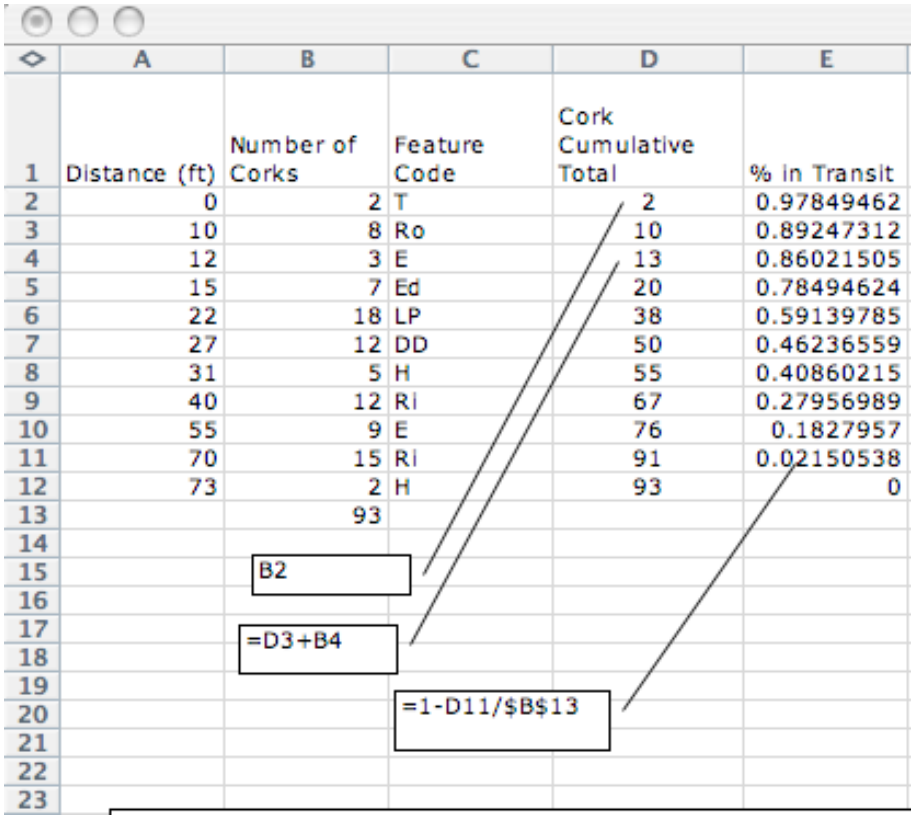
CORK TRANSPORT EXERCISE
SAMPLE CALCULATIONS & GRAPHS

I. Transit Calculations

This section provides two methods that can be used to calculate the percent of corks in transit:

Spreadsheet

The spreadsheet example (containing hypothetical data) will make the necessary calculations.



	A	B	C	D	E
1	Distance (ft)	Number of Corks	Feature Code	Cork Cumulative Total	% in Transit
2	0	2	T	2	0.97849462
3	10	8	Ro	10	0.89247312
4	12	3	E	13	0.86021505
5	15	7	Ed	20	0.78494624
6	22	18	LP	38	0.59139785
7	27	12	DD	50	0.46236559
8	31	5	H	55	0.40860215
9	40	12	RI	67	0.27956989
10	55	9	E	76	0.1827957
11	70	15	RI	91	0.02150538
12	73	2	H	93	0
13		93			
14					
15		B2			
16					
17		=D3+B4			
18					
19					
20			=1-D11/B13		
21					
22					
23					

Calculator

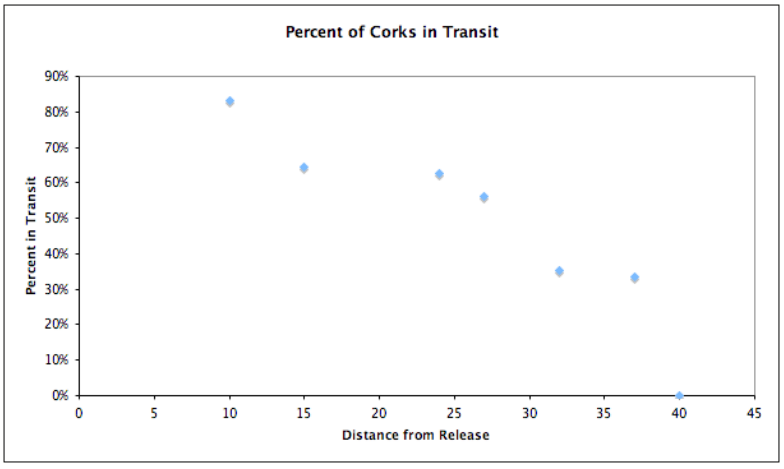
The following example is a calculator-based method to calculate the number of corks in transit in the stream study. The students need to first calculate the number of corks removed at each site. To do this note the number of corks at each site and add it to the number of corks at the previous site.

	Distance	Number of corks at site	Total Number of Corks Removed	Calculation
Site #1	10	8	8	Site #1 Total
Site #2	15	9	17	Site #1 Total+ Site #2 Total
Site #3	24	1	18	Site #2 Total + Site #3 Total
Site #4	27	3	21	Site #3 Total + Site #4 Total
Site #5	32	10	31	Site #4 Total + Site #5 Total
Site #6	37	1	32	Site #5 Total + Site #6 Total
Site #7	40	16	48	Site #6 Total + Site #7 Total
	TOTAL =	48		

Next we need to calculate the percent of corks that are still floating in the stream (in transit). For each site divide the total numbers of corks removed by the total number of corks released and subtract that value from one, then convert that number to percent. Below are some hypothetical results.

	Total Number of Corks Removed	Percent in Transit	Calculation
Site #1	8	83.33	1-(8/48)
Site #2	17	64.58	1-(17/48)
Site #3	18	62.5	1-(18/48)
Site #4	21	56.25	1-(21/48)
Site #5	31	35.41	1-(31/48)
Site #6	32	33.33	1-(32-48)
Site #7	48	0	1-(48/48)
	Total =	48	

To visualize the effect, graph the Distance vs. Percent in Transport.

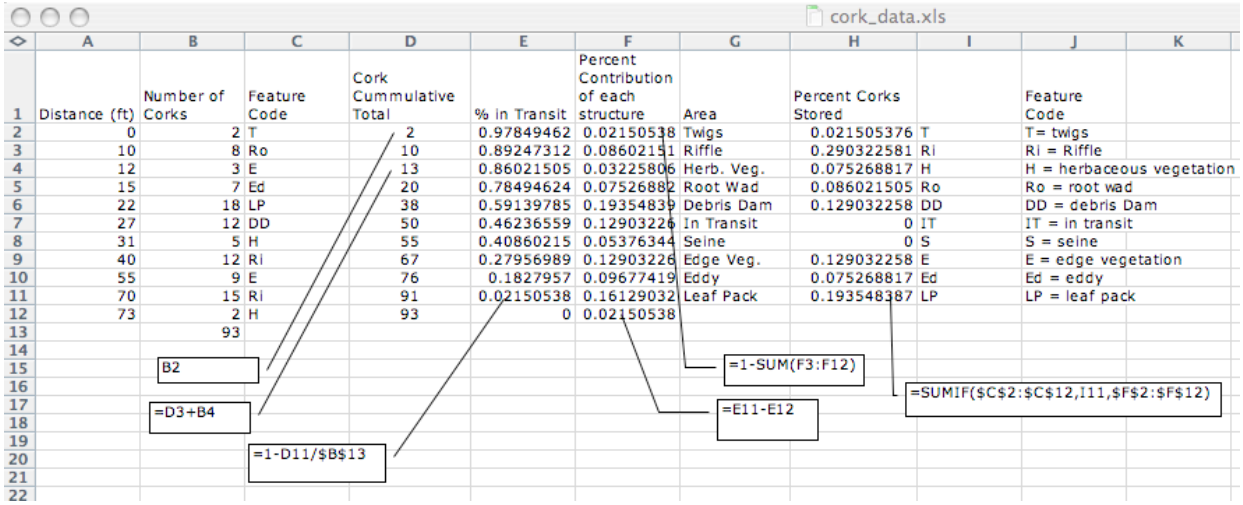


II. Percent of Corks Stored at each Stream Feature

This section presents two ways to calculate the percent of corks stored at each stream feature.

Spreadsheet

The spreadsheet (containing hypothetical data) illustrates one way to calculate the percent of corks stored in each area.



	A	B	C	D	E	F	G	H	I	J	K
1	Distance (ft)	Number of Corks	Feature Code	Cork Cummulative Total	% in Transit	Percent Contribution of each structure	Area	Percent Corks Stored		Feature Code	
2	0	2	T	2	0.97849462	0.02150538	Twigs	0.021505376	T	T= twigs	
3	10	8	Ro	10	0.89247312	0.08602151	Riffle	0.290322581	Ri	Ri = Riffle	
4	12	3	E	13	0.86021505	0.03225806	Herb. Veg.	0.075268817	H	H = herbaceous vegetation	
5	15	7	Ed	20	0.78494624	0.07526882	Root Wad	0.086021505	Ro	Ro = root wad	
6	22	18	LP	38	0.59139785	0.19354839	Debris Dam	0.129032258	DD	DD = debris Dam	
7	27	12	DD	50	0.46236559	0.12903226	In Transit	0	IT	IT = in transit	
8	31	5	H	55	0.40860215	0.05376344	Seine	0	S	S = seine	
9	40	12	Ri	67	0.27956989	0.12903226	Edge Veg.	0.129032258	E	E = edge vegetation	
10	55	9	E	76	0.1827957	0.09677419	Eddy	0.075268817	Ed	Ed = eddy	
11	70	15	Ri	91	0.02150538	0.16129032	Leaf Pack	0.193548387	LP	LP = leaf pack	
12	73	2	H	93	0	0.02150538					
13		93									
14											
15											
16											
17											
18											
19											
20											
21											
22											

Calculator

The following example is a calculator-based method to calculate the number of corks in transit in the stream study. The students first need to calculate what percent of the corks are trapped at each site. Simply divide the number of corks at each site by the total number of corks and convert your answer to a percent.

	Feature Code (Ri, E, H etc)	Number of Corks at Site	Percent trapped at each site
Site #1	T	8	(8/48)
Site #2	Ri	9	(9/48)
Site #3	DD	1	(1/48)
Site #4	E	3	(3/48)
Site #5	DD	10	(10/48)
Site #6	Ri	1	(1/48)
Site #7	LP	16	(16/48)
	Total =	48	

Finally add up the percents if any features have more than one occurrence. This will give you the total percent for the features.

Feature Code	Total Percent trapped at each site
T	16.6%
Ri	20.8%
DD	22.9%
E	6.25%
LP	33.3%

Producing a bar graph of the Area vs. Percent Corks Stored yields: