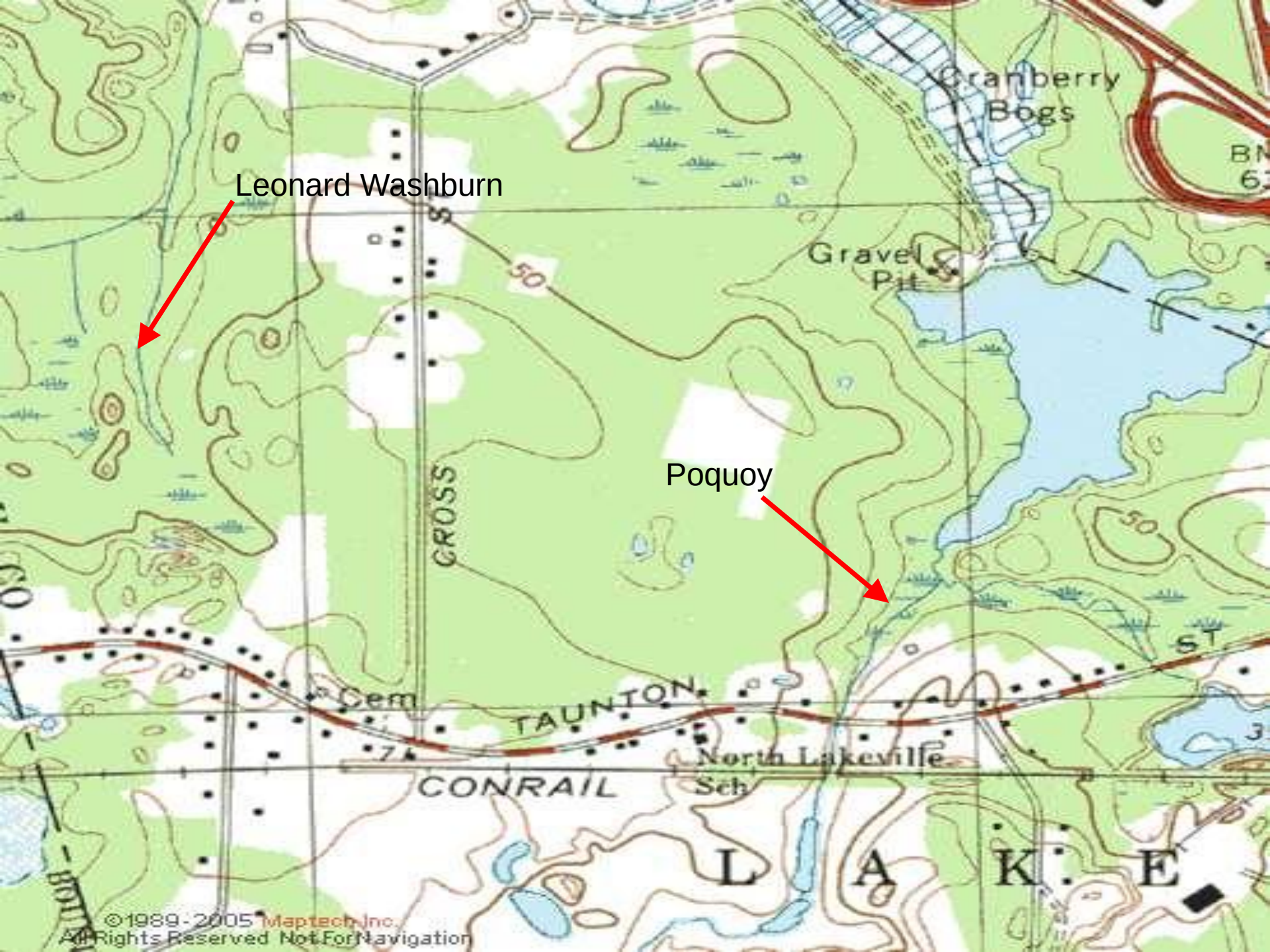
and

Water of a river with many land uses?

Leonard Washburn Brook



Muddy bottom, Surrounded by many trees (Oak and Pine) and vegetation, Secluded, Clear water, , 1 ft. deep, Tributary to Poquoy, Comes from marshland, spring fed, Trout in water


Leonard Washburn
Poquoy
Cranberry Bogs
Gravel Pit
50
CROSS
Cem
TAUNTON
CONRAIL
North Lakeville Sch
L A K E
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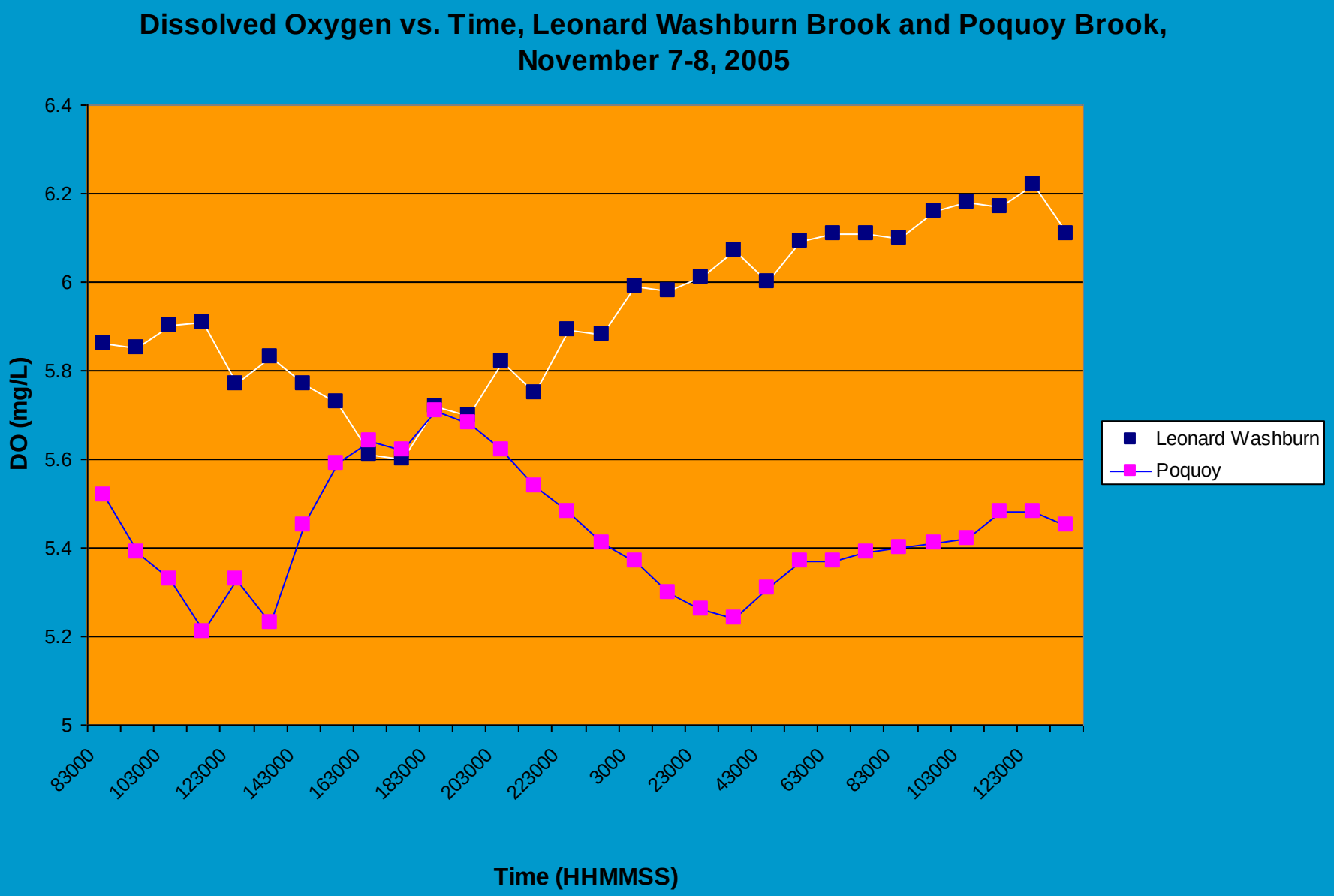
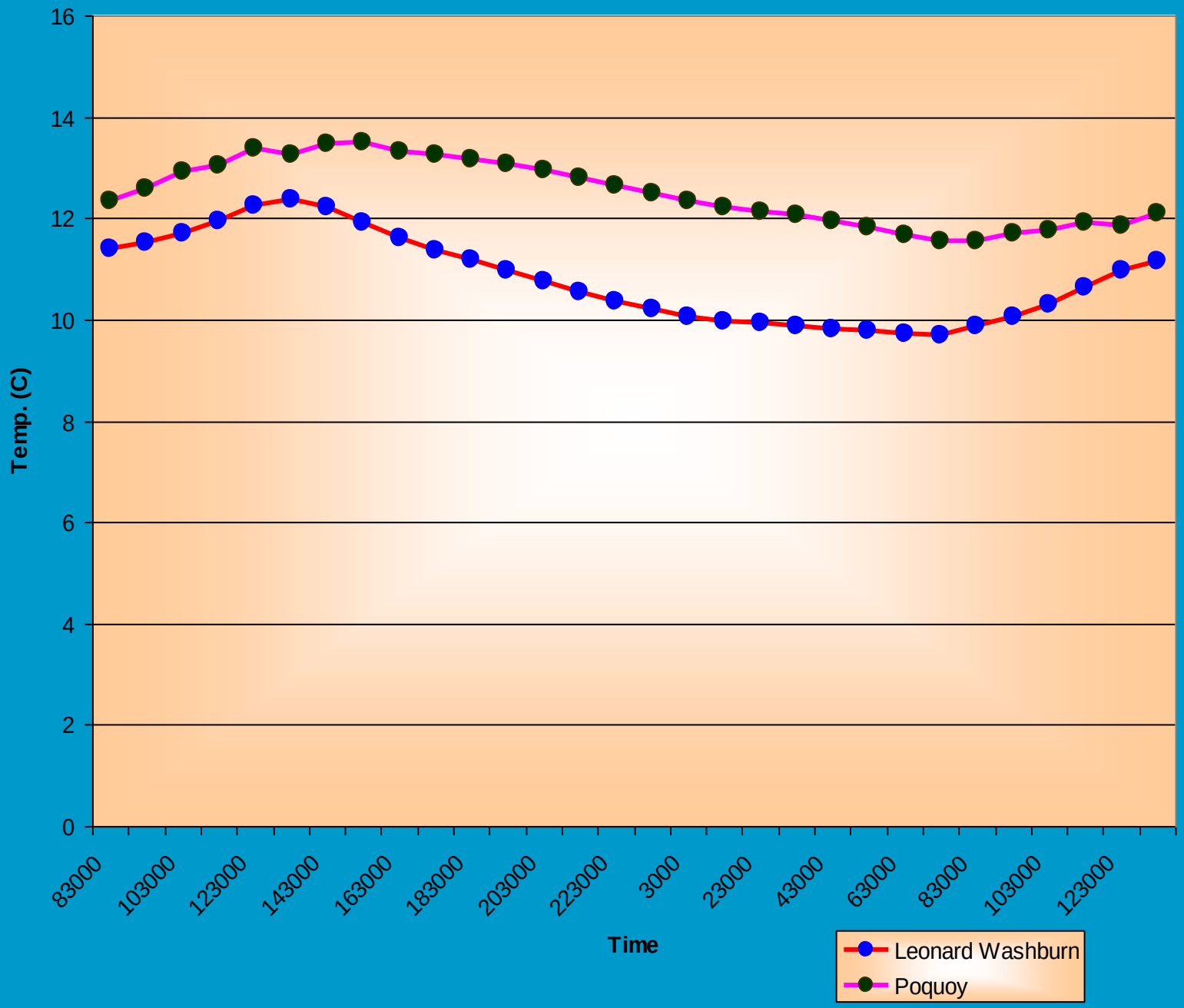
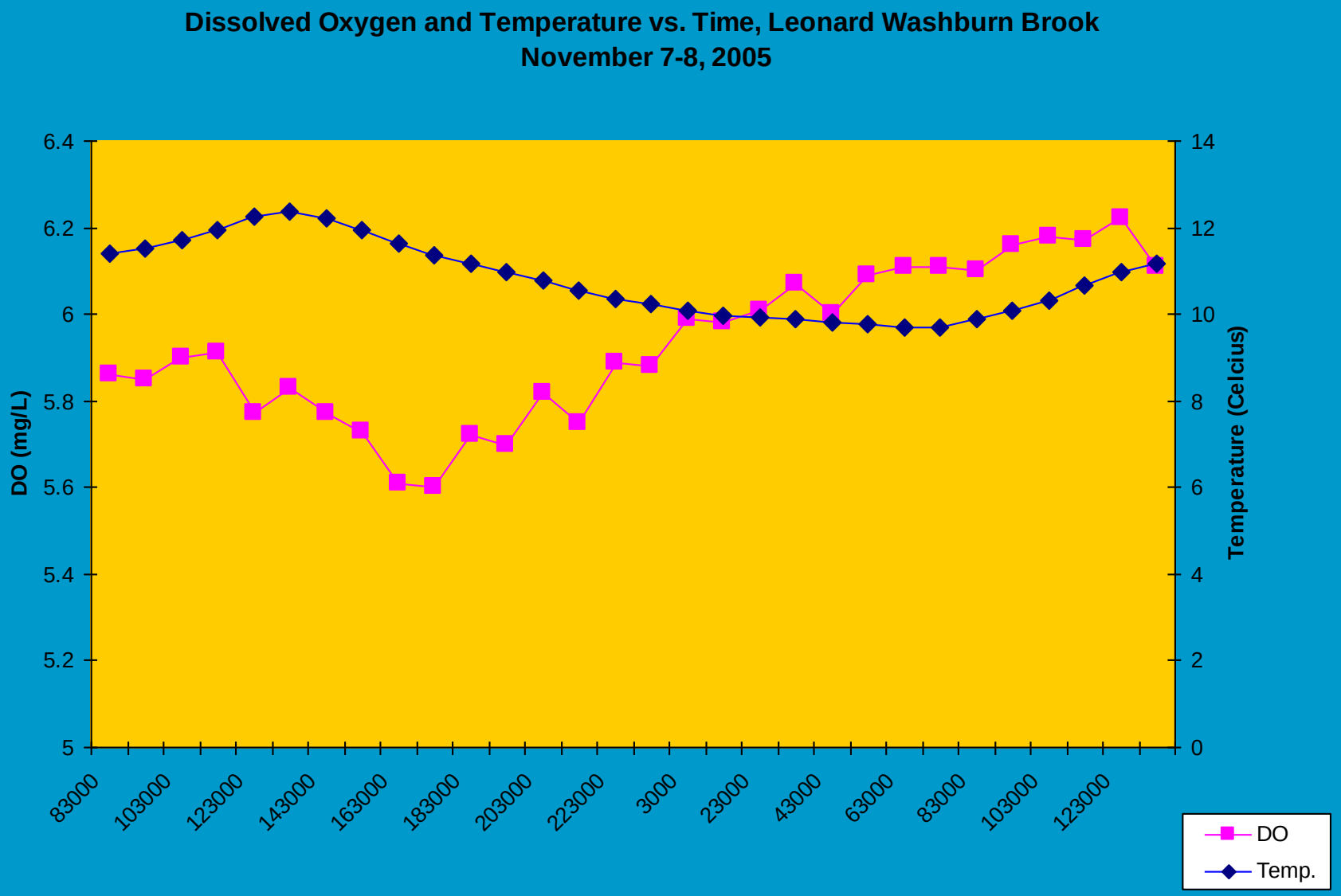
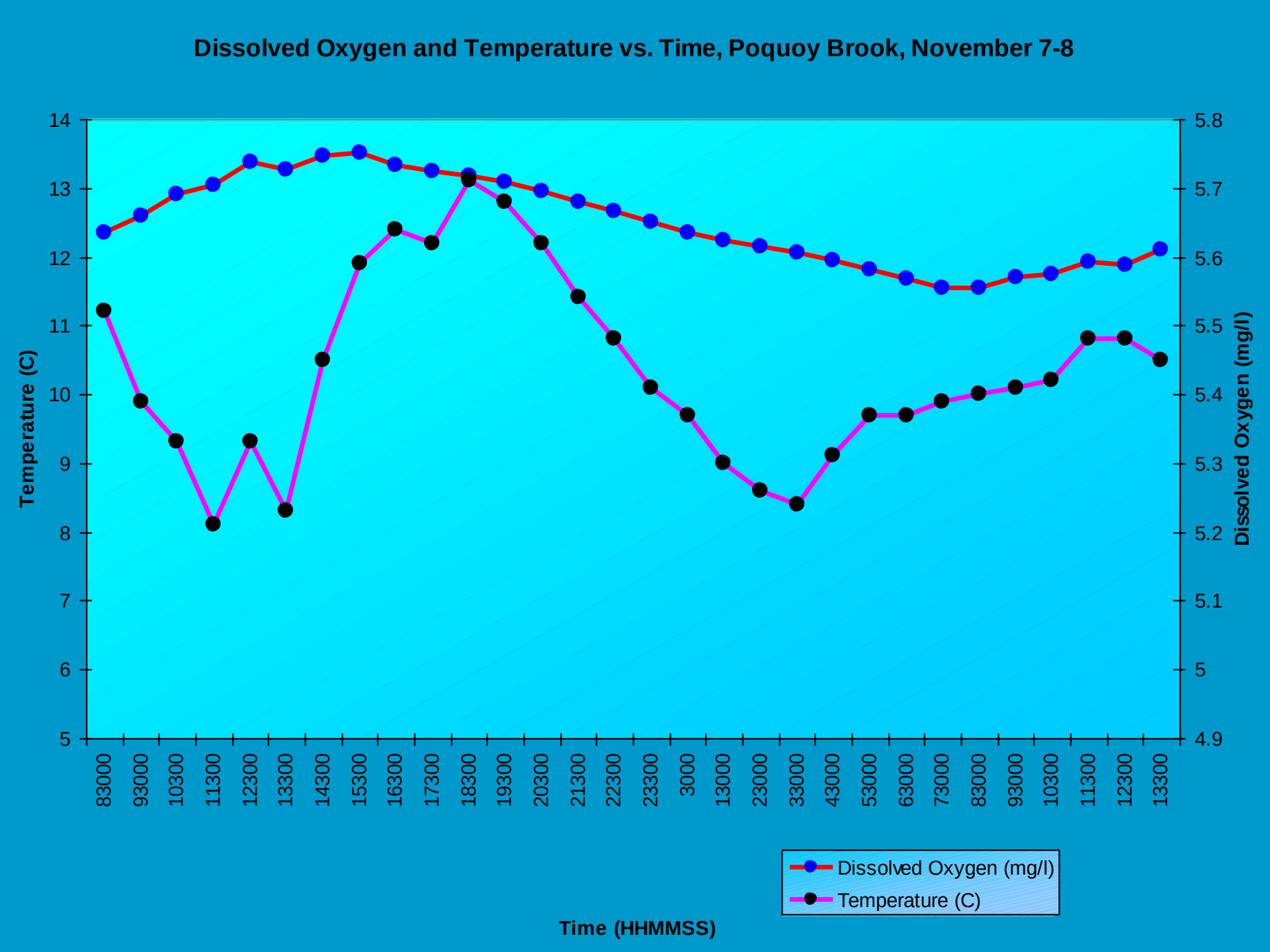
Poquoy Brook

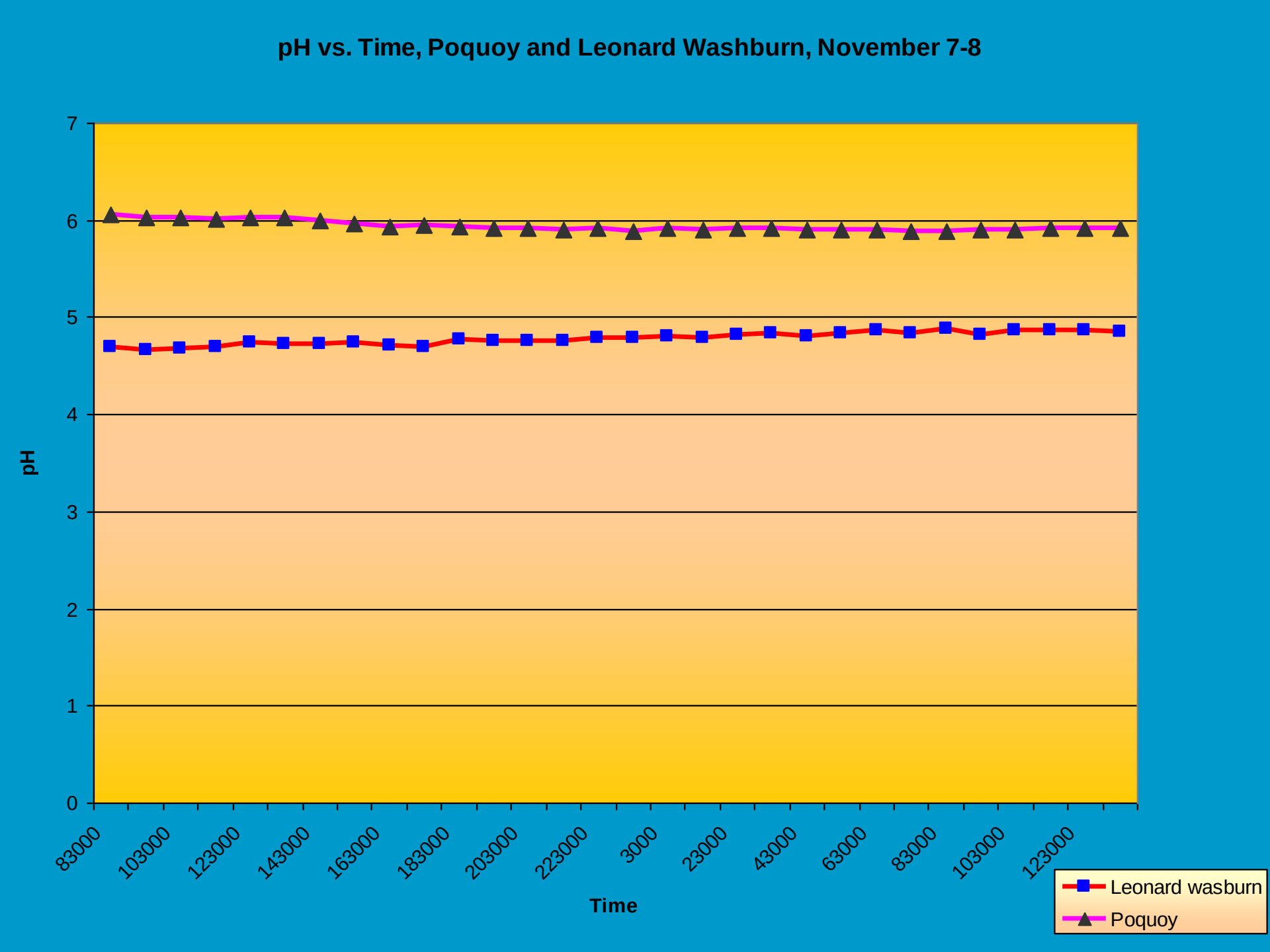
Runs through a cranberry bog and golf course upstream, open due to land uses,few trees, lack of canopy

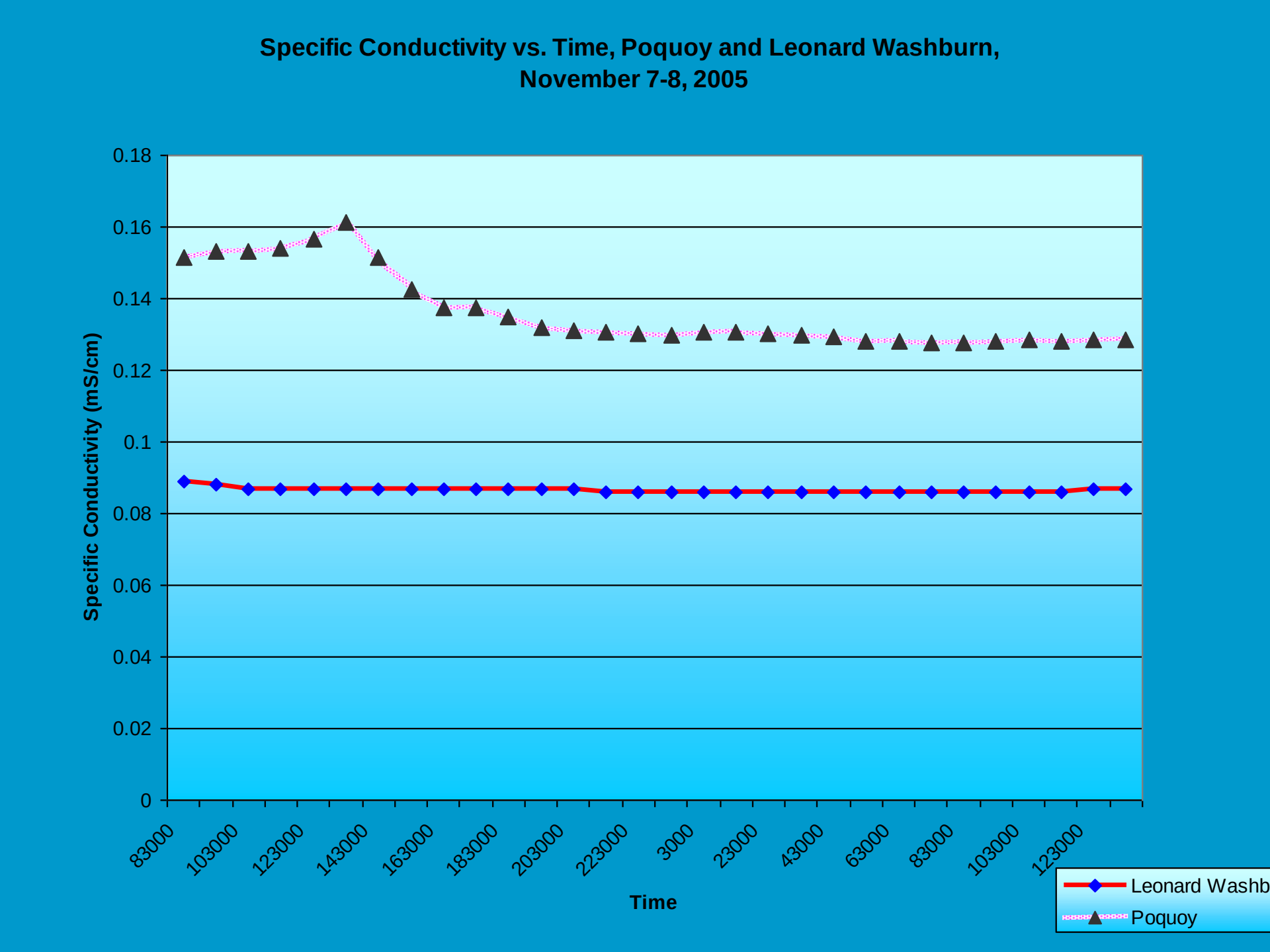

Dissolved Oxygen vs. Time, Leonard Washburn Brook and Poquoy Brook, November 7-8, 2005
DO (mg/L)
6.4
6.2
6
5.8
5.6
5.4
5.2
5
83000
103000
123000
143000
163000
183000
203000
223000
3000
23000
43000
63000
83000
103000
123000
Time (HHMMSS)
Leonard Washburn
Poquoy

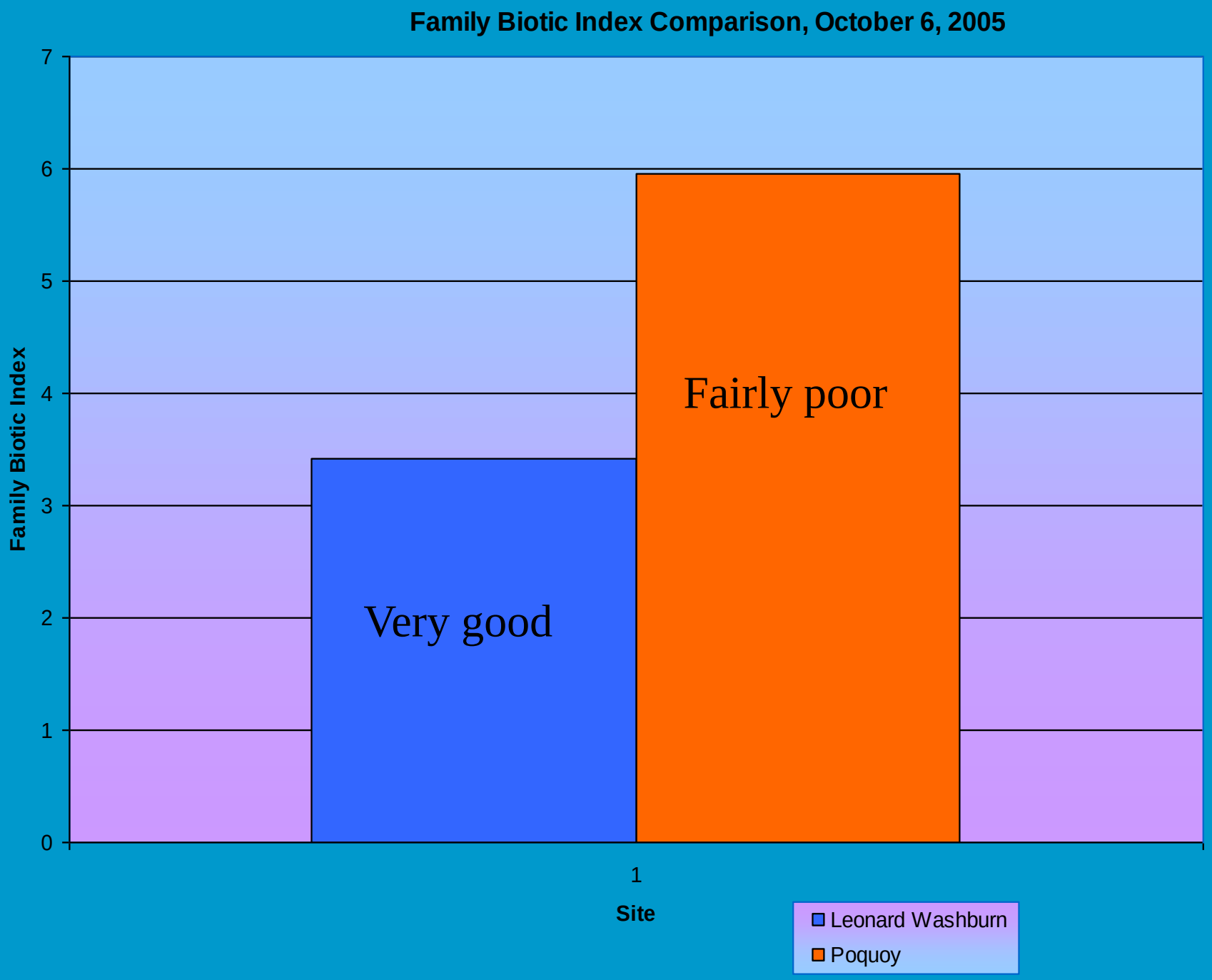

Temperature vs. Time, Poquoy and Leonard Washburn, November 7-8
Temp. (C)
16
14
12
10
8
6
4
2
0
83000
103000
123000
143000
163000
183000
203000
223000
3000
23000
43000
63000
83000
103000
123000
Time
Leonard Washburn
Poquoy


Dissolved Oxygen and Temperature vs. Time, Leonard Washburn Brook
November 7-8, 2005
DO (mg/L)
Temperature (Celcius)
Time (HHMMSS)
6.4
6.2
6
5.8
5.6
5.4
5.2
5
14
12
10
8
6
4
2
0
83000
103000
123000
143000
163000
183000
203000
223000
3000
23000
43000
63000
83000
103000
123000
DO
Temp.


Dissolved Oxygen and Temperature vs. Time, Poquoy Brook, November 7-8
Temperature (C)
Dissolved Oxygen (mg/l)
14
13
12
11
10
9
8
7
6
5
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
5
4.9
83000
93000
10300
11300
12300
13300
14300
15300
16300
17300
18300
19300
20300
21300
22300
23300
3000
13000
23000
33000
43000
53000
63000
73000
83000
93000
10300
11300
12300
13300
Dissolved Oxygen (mg/l)
Temperature (C)
Time (HHMMSS)


pH vs. Time, Poquoy and Leonard Washburn, November 7-8
7
6
5
4
3
2
1
0
pH
83000
103000
123000
143000
163000
183000
203000
223000
3000
23000
43000
63000
83000
103000
123000
Time
Leonard wasburn
Poquoy


Specific Conductivity vs. Time, Poquoy and Leonard Washburn, November 7-8, 2005
Specific Conductivity (mS/cm)
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
83000
103000
123000
143000
163000
183000
203000
223000
3000
23000
43000
63000
83000
103000
123000
Time
Leonard Washb
Poquoy


Family Biotic Index Comparison, October 6, 2005
Family Biotic Index
7
6
5
4
3
2
1
0
Very good
Fairly poor
1
Site
Leonard Washburn
Poquoy

Family/Group Biotic Index Data Sheet

Leonard Washburn Brook

Major Group/Family	Count Replicate 1	Group or Family %
Ephemeroptera Leptophlebiid	1	2
Plecoptera Capniidae	1	2
Plecoptera Taeniopterydidae	1	2
Plecoptera Perlidae	2	4
Trichoptera Hydropsychidae	21	40
Trichoptera Philopotamidae	3	6
Trichoptera Polycentropodida	1	2
Diptera Tipulidae	1	2
Odonata Cordulegastridae	5	10
Megaloptera Corydalidae	5	10
Coleoptera Elmidae	3	6
Amphipoda	8	15
Total	52	
Percent Intolerant	78	
Percent Tolerant	15	
FBI	**3.92 - Very Good**	

Family/Group Biotic Index Data Sheet

Poquoy Brook

Major Group/Family	Count Replicate 1	Group or Family %
Plecoptera Perlodidae	1	4
Diptera Simuliidae	2	7
Odonata Lestidae	1	4
Trichoptera Hydropsychidae	3	11
Odonata Libellulidae	1	4
Isopoda Asellidae	4	16
Pelecypoda	4	16
Coleoptera Elmidae	3	11
Amphipoda	7	27
Total	22	
Percent Intolerant	15	
Percent tolerant	59	
FBI	**5.96 - Fairly poor**	

Conclusion

- What we learned?
  - Land use does effect water quality. Determined by calculating the FBI. **Poquoy** resulted as **fairly poor**, while **Leonard Washburn** resulted as **very good**.
- What to do next?
  - Continue data collection.
  - See if a pipe upstream is affecting the stream quality.
- What will we focus on?
  - Water quality during fertilizer addition at golf course and bog in the spring.