

Class: CAM 7 – _____

Name: _____

Functional Feeding Groups (FFG) analysis

Field Trip Date: _____

Field Trip Location: _____

Answer the following (use a separate page if necessary):

1) Review the “Aquatic Organisms” and “Food Processing” articles from Oregon Department of Fish & Wildlife’s Stream Scene. Based on this information, and your understanding of energy flow in an ecosystem (energy roles, food webs, energy pyramids, ...), and your knowledge of the collection site, make a prediction about the order of abundance for each of the following “functional feeding groups” (FFG). (1 = most abundant ... 4 = least abundant)

_____ scrapers _____ shredders _____ collectors _____ predators

2) What specific information or experience did you use to form your prediction? Explain.

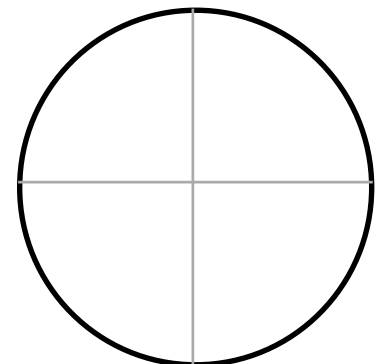
3) Use the Macroinvertebrate Totals handout (and calculator) to complete the following summary table:

FFG	FFG Totals
Scrapers	
Collectors	
Shredders	
Predators	
Total Macros =	

4) Calculate the percentage (round to nearest tenth) of the total for each of the feeding groups and enter it into the table below (**% of Total = FFG total / Total Macros X 100**). Calculate the number of degrees of a circle this percentage represents (**# of Degrees = 360° X % of Total**) and add the information to the table.

FFG	FFG total/Total Macros	% of Total	# of Degrees	Graph Color
Scrapers				
Collectors				
Shredders				
Predators				
	Total Macros =			

5) Create a pie graph using the percentages for the four feeding groups. Use a different color for each FFG. Show the color used for each FFG in the right column of the table above. (Hint: the lines shown in the circle are to help align your protractor.)



6) Describe your graph by ranking its abundance of feeding groups.

most abundant FFG	
2nd most abundant FFG	
3rd most abundant FFG	
least abundant FFG	

7) Compare your pie graph to the graphs shown for **The River Continuum** (in the ODF&W's "Food Processing" article – pg. 151). Which River Continuum graph does yours most closely resemble — is it most like a **headwater**, **midreach**, or **large order** stream? _____

8) Describe the river continuum graph you chose in #7 by ranking its abundance of feeding groups.

most abundant FFG	
2nd most abundant FFG	
3rd most abundant FFG	
least abundant FFG	

9) See the diagram on pg. 152 of the ODF&W "Food Processing" article. What stream widths (in yards) are indicated by the River Continuum for the graph you selected in #7?

More than: _____ yards and less than: _____ yards

10) What was the stream width for the E. Fork of the Lewis River at Lewisville Park? _____ yards

11) How does the stream width for the E. Fork of the Lewis River at Lewisville Park compare with the stream width indicated in "The River Continuum"? (Does the East Fork's width fit the range in question #9 or is it different? Give specific values in your answer by restating the River Continuum range and the East Fork's measured width.)

12) How does your predicted ranking of FFG's (question #1) compare to the actual data (see questions #3 - #5)? What similarities or differences are there? (Make at least two comparisons)

13) Answer the following questions using observations made during our field trips, information learned in class (about food webs, energy pyramids, ...) or details provided in the ODF&W's food processing and river continuum article.

a) Give a reason for the higher % of the most abundant (or second most abundant) feeding group found in the E. Fork of the Lewis River at Lewisville Park.

b) Why were there fewer of the least abundant (or next to least abundant) group?

14) Write one question you have about macros (their life cycle, adaptations, abundance, ...), stream ecosystems, or the results of our water quality tests on the East Fork at Lewisville Park? (Remember: Questions become the seeds for new investigations!)