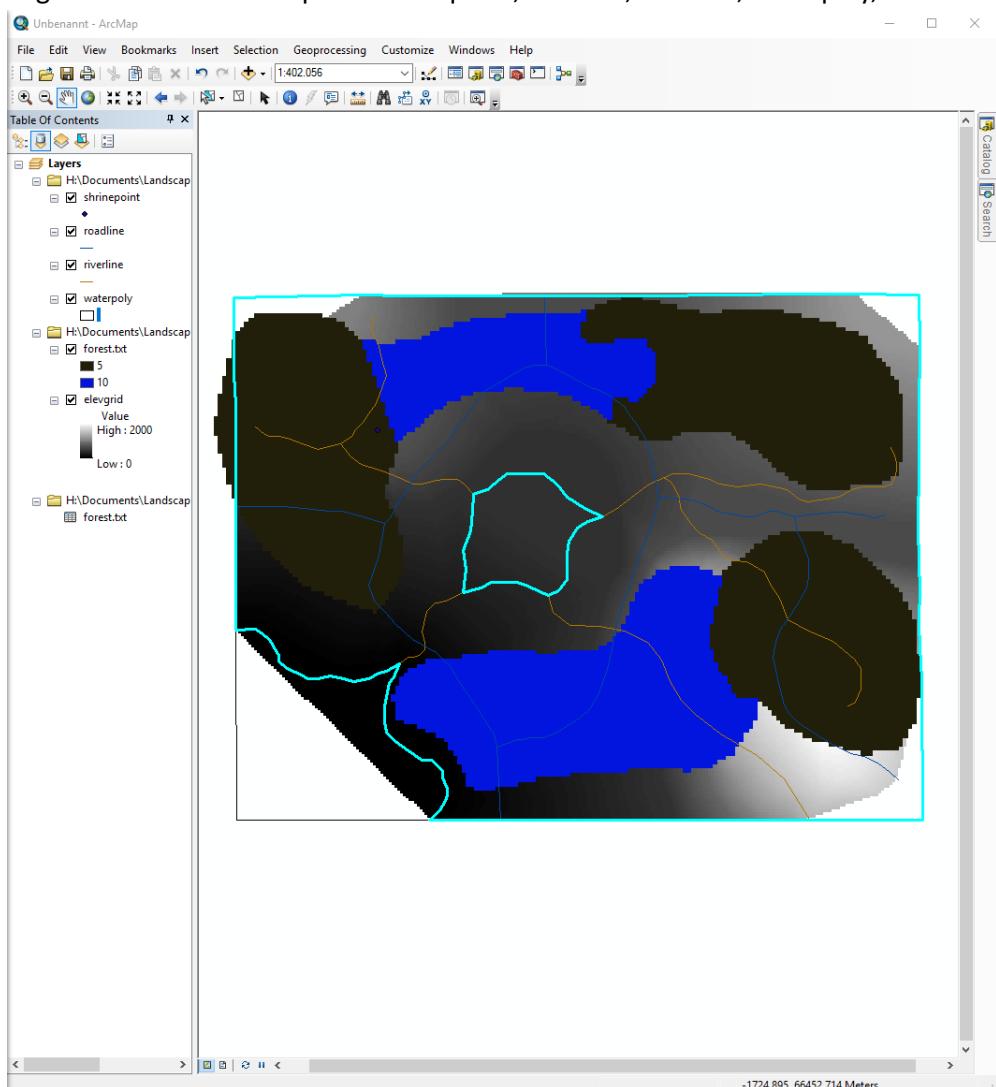
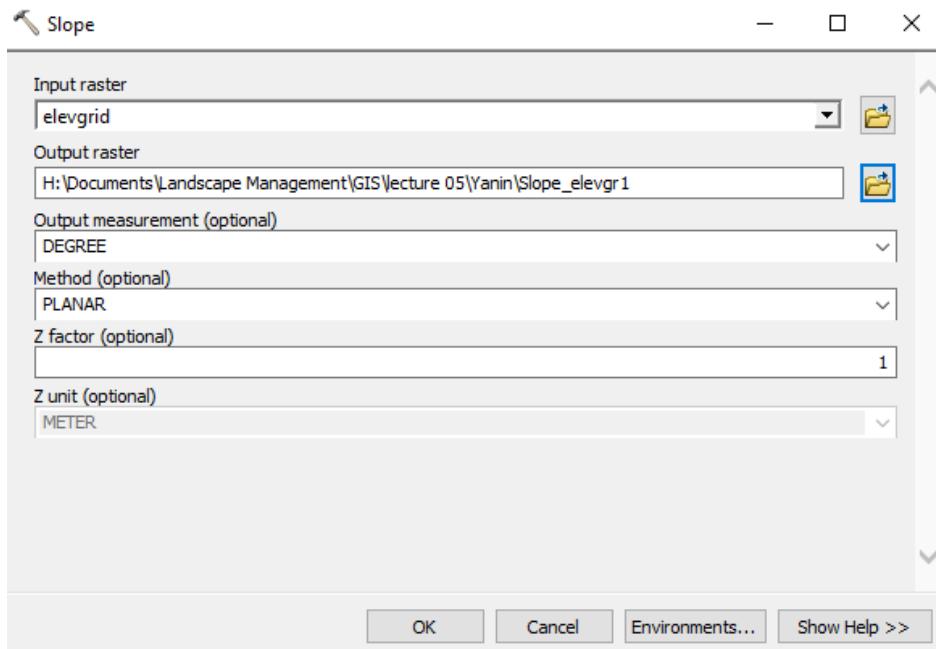


## Lecture 05

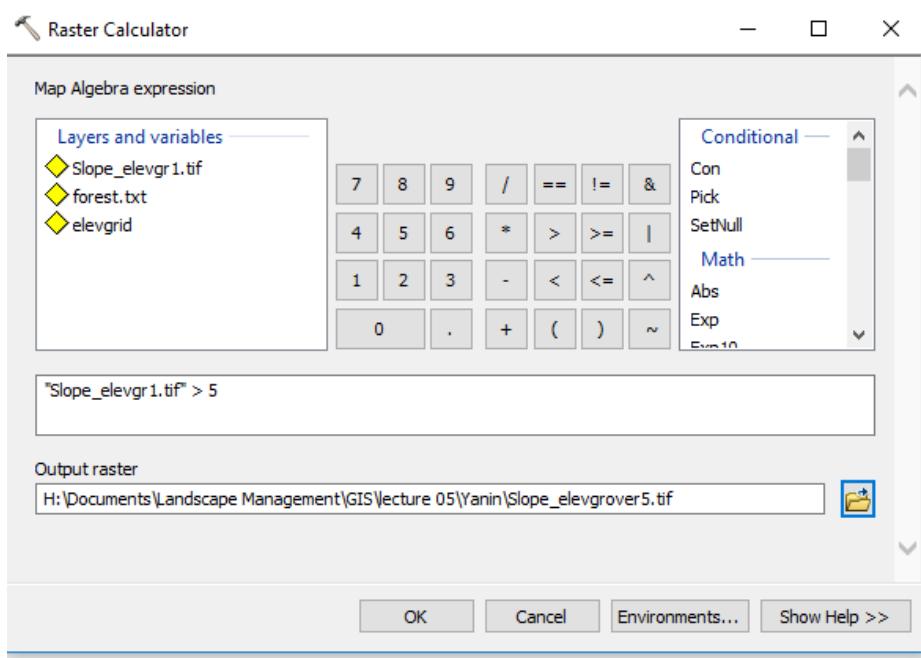
1. Drag the files onto work space: shrinepoint, roadline, riverline, waterpoly, forest.txt, elevgrid

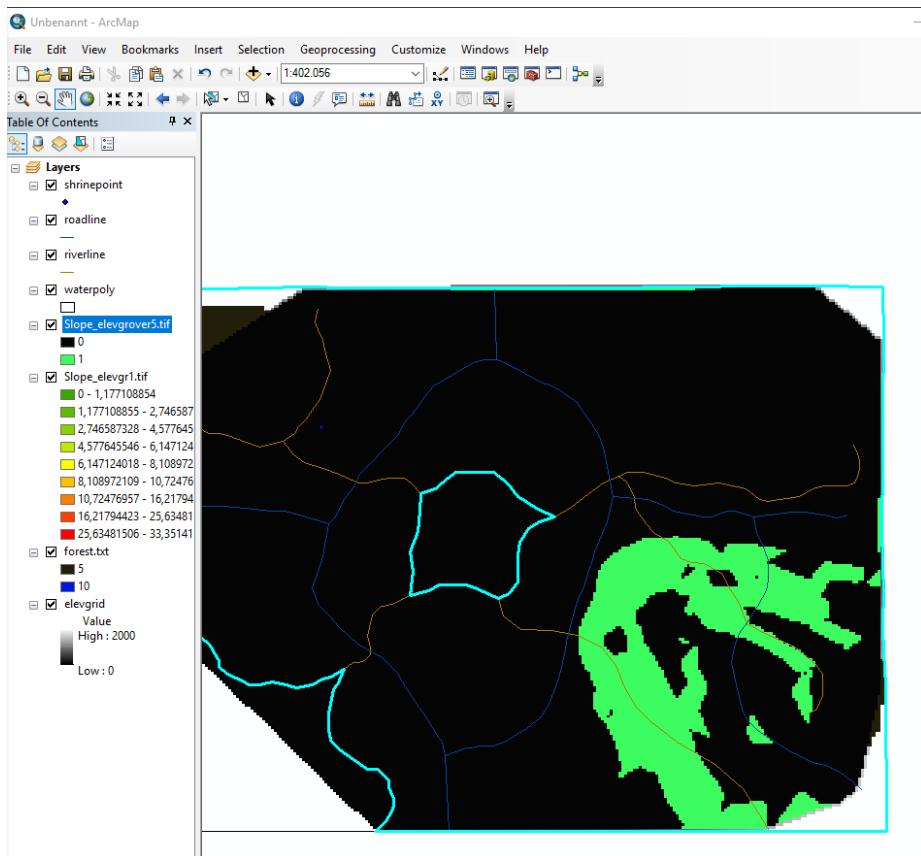


2. HUGAG First restriction: Hugag habitat restrictions of >5 degree slope (they live in areas over >5deg slope). Search for **Slope (Spatial Analyst)**. Adjust settings of Slope. Save as .tif file if with error.

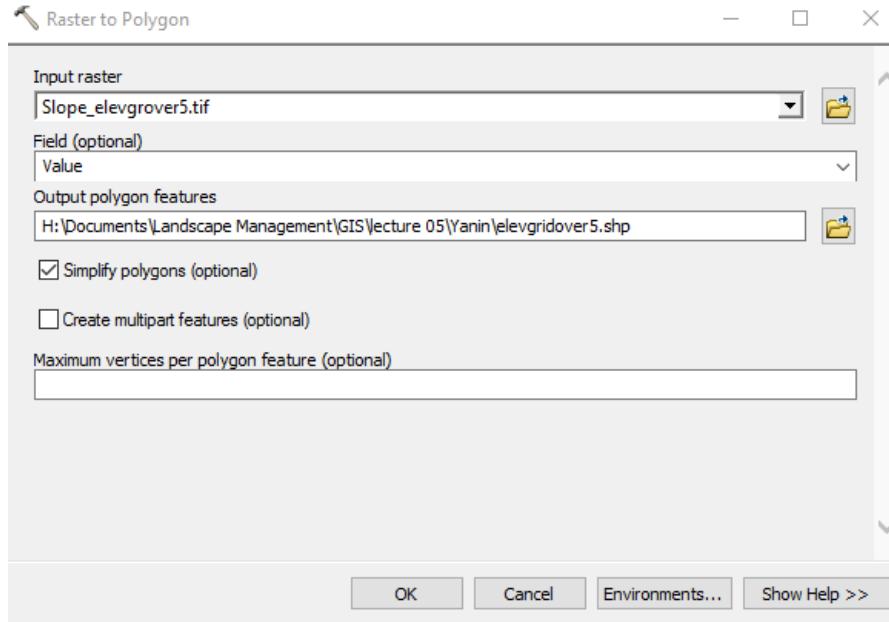


3. Calculate slope at >5deg. Search for **Raster Calculator (Spatial Analyst)**. Adjust settings of Raster Calculator. Save as .tif file if with error.

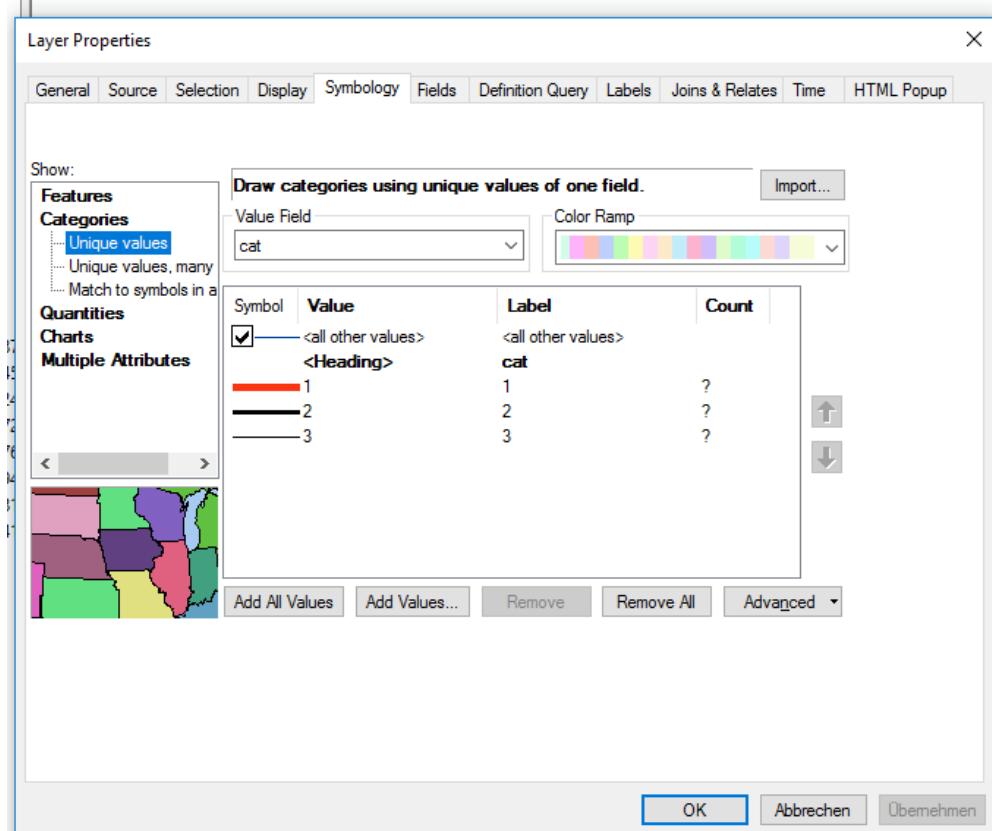




4. Convert raster to polygon file. Search for **Raster to Polygon (Conversion)**. Adjust settings of Rastor to Polygon.

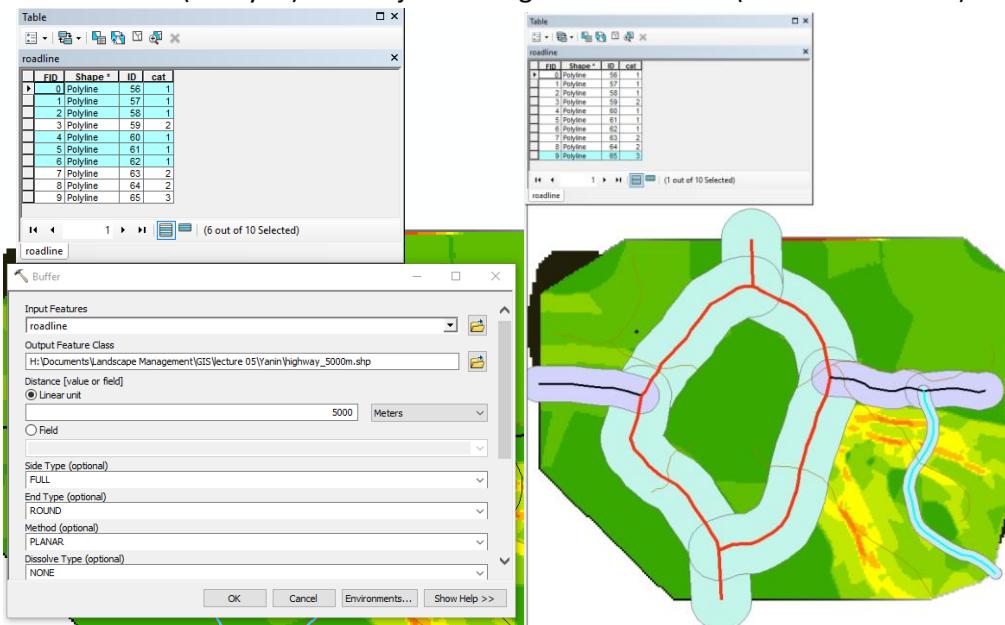


5. HUGAG Second restriction, distances from roads. Right click layer properties of roadline. Go to Symbology tab. Select „cat“ from Value Field dropdown arrow. Press Add All Values below. Change symbology of the category field number. 1=highway (bold red line). 2=major road (black red line). 3=minor road (thin black line). Check with table attributes of the layer file to confirm that the category and actual roads match.

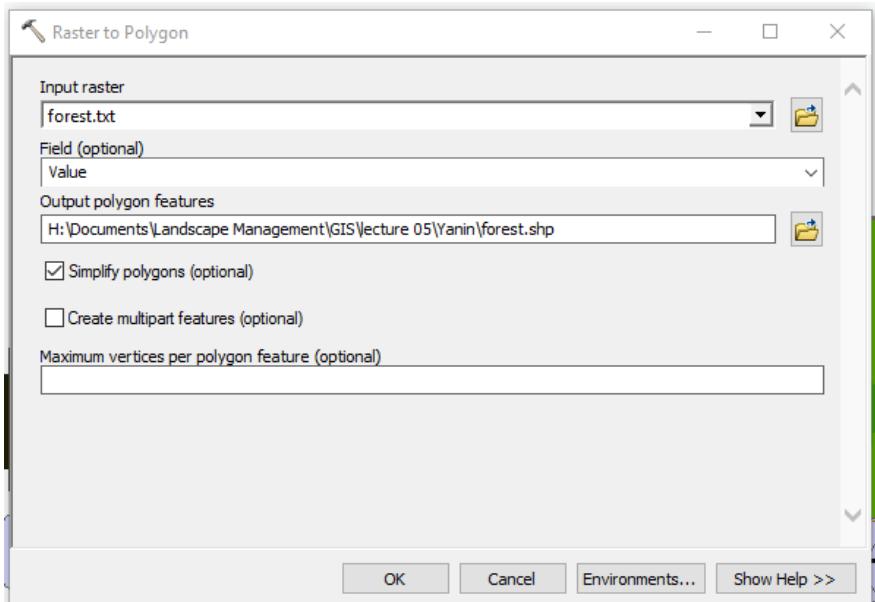


6. Create buffer around the road as specified by the restrictions.

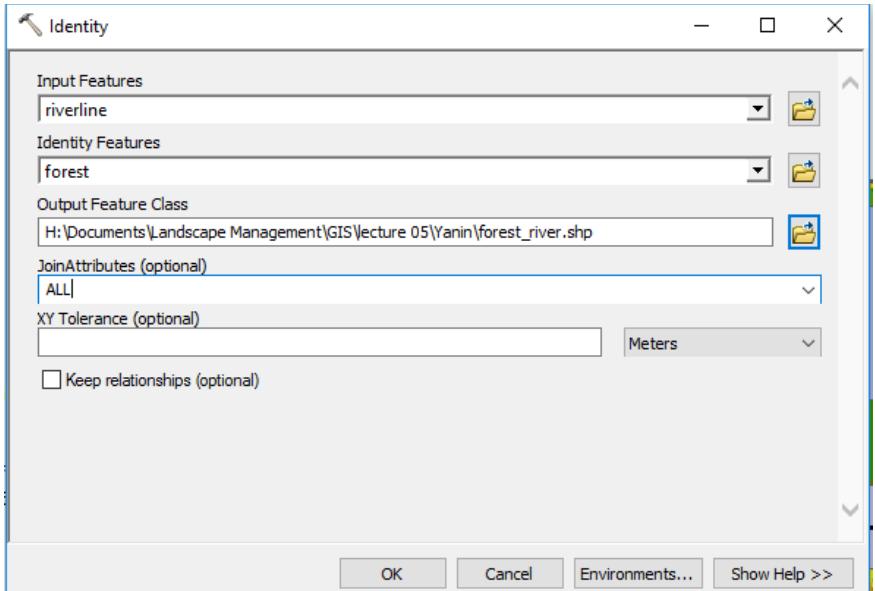
- HIGHWAY. Select all highways in Table Attribute of roadline layer file. Search for Buffer (Analysis) tool. Adjust settings with linear unit (of buffer distance) at 5000m.



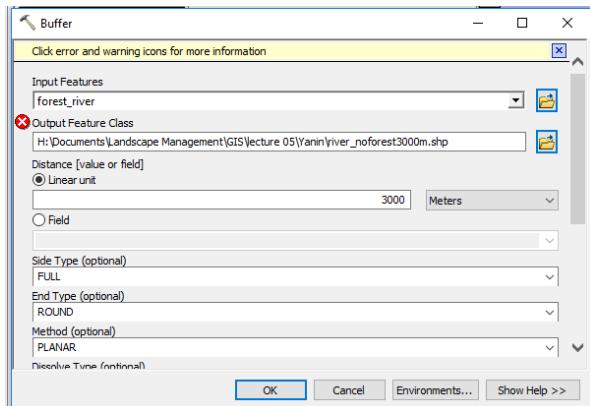
- HUGAG Third restriction, distances from forest. Convert forest.txt to polygon. Search for Raster to Polygon (Conversion) Tool. Adjust settings.

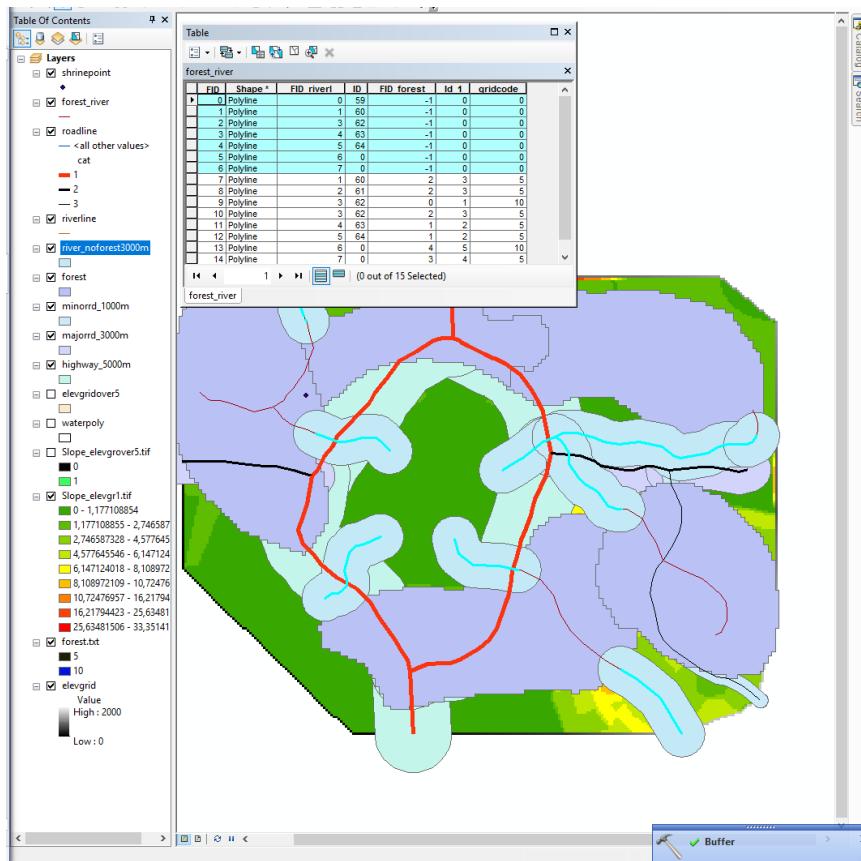


8. Combine forest.shp file with riverline. Search for Identity (Analysis) tool. Adjust settings.

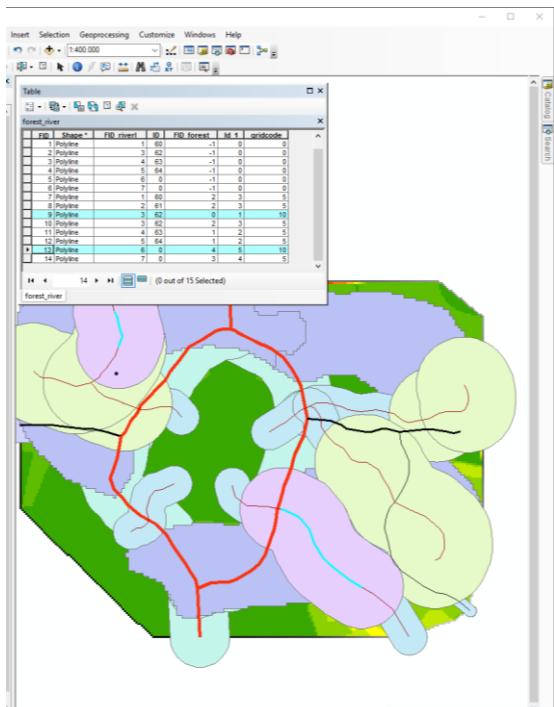


9. Open table attribute of forest\_river file you've just created. Select the rows with gridcode 0, which means there is no forest around these parts of the river. Search for Buffer (Analysis) tool and create buffer of 3000m around these.

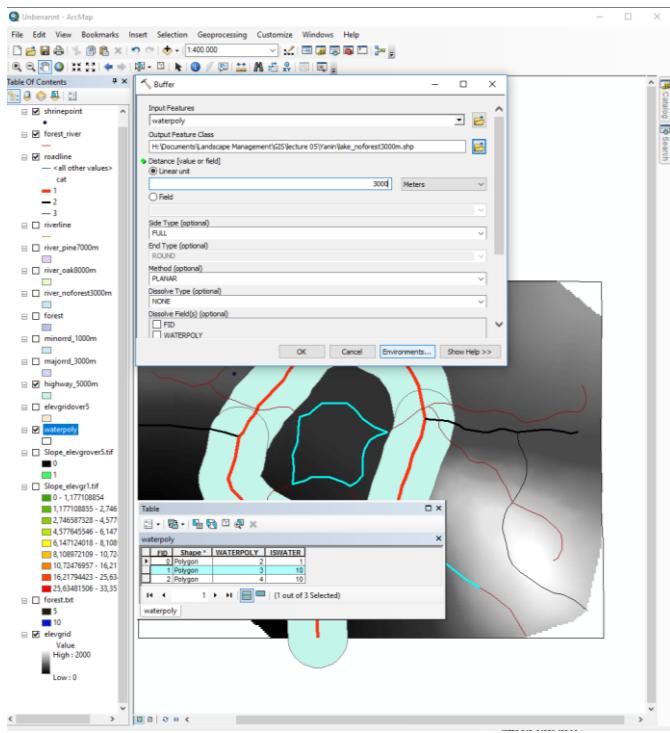




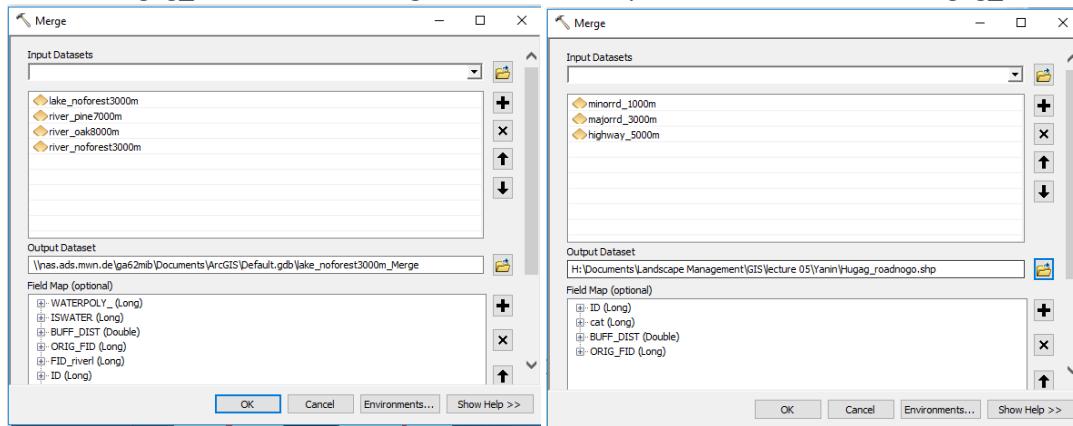
10. Table attribute of forest\_river data file. Select rows with gridcode 5, this is the oak forest surrounding the river (refer to map on the lecture file). Create buffer of 8000m.
11. Select rows with gridcode 10, this is the pine forest surrounding the river. Create buffer of 7000m.



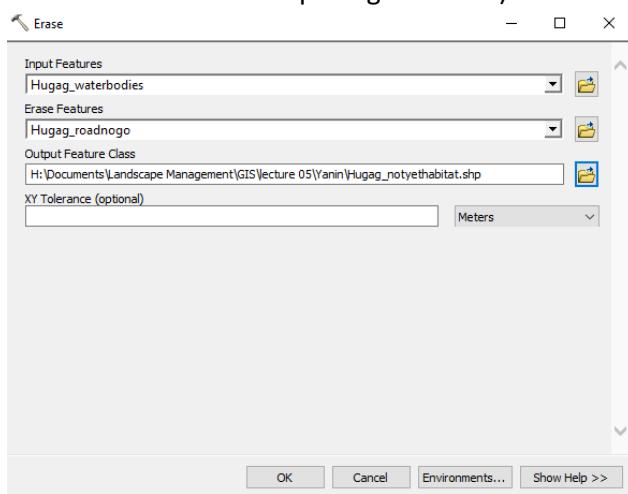
12. Create buffer from Lake. Only for No forest is applicable as there is no lake source in forests. There is no need to execute Identity analysis as with forest and river as there are no overlaps of layers. Select shape file of lake in waterpoly file and create buffer of 3000m.



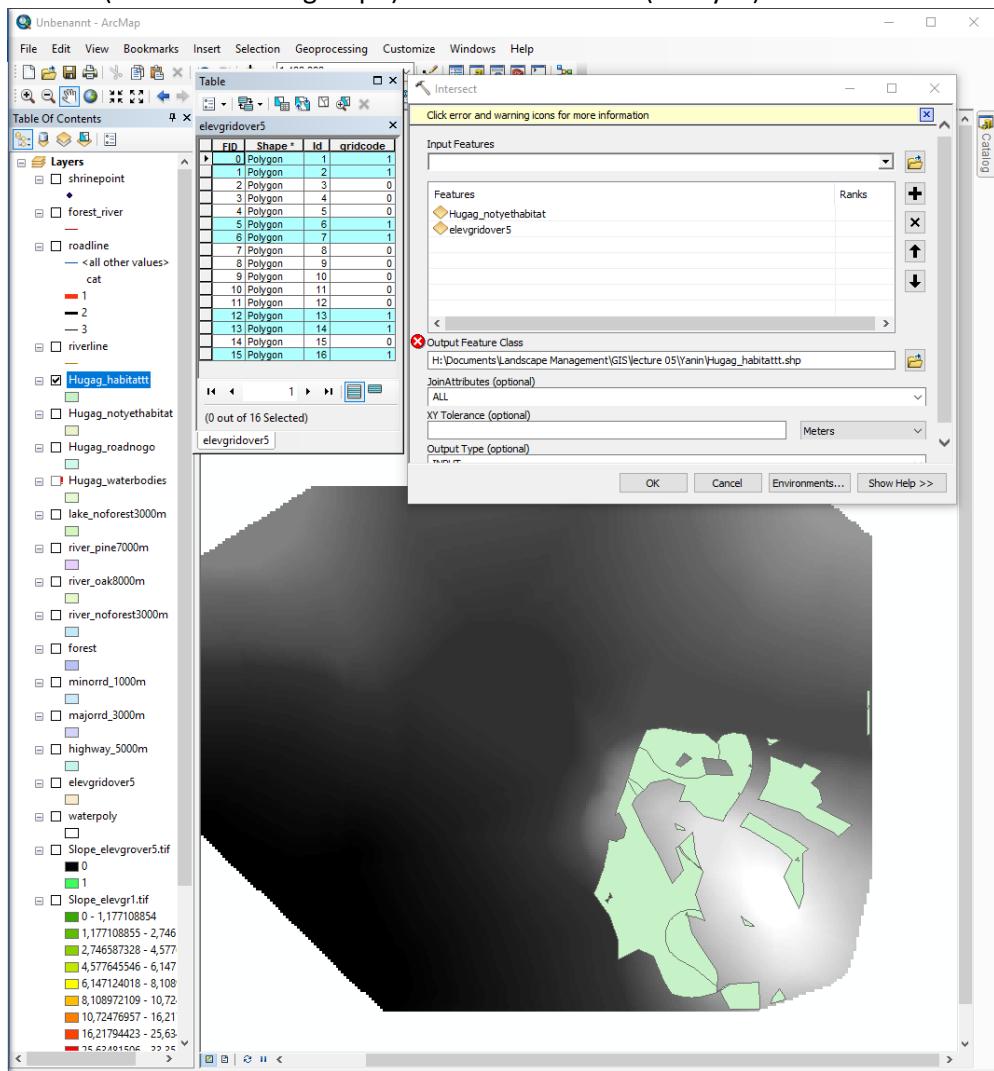
13. Merge all the areas suitable for HUGAG using Merge (Data Management) tool. Name: Hugag\_waterbodies. Merge all the buffer layers from roads. Name: Hugag\_roadnogo.



14. Erase Hugag\_roadnogo from Hugag\_waterbodies to get Hugag\_notyethabitat (need to calculate the slope degree into it). Search for Erase (Analysis) tool.



15. Work out the Hugag\_habitat (Hugag\_habitattt) by intersecting Hugag\_nottyethabitat with areas of >5deg slope. Open elevgridover5 table attribute and select polygons with gridcode 1 (areas with >5deg slope) Search for Intersect (Analysis) tool.



16.

