

# Creek Organism Collection / Observation

Date: 09/16/2013

Very Sensitive to Pollution	✓	#	Somewhat Tolerant to Pollution	✓	#	Very Tolerant of Pollution	✓	#
Caddis Fly Larvae		12	Crayfish		3	Pouched Snail		21
Mayfly Larvae		7	Amphipod		54	Orb Snail		16
Helgremite (Dobsonfly)		4	Damselfly Larvae		18	Flatworms		6
Stonefly Larvae		2	Dragonfly Larvae		2	Nematode (not segmented)		1
Riffle Beetle			Crane fly Larvae		1	Leech (segmented)		3
Water Penny		1	Soldierfly Larvae			Oligochaete (segmented – bristles)		
Gilled Snail		17	Daphnia		?	Blackfly Larvae		2
Frogs/Tadpoles			Volvox		?	Midge Larvae		?
Water Mite		?	Mosquito Fish		8	Clams		11
Creek Chub			Carp			Spirogyra		****
Trout			Blue Gill			Rotifer		?
Sacramento Squawfish			Black Bass		7	Rat Tail Maggot		

Unknowns	✓	#	Description (legs / segmented / appendages / shape / appx. Size / movement / shell / color)
A		1	alder fly
B		15	Slug????
C		2	Scorpion Bug
D			

## Notes:

- 7 black small bass were caught and 5 or more large black bass were observed
- 8 mosquito fish were caught but numerous others were observed
- no tadpoles or frogs being observed is concerning
- accurate snail identification may be in question
- sighting of an alder fly may be the first or identification of the specimen may be inaccurate
- almost all the caddis fly larvae were collected with the kick net in fast moving water
- what identified as slugs is most likely inaccurate – scuds? flatworms?
- ? in the table will be answered by microscopic analysis of water collected with plankton net samples
- Amphipods thrive on decaying organic matter
- Spirogyra formed large floating mats on the surface in many calm areas and was seen wrapped around rooted aquatic plants
- Fanworts were abundant in calm pools
- A few Elodea plants were seen rooted to the creek bed at site 10 and 11

## Productivity Jars:



	Initial DO Light Jar Day 1	Light Jar DO Day 3	Dark Jar DO Day 3	Depth
1	8.1	7.9	4.7	10cm
2		7.1	6.8	10cm
3		6.6	5.9	30cm
4		5.9	5.5	50cm
5		5.4	5.3	80cm

### Notes/Questions:

- Only five class periods had data for productivity bottles
- net productivity can only be evaluated for the one pair at a depth of 10 cm
- what might account for the difference in gross productivity in jar pair 1 & 2
- what might be expected for net productivity if initial DO was available for jar pairs 3-5
- what can account for the differences in gross productivity for jar pairs set at greater depths?
- if each jar pair were filled with water from the exact same location, placed at increasing depths of 10cm, and gross productivity measured and the data graphed, what would the graph look like?
- How might this graph reflect what would be expected to be evident in the biodiversity of a pond/lake as you move to greater and greater depths? BE ABLE TO an explanation for your answer?

Class Period: \_\_\_\_!st\_\_\_\_\_ Weather (circle): sunny/hot **sunny/cool** overcast/cool

Date: \_\_\_\_9/16/2013\_\_\_\_\_ **no wind** light breeze very windy

Air Temp(C):\_\_19.2\_\_\_\_ Rel Humid(%):\_\_72.9%\_\_\_\_ Bar Pres(mmHg):\_\_730.3\_\_

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)

Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)

Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= >30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond (µS)	Turbid (NTU)	Flow	Expos	Depth
1		4.4		7	500	0	stag		surf
2		11.9	0	7	500		rapid		mid
3		3	0	7	495		stag		surf
4	18	13	0.1	7	503	0	stag		surf
5	18	13	0.2	7	500		rapid		mid
6		#		7	507				
10		#	0	7	493		slow		surf
11			0	7	496	1.7	fast		mid
12		#	0	7	499		slow		surf
14				7	497	157	stag	sun	surf

Notes:

- May have sacrificed data quality amount of data
- Most DO measurements suggest levels sufficient for pollution sensitive species
- colder morning temperatures support higher DO levels than hot afternoon temps
- Conductivity is in the range of Pleasanton tap water
- site 14 may have accumulated particulates as a consequence of sediments kicked up by seine net crew
- pH is not an issue

Class Period: \_\_2\_\_

Weather (circle): sunny/hot **sunny/cool** overcast/cool

Date: \_\_9/16/2013\_\_

**no wind** light breeze very windy

Air Temp(C):\_\_20.1\_\_

Rel Humid(%):\_\_58.17\_\_ Bar Pres(mmHg):\_\_752.27\_\_

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)

Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)

Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= &gt;30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond ( $\mu$ S)	Turbid (NTU)	Flow	Expos	Depth
4	20.6	5.3	0	7	610	126.7	slow	mxd	surf
6	19.3	#	.2	6		123.2	stag	mxd	mid
10	20.3	5.6	.1	6	575	126.5	stag	mxd	surf
11	20.9	7.0	0.2	8	1054	126.7	stag	mxd	surf
13	23.2	5.1	0.2	7	570	128	slow	mxd	surf
13	19.8	5.8	0	6	525	127.8	slow	mxd	elb

## Notes:

- DO levels on the low side - not conducive to pollution sensitive species
- Higher DO at elbow level vs lower at surface may be caused by temp differential
- conductivity same range as Pleasanton tap water except site 11??
- Nitrate levels all in an acceptable range - not responsible for algae bloom
- pH not an issue
- turbidity at levels that could suggest phytoplankton or sediments kicked up by seine net crew

Class Period: \_\_\_3\_\_\_

Weather (circle): sunny/hot

**sunny/cool**

overcast/cool

Date: \_\_\_\_\_

**no wind**

light breeze

very windy

Air Temp(C): \_\_\_22C\_\_\_

Rel Humid(%): \_\_\_\_\_

Bar Pres(mmHg): 755.5

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)

Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)

Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= &gt;30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond (µS)	Turbid (NTU)	Flow	Expos	Depth
2	21.2	#		7	580	138.2	stag	mxd	surf
4	20.4	#		7	493	137.4	stag	shd	surf
6	20.9	9.17		7	493	137.2	stag	mxd	surf
11	21.1			7	492	124.5	stag	mxd	surf
14	22.5	#		7	490	137.2	fast	brt	surf
walk bridge	21.8			7	492	139.7	slow	shd	surf

Notes:

- One accurate DO measurement - in acceptable range for pollution sensitive species
- pH not a problem
- Conductivity in a range of Pleasanton tap water
- Turbidity is high - sediments kicked up via data collection or phytoplankton?

Class Period: \_\_4\_\_

Weather (circle): sunny/hot

**sunny/cool**

overcast/cool

Date: \_\_\_\_\_

**no wind**

light breeze

very windy

Air Temp(C):\_23C\_\_

Rel Humid(%):\_\_23.9\_\_

Bar Pres(mmHg): 758.6

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)

Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)

Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= &gt;30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond ( $\mu$ S)	Turbid (NTU)	Flow	Expos	Depth
1	23.8		0		537	18.3	slow		mid
2	24.5		0		498	1.0	stag		surf
3	25		0		503	20	fast		elb
4	22.5		0		493	21.1	stag		elb
5	24.7		0		494	5.0	stag		surf
6	24.9		0		496	10.9	stag		surf
7	25.4		0		491	12.5	stag		surf
8	26.5		0		506		stag		
9	26.2		0		495	3.8	stag		

Notes:

- Temperatures significantly warmer than 1st period - impact on DO levels?
- Nitrate at levels that would not promote algae bloom
- pH???????
- Conductivity at levels similar to Pleasanton tap water
- Turbidity at very acceptable levels for pollution sensitive species

Class Period: \_\_\_\_5\_\_\_\_

Weather (circle): **sunny/hot** sunny/cool overcast/cool

Date: \_\_\_\_9/16/2013\_\_\_\_

**no wind**

light breeze

very windy

Air Temp(C):\_\_\_\_24.8\_\_\_\_ Rel Humid(%):\_\_29.61\_\_ Bar Pres(mmHg):\_\_763mm/Hg\_\_\_\_

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)

Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)

Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= >30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond ( $\mu$ S)	Turbid (NTU)	Flow	Expos	Depth
1	26.6			7	#	16.3	stag	mxd	surf
2	28.8			7	#	22.6	slow	mxd	mid
3	26.5			7	#	8.1	slow	mxd	mid

Notes:

- Warmer water temps impact DO levels???
- pH not an issue
- Conductivity ????????
- Turbidity at levels supportive of pollution sensitive species
- limited data - what happened??????????

Class Period: \_\_6\_\_ Weather (circle): **sunny/hot** sunny/cool overcast/cool  
 Date: \_9/16/2013\_ **no wind** light breeze very windy  
 Air Temp(C):\_\_28.3\_\_ Rel Humid(%):\_\_27%\_\_ Bar Pres(mmHg):\_\_762.08\_\_

Flow Rate Options: (stag=stagnant..... slow=barely recognizable..... fast=rapidly moving)  
 Exposure Options: (brt= bright sunlight on water.....mxd= mixed shade and sun.....shd=shaded)  
 Depth Options: (surf= 0-10cm.....mid=20-30cm mid forearm.....elb= >30cm up to elbow)

Site	Temp (C)	DO (ppm)	Nitrate (ppm)	pH	Cond (uS)	Turbid (NTU)	Flow	Expos	Depth
4	28.7	6.4	0	7	1012	16.9	stag	brt	surf
7	27.8	3.9	0	7		0	fast	brt	surf
10	26.4	3.7	0	7	1062	0	slow	shd	surf
12	28.9			7	1078	0	slow	mxd	surf
13				7	1066		stag	shd	brt
14				7	1053	#	stag	brt	surf

Notes:

- DO at levels that would inhibit the success of pollution sensitive species
- nitrate levels not responsible for algae bloom
- very high conductivity levels - sensor problems? increased dissolved solids due to our day long activity? storm drain run off?
- turbidity in an acceptable range for pollution sensitive species