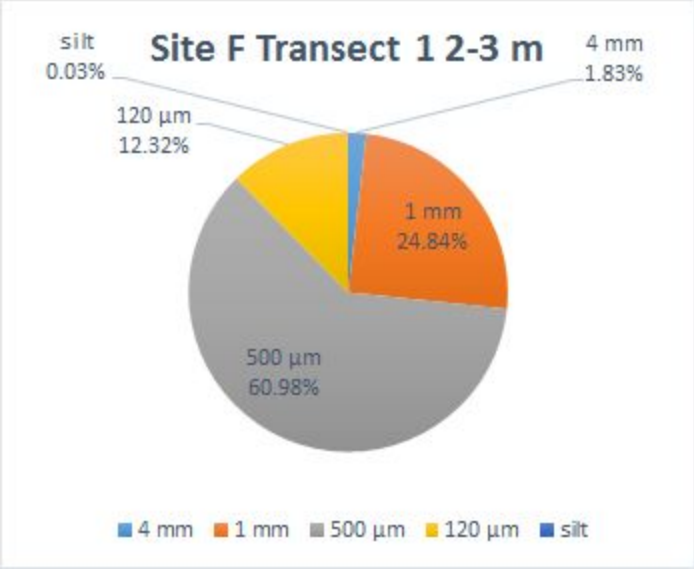
Site F Data Analysis: Fall 2015

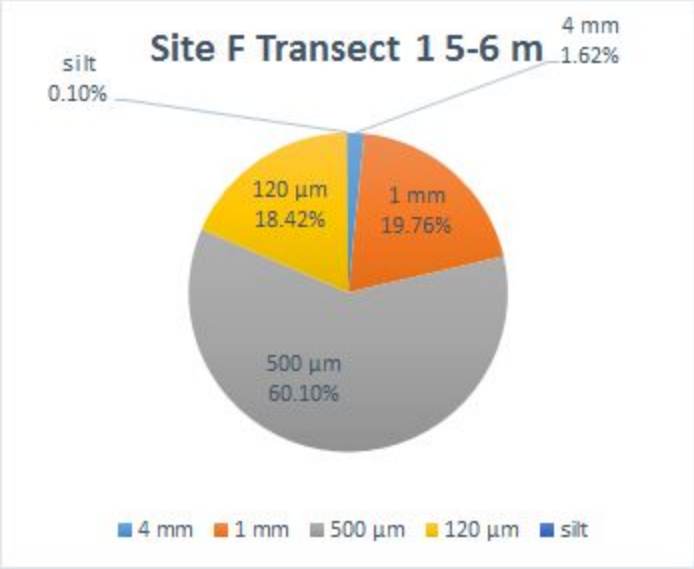
Data Table #1: Site F Transect 1 -- Sediment Composition

Sample #	4 mm		1 mm		500 micrometers		120 micrometers		Silt		Total (g)
	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	
2-3 m	29.5	1.83	400.9	24.8	984.2	60.9	198.8	12.3	0.5	0.031	1613.9
5-6 m	25.6	1.61	312.7	19.8	951.1	60.1	291.5	18.4	1.6	0.101	1582.5

Sediment Analysis:

Compared to Spring 2015, our samples were much larger, and so considering the percentages is more important. The percentages of 4 mm remained relatively the same, differing only up to 1 percent, while 1 mm and 500 micrometers changed around 5% for 5-6 m. For 120 micrometers and silt, the percentage went up for both distances. While the silt levels still remain below 1% for both distances, if the silt levels continue to increase, there may be problems, as too much silt could possibly clog up the airways of organisms living in the water. It would be better if larger-sized sediments increased rather than remain the same, because it allows for more biodiversity within the creek.





Data Table #2: Site F Transect 1 -- Chemical Testing

Transect	Distance from N Bank (m)	*Corbicula*	Feature	Potassium	pH	Nitrogen	Phosphorous
1	2-3 meters	0	Dry	Very low	6	Trace	Low
1	5-6 meters	0	Dry	Low	6	Trace	Low

Chemical Analysis:

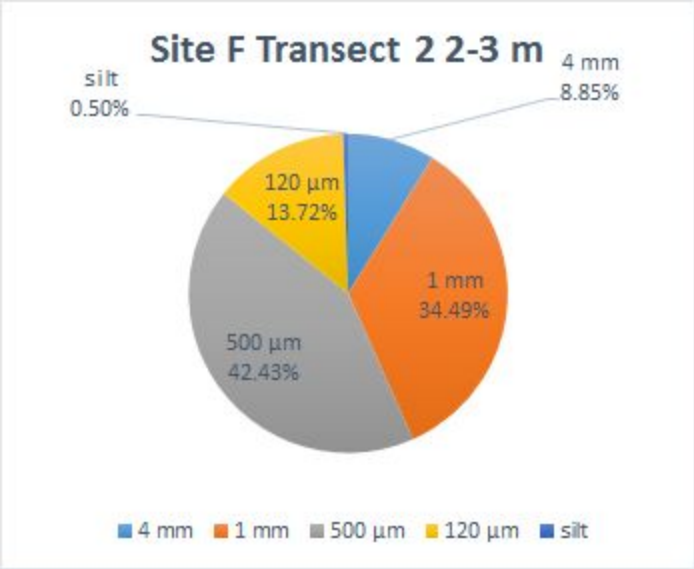
The amount of *Corbicula* remained the same for Transect 1 2-3 meters and also Transect 1 5-6 meters (from 0 *Corbicula* to 0). This indicates that the creek is relatively healthy, because *Corbicula* are invasive clam species . The amount of Potassium in Transect 1 2-3 meters dropped significantly (from Medium to Very Low), while the amount of Potassium in Transect 1 5-6 meters also dropped (from Medium-Low to Low). The pH of the sediments has remained the same in both Transect 1 2-3 meters and Transect 1 5-6 meters, but this pH is still not ideal, because the ideal level of pH for a healthy creek is 6.5-8. The Phosphorus levels in Transect 1 2-3 meters remained the same (from Low to Low), while the Phosphorus levels in Transect 1 5-6 meters dropped (from Trace to Low). The lowering levels of Phosphorus are good, because it means that there will not be any depletion of oxygen or an algae bloom. If the levels continue to decrease however, there may be a problem as phosphorus is essential for plant and animal growth.

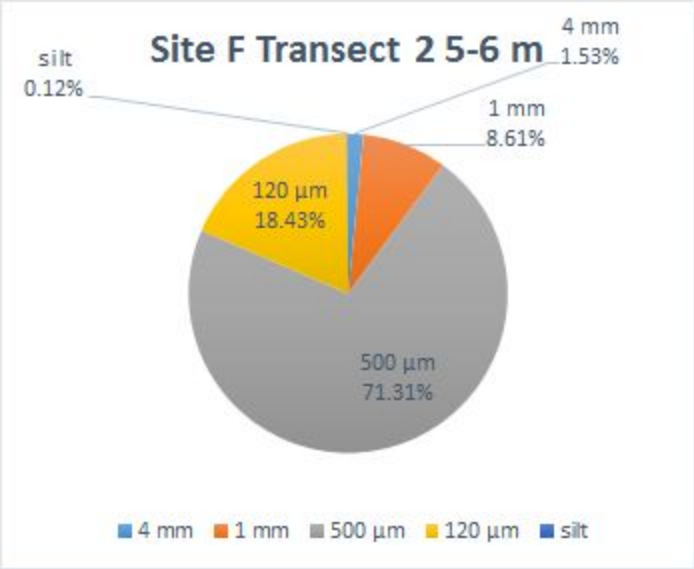
Data Table #1: Site F Transect 2 -- Sediment Composition

Sample #	4 mm		1 mm		500 micrometers		120 micrometers		Silt		Total (g)
	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	
2-3 m	158.3	8.84	617.0	34.50	759.1	42.4	245.5	13.7	9.0	0.503	1788.9
5-6 m	26.2	1.53	147.5	8.61	1220.9	71.3	315.6	18.4	2.0	0.117	1582.5

Sediment Analysis:

Compared to the Spring of 2015, for 4 mm, the amount in Transect 2 2-3 meters drastically increased, while in Transect 2 5-6 meters it decreased. For 1 mm, the amount in Transect 2 2-3 meters also drastically increased, while in Transect 2 5-6 meters it also decreased. For 500 micrometers, the amount in Transect 2 2-3 meters increased while the amount in Transect 2 5-6 meters also increased. For 120 micrometers, the amount in Transect 2 2-3 meters increased, while the amount in Transect 2 5-6 meters also increased. And finally for silt, the amount in Transect 2 2-3 meters increased, while in Transect 2 5-6 meters it decreased. If in Transect 2 2-3 meters the amount of silt keeps increasing, this could pose a threat to the fish and other wildlife in the stream, as these high levels of silt are very unhealthy.





Data Table #2: Site F Transect 2 -- Chemical Testing

Transect	Distance from N Bank (in)	*Corbicula*	Feature	Potassium	pH	Nitrogen	Phosphorous
2	2-3 meters	4	Dry	Very low	6	Trace	Low
2	5-6 meters	0	Dry	Low	6	Trace	Low

Chemical Analysis:

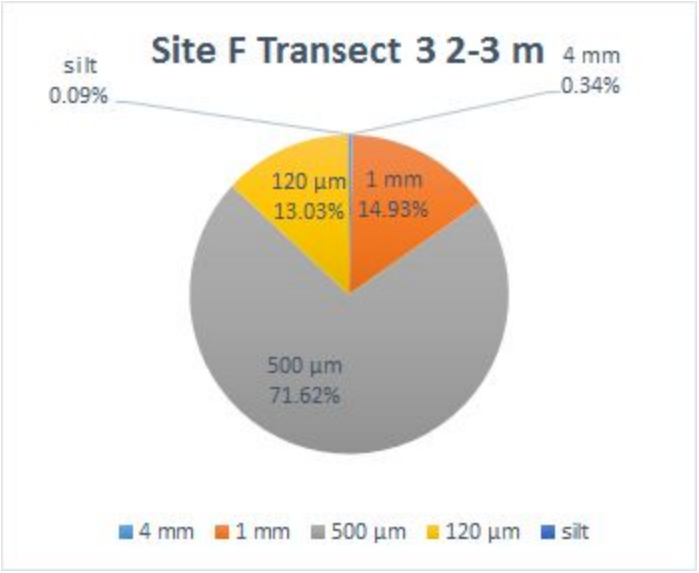
More *Corbicula* were found in Transect 2 2-3 meters than in Spring 2015 (from 0 *Corbicula* to 4), which would indicate an unhealthy status of the creek as they only thrive in poor conditions in compared to other native organisms to the creek. However, no *Corbicula* were found in Transect 3 which could point to an inconsistency as the water runs downstream (and so the unhealthy chemicals would accumulate at the later transects). In addition, chemical levels (potassium pH, and phosphorus) decreased to very low amounts compared to last year (Low/Medium, 6.5/7, Med-Low respectively). Although lower amounts of these chemicals are good, some of each chemical is still necessary for the organisms in the creek to survive. Low amount of these chemicals are central to the prosperity of the creek, and so if chemical amounts continue to decrease, there may be a problem with nutrient levels and the ability of organisms to thrive.

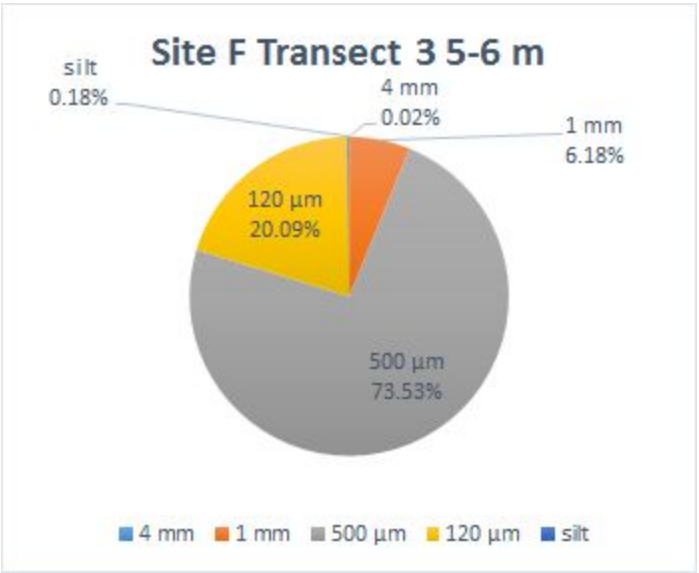
Data Table #1: Site F Transect 3 -- Sediment Composition

Sample #	4 mm		1 mm		500 micrometers		120 micrometers		Silt		Total (g)
	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	Mass (g)	% of Total	
2-3 m	8.7	0.3370	384.9	14.93	1846.7	71.62	336.0	13.03	2.2	0.0853	2578.5
5-6 m	0.4	0.0188	131.6	6.18	1567.0	73.50	428.2	20.1	3.8	0.1780	2131.0

Sediment Analysis:

Compared to the Spring 2015 data, for 4 mm in Transect 3 2-3 meters, the amount has significantly increased, while for Transect 3 5-6 meters the amount has significantly decreased. The same pattern is visible in Transect 3 2-3 meters and Transect 3 5-6 meters for 1 mm. For 500 micrometers, both of the amounts for Transect 3 2-3 meters and Transect 3 5-6 meters have greatly increased. This is the same case for 120 micrometers, both Transect 3 2-3 meters and Transect 3 5-6 meters drastically increased. As for silt, the silt levels have decreased, which is a good sign of a healthier creek. The less silt the creek has, the better because it won't cause trouble for the fish and wildlife.



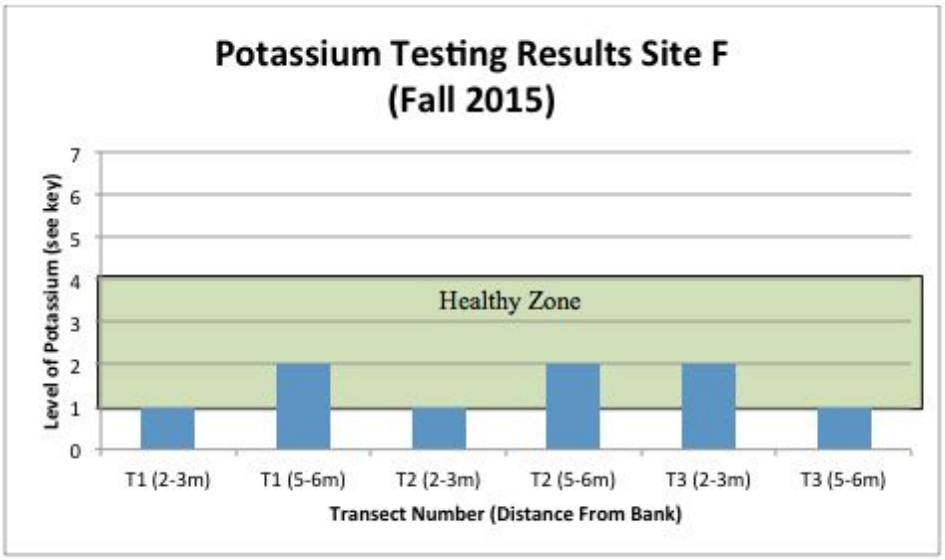


Data Table #2: Site F Transect 3 -- Chemical Testing

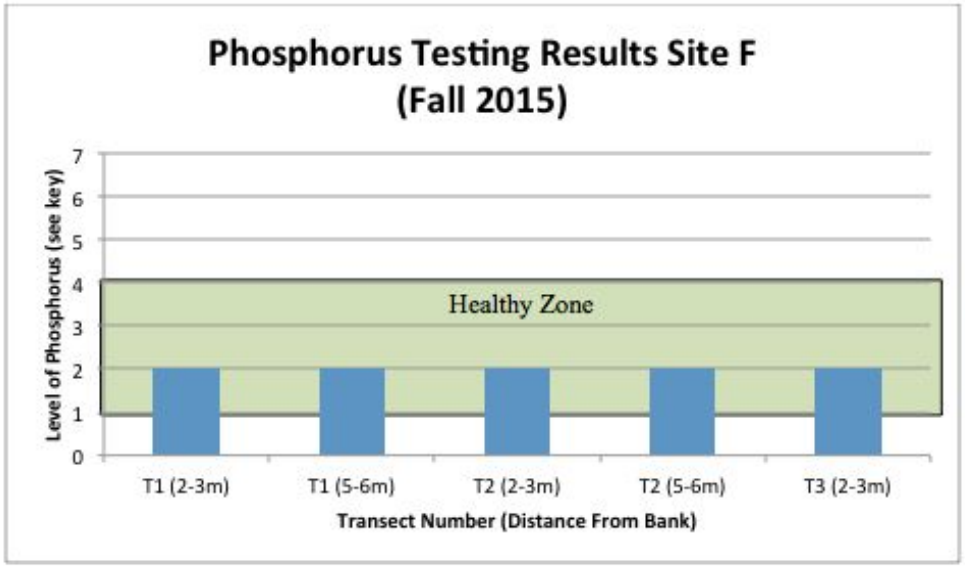
Transect	Distance from N Bank (in)	*Corbicula*	Feature	Potassium	pH	Nitrogen	Phosphorous
3	2-3 meters	0	Dry	Low	6	Trace	Low
3	5-6 meters	0	Dry	Very low	6	Trace	Low

Chemical Analysis:

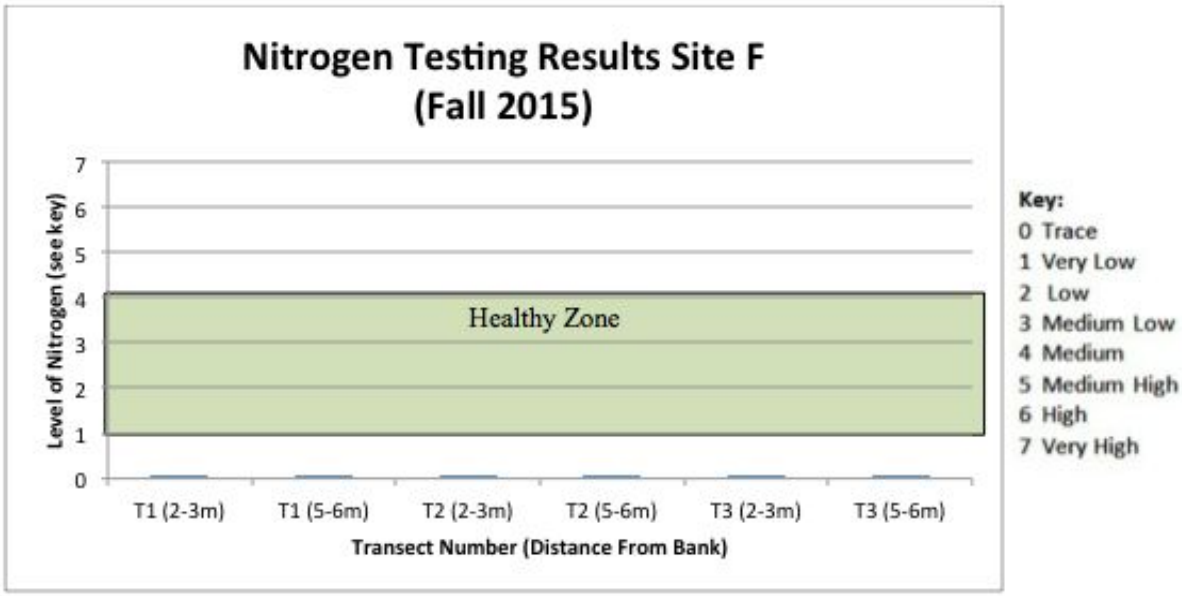
The number of *Corbicula* decreased for Transect 3 5-6 meters, from 2 to 0, which is an indicator of good health because *Corbicula* is an invasive clam species that appears in conditions that are unhealthy for most other organisms in our creek. In addition, potassium and phosphorus levels both dropped for both samples at Transect 3. While this is a good thing, because quick increases in the levels of these two nutrients can cause an algae bloom and oxygen depletion, these nutrients are still necessary for plant and animal growth. Therefore, further depletion may cause problems in our creek.



Key:
0 Trace
1 Very Low
2 Low
3 Medium Low
4 Medium
5 Medium High
6 High
7 Very High



Key:
0 Trace
1 Very Low
2 Low
3 Medium Low
4 Medium
5 Medium High
6 High
7 Very High



*All transects showed trace amounts of nitrogen. All below healthy levels of nitrogen.