

Solution for Homework No. 3: Spatial Analysis

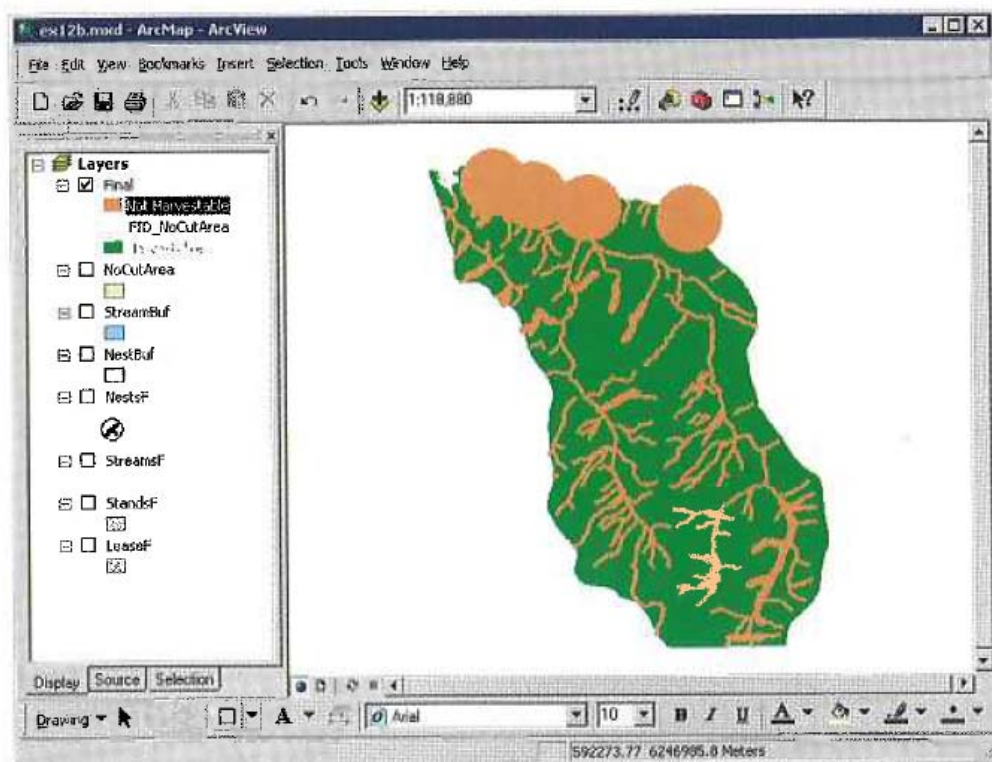
CEEN 4800/6965 - Special Topics

Geographic Information Systems and Hydrologic & Hydraulic Modeling, Dr. Sam Shamsi

Q1. Complete Exercise 12a (Buffering features). Submit a screenshot or map shown on page 324.



Q2. Complete Exercise 12b (Overlaying data). Submit a screenshot or map shown on page 335.



Q3. Complete Exercise 12c (Calculating attribute values) and answer the following questions.

Question 3.1. Before completing Step 7: For harvestable area polygon with Object ID = 5, provide the following data:

Stand Value = **0.645025**

Value Per Meter = **26**

Stand ID = **337**

Note: Above values are also given in Table on Page 338.

Question 3.2. After completing Step 9: For harvestable area polygon with Object ID = 8, provide the following data:

Stand Value = **3.21903**

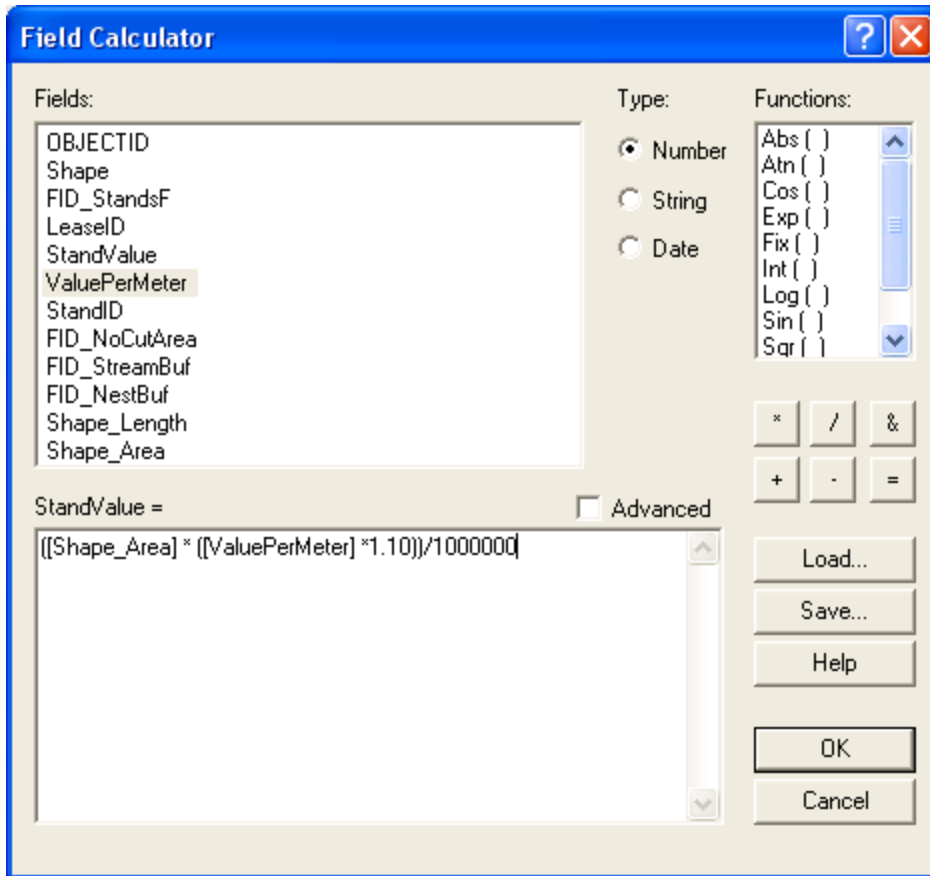
Value Per Meter = **21**

Stand ID = **364**

Note: Above values are also given in Table on Page 339.

Question 3.3. After completing Step 10: Suppose you underestimated stand unit cost (ValuePerMeter) by 10% in your calculations and would like to repeat your calculations to recalculate the correct bid price. To recalculate the bid price, repeat steps 7 to 10 but modify the expression entered in field calculator (Page 339) to increase the ValuePerMeter by 10% (i.e. multiply it by 1.1). Provide a screenshot of the revised Statistics window and answer the following question:

- The original bid price = **\$1,052.08379 million** or \$1.052 billion (Given on page 340. For units see bottom of Page 287)
- The corrected bid price = **\$1,157.292171 million** or \$1.157 billion
 - See Field Calculator screenshot below for revised SQL statement based on calculation method described at the bottom of Page 287.
 - See screenshot of Statistics window below for calculated value
- Percent difference in the original and corrected bid price = $(1157.292171 - 1052.08379) / 1052.08379 = 0.10 = \mathbf{10\%}$



Attributes of Final

ObjectID*	Shape*	FID_StandsF	LeaseID	StandValue	ValuePerMeter	StandID	FID_NoCutArea	FID_StreamBuf	FID_Mes
1	Polygon	1	F	5.92417	63	305	-1	0	
2	Polygon	2	F	4.85624	27	308	-1	0	
3	Polygon	3	F	3.41113	64	328	-1	0	
4	Polygon	4	F	5.42592	52	338	-1	0	
5	Polygon	5	F	0.709528	26	337	-1	0	
6	Polygon	6	F	2.64208	25	345	-1	0	
7	Polygon	7	F	8.07129	27	360	-1	0	
8	Polygon	8	F	3.54094	21	364	-1	0	
9	Polygon	9	F	5.35578	42	358	-1	0	
10	Polygon	10	F	4.88866	21	362	-1	0	
11	Polygon	11	F	3.65178	53	363	-1	0	
12	Polygon	12	F	1.0181	27	348	-1	0	
13	Polygon	13	F	1.04206	53	359	-1	0	
14	Polygon	14	F	0.674394	27	387	-1	0	
15	Polygon	15	F	0.942524	43	386	-1	0	
16	Polygon	16	F	3.88115	10	378	-1	0	
17	Polygon	17	F	7.2395	21	380	-1	0	
18	Polygon	18	F	0.503607	27	408	-1	0	
19	Polygon	19	F	6.24244	26	400	-1	0	

Record: 0 Show: All Selected Records: (0 out of 372 Selected.) Options

Statistics of Final



Field

StandValue

Statistics:

Count:	372
Minimum:	0.014304
Maximum:	12.222490
Sum:	1157.292171
Mean:	3.111000
Standard Deviation:	2.286176

Frequency Distribution

