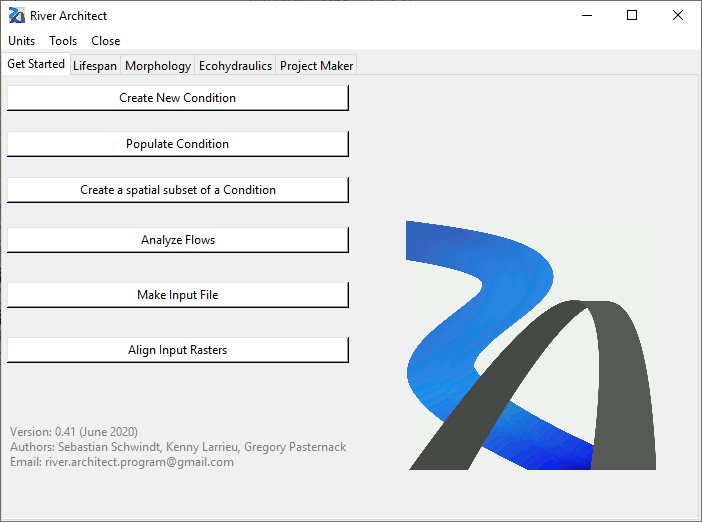
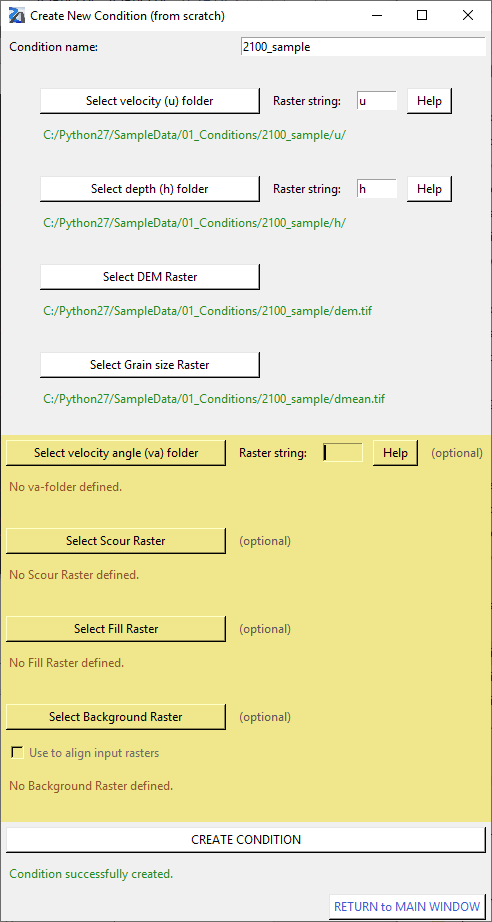
**River Architect**

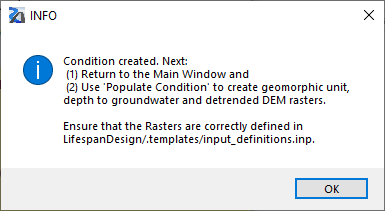
1. With 2100\_sample dataset
   1. Run RiverArchitect
      * C:\Python27\RiverArchitect\program\Start\_River\_Architect.bat



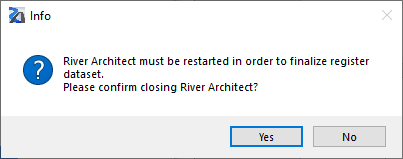
* 1. In “Get Started” tab - <https://riverarchitect.github.io/RA_wiki/Signposts#getstarted>, Click “Create New Condition”
     + Select u, h, DEM, Grain size raster as below



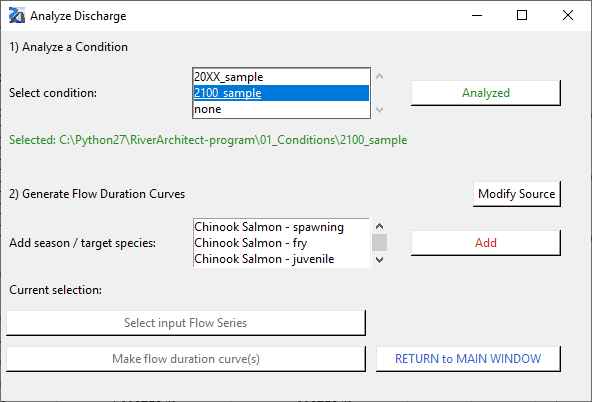
* 1. Click “Return to Main window”
  2. Then this INFO window will pop up:



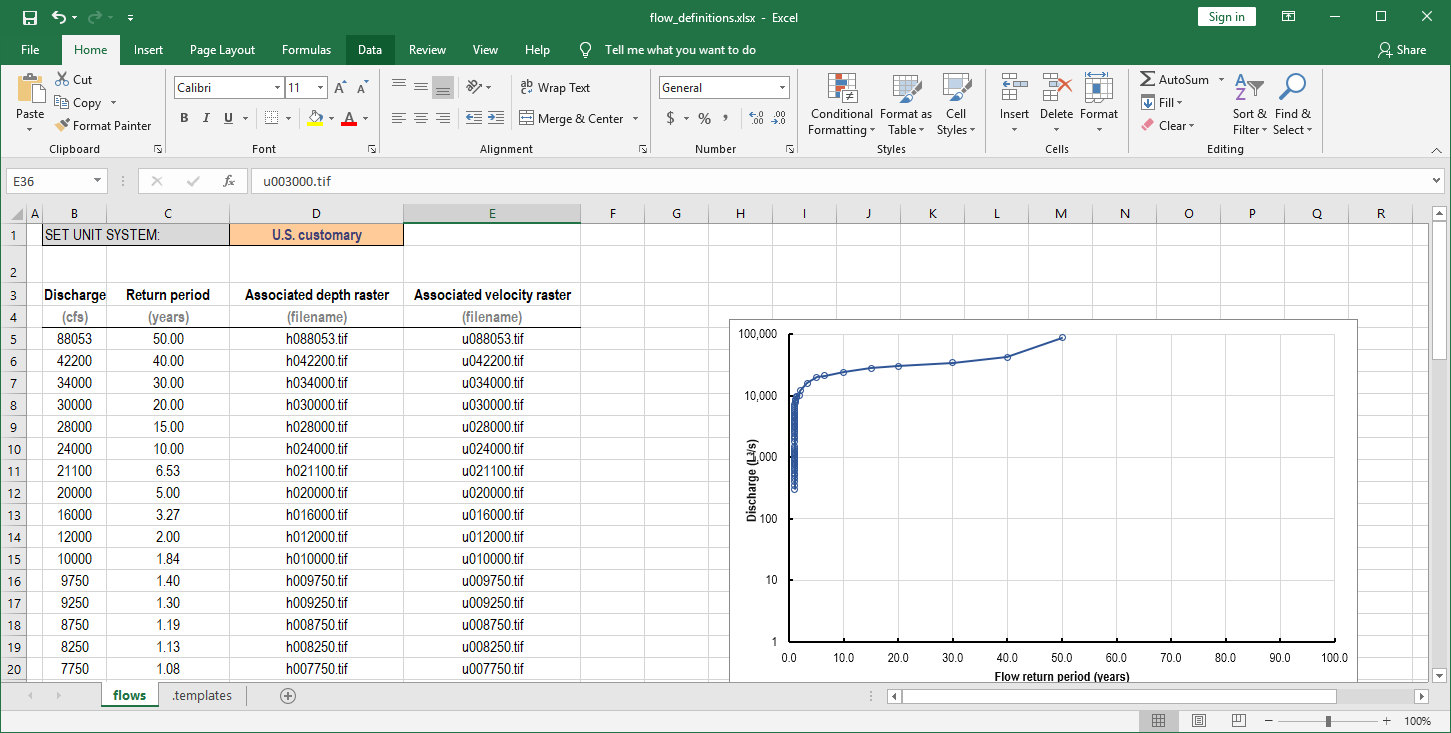
* 1. Restart River Architect



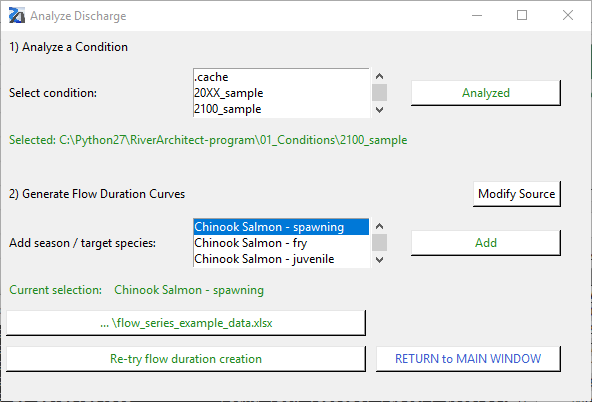
* 1. In 1), select 2100\_sample and click “Analyze Discharge” and select 2100\_sample and analyze.



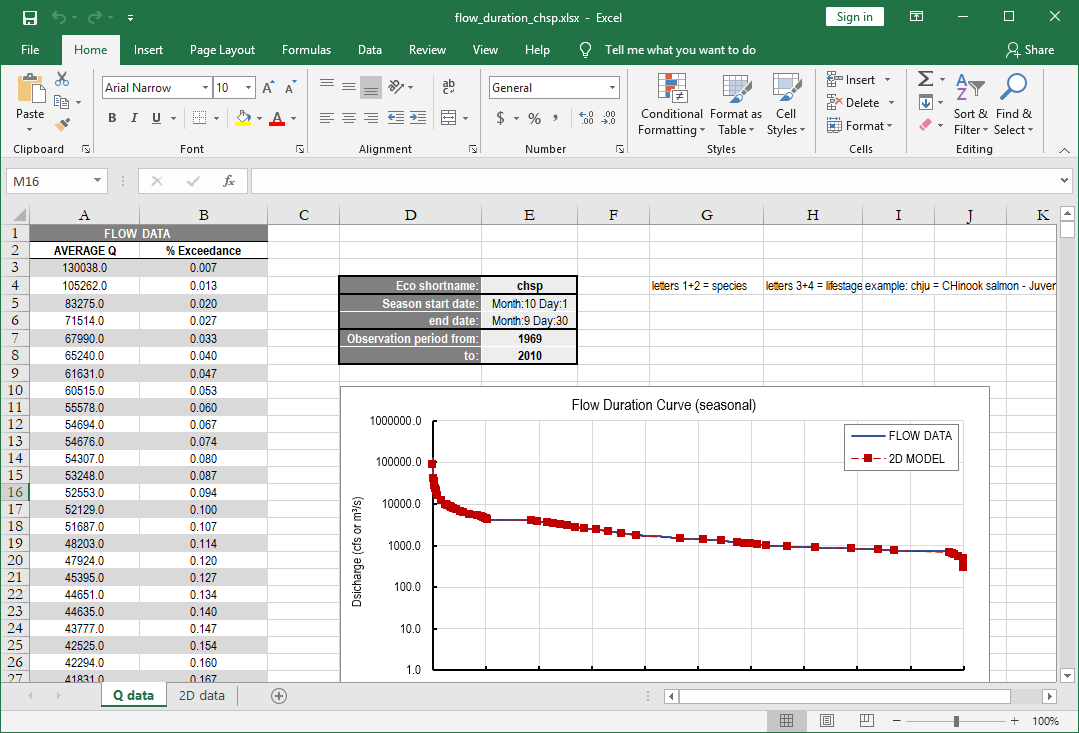
* 1. Then an excel sheet would pop up – manually type in Return periods and save the file.



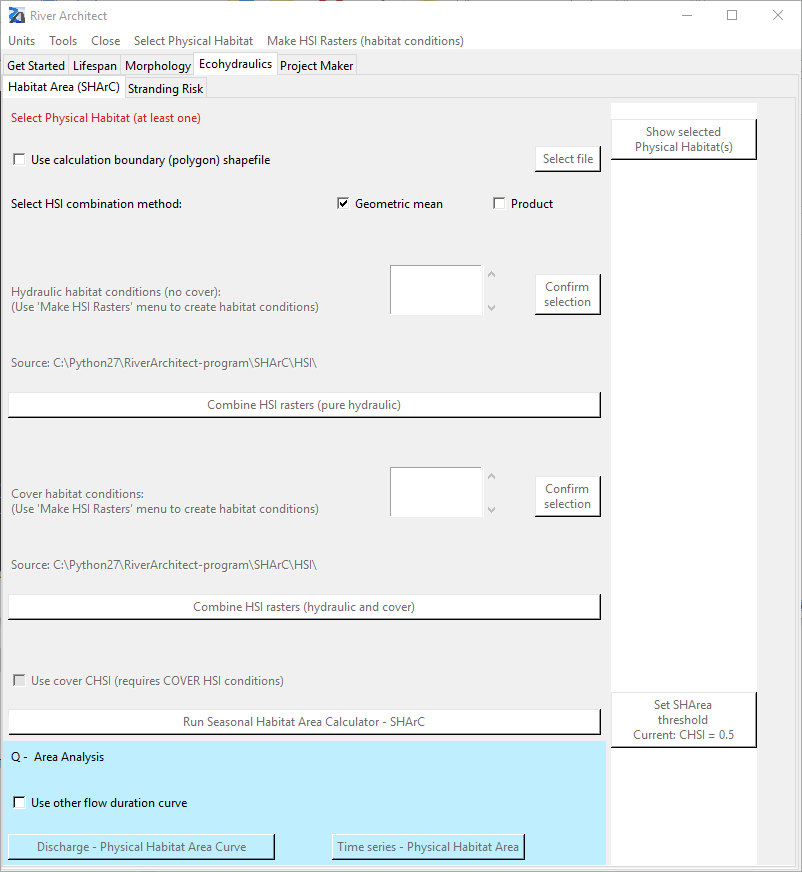
* 1. In 2), select one of the season/target species and click “Add”- in this tutorial, select Chinook Salmon - spawning
  2. Select flow series from C:\Python27\RiverArchitect-program\00\_Flows\InputFlowSeries



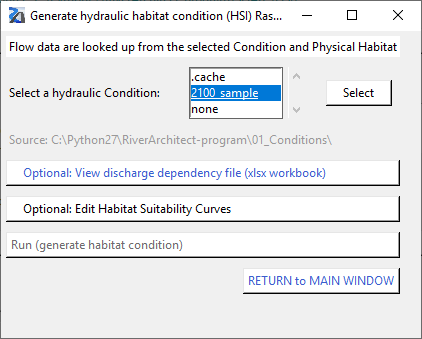
* 1. Click “Make flow duration curve”. Then the result excel file will pop up.



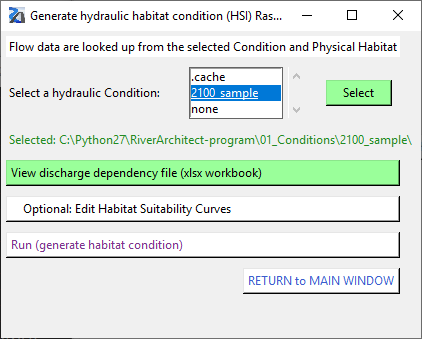
* 1. Click “Return to Main Window”
  2. Go to “Ecohydraulics” tab

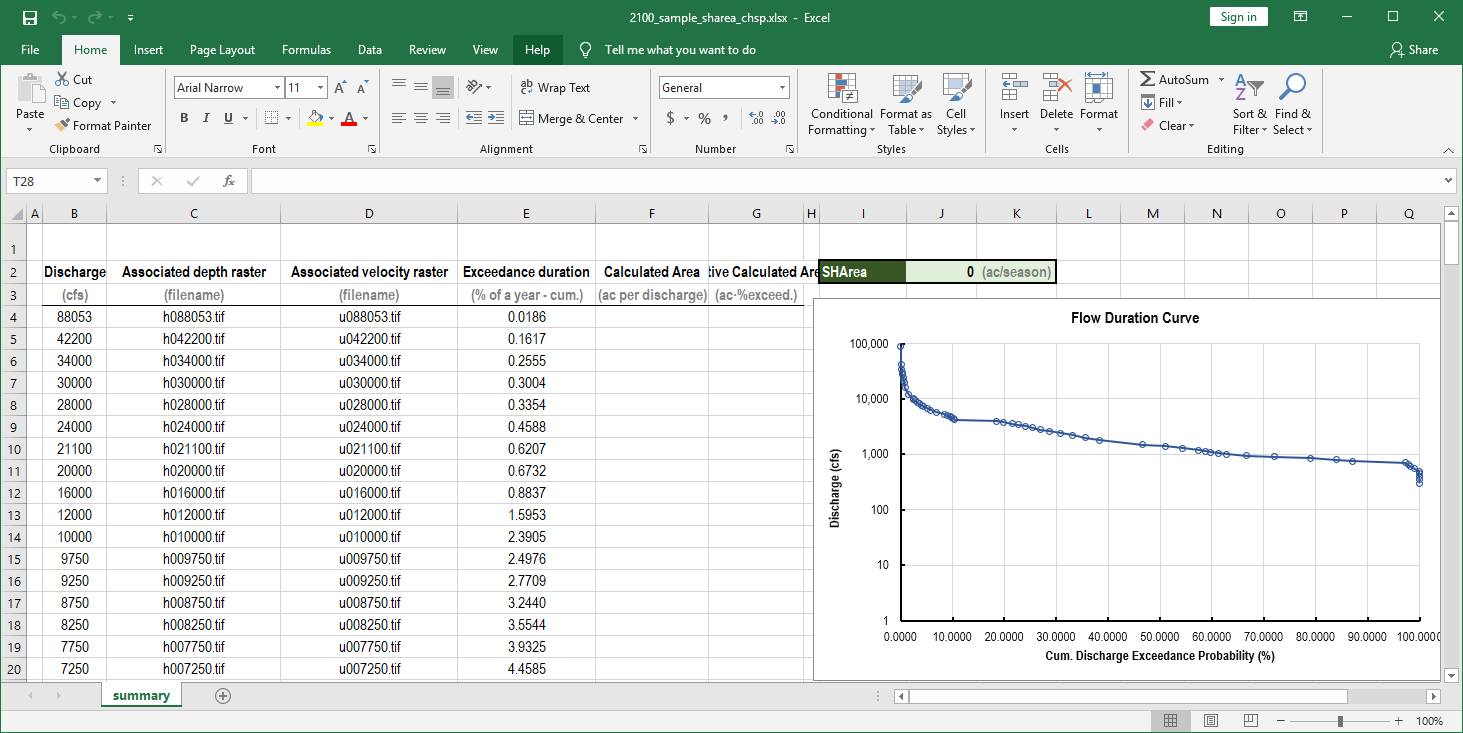


* 1. From the manu bar, click “Select Physical Habitat” and select the fish species – In this tutorial, select “Chinook salmon – spawning”
  2. You can check the selected physical habitats by clicking “Show selected Physical Habitat(s)”.
     + If you want to remove your selections, go to “Select Physical Habitat” and click “CLEAR ALL”.
  3. From the manu bar, click “Make HIS Rasters (habitat conditions” and click “Flow depth – flow velocity HSIs”
  4. Click “2100\_sample” and “Select”

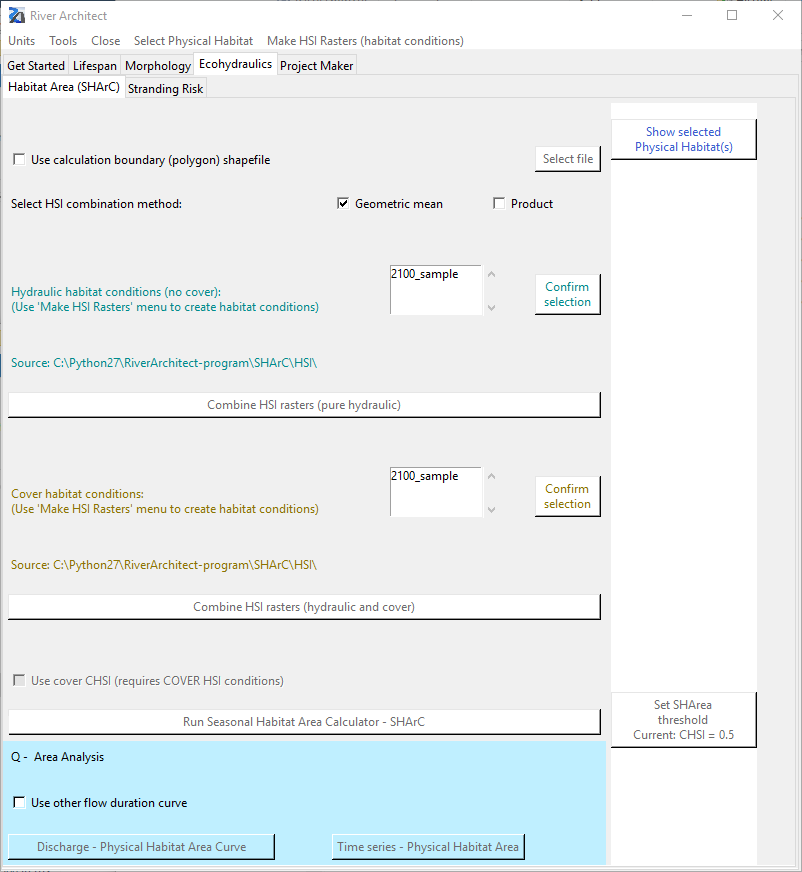


* 1. After the process has finished, you can check the dependency file by clicking “View discharge dependency file (xlsx workbook)” - this file is SHArC\SHArea\2100\_sample\_sharea\_chsp.xlsx

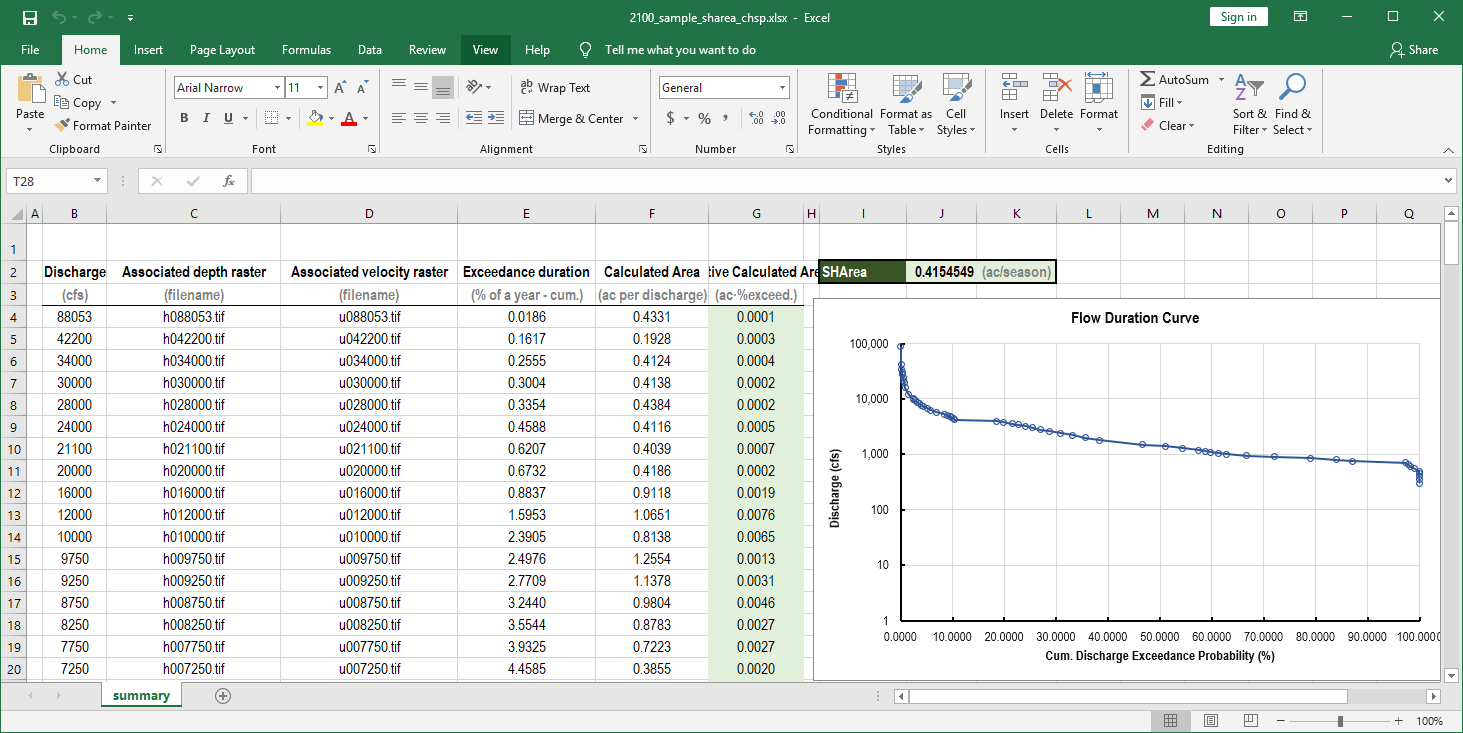


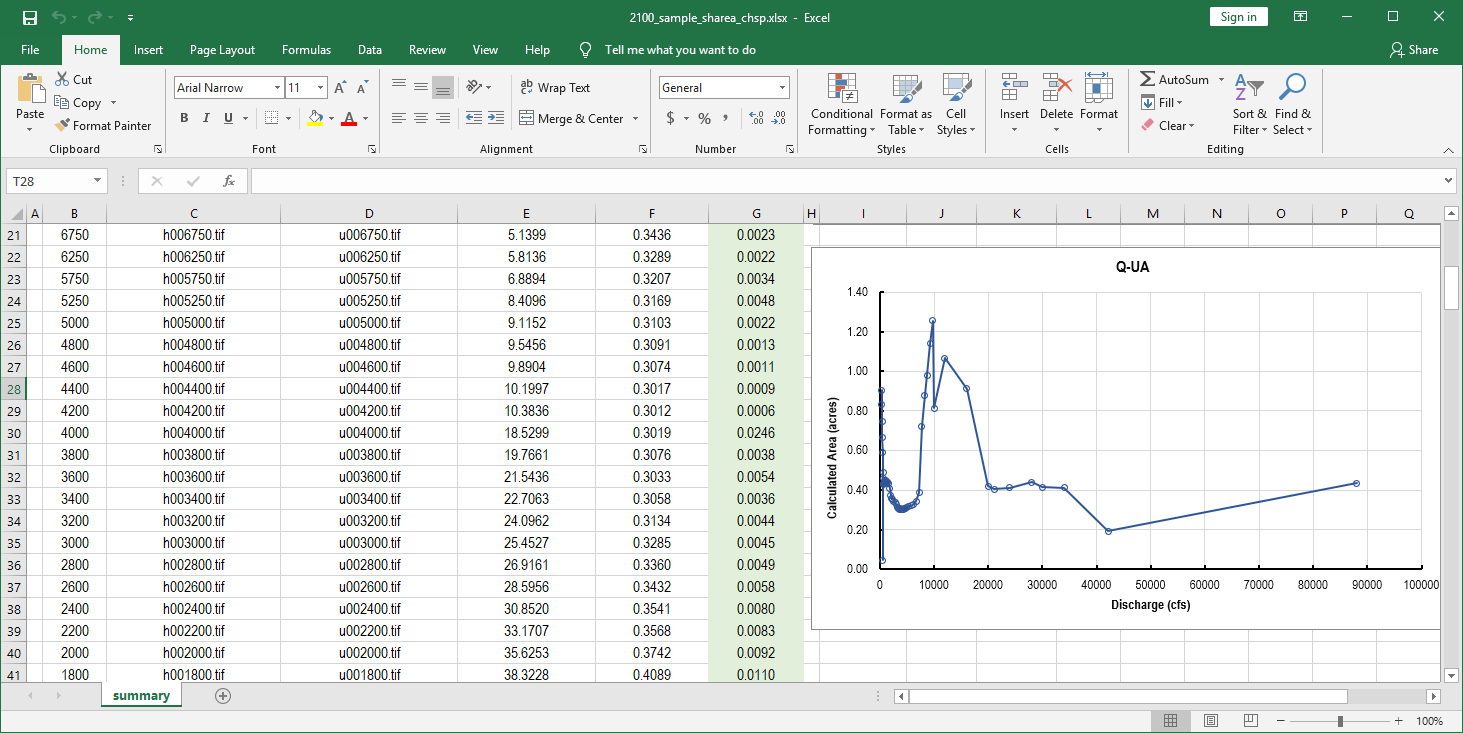


* 1. Click “Run (generate habitat condition)”
  2. Click “Return to Main Window”
  3. A new condition, “2100\_sample” for Hydraulic/Cover habitat conditions is generated.

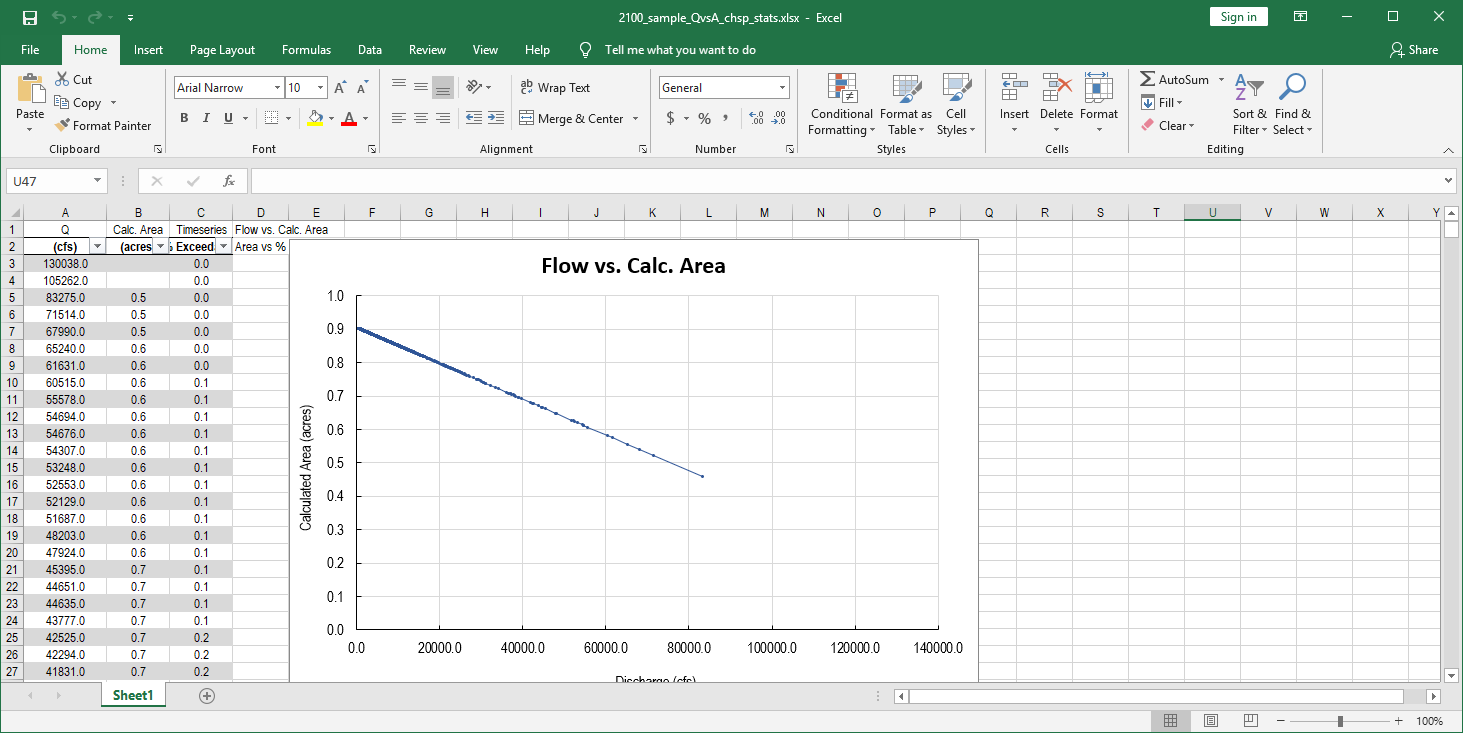


* 1. Select 2100\_sample condition for both hydraulic and cover habitat conditions and click “Confirm selection”
  2. Click “Combine HIS rasters (pure hydraulic)”
  3. Click “Run Seasonal Habitat Area Calculator – SHArC”
  4. Check the result file: SHArC\SHArea\2100\_sample\_sharea\_chsp.xlsx Now, the columns for “Calculated Area” and “Active Calculated Area” are filled.

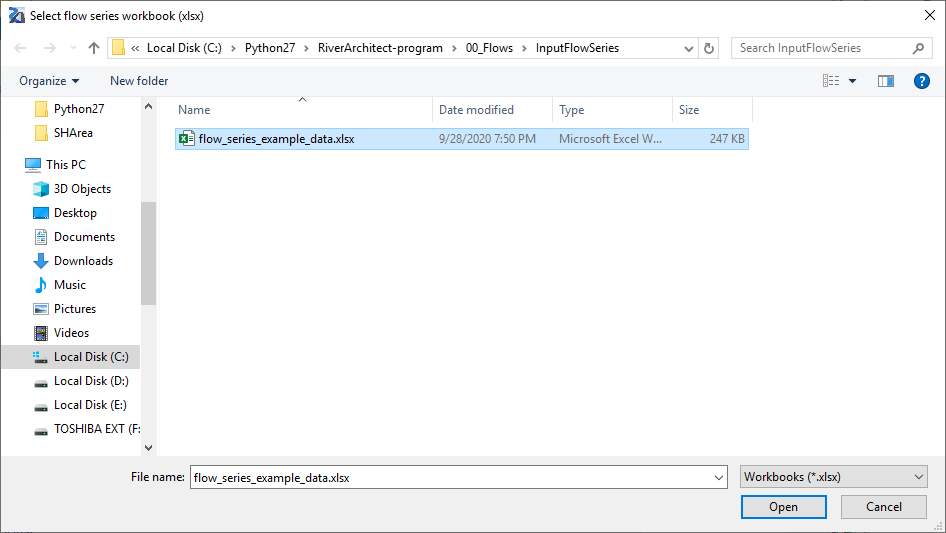




* 1. Click “Discharge – Physical Habitat Area Curve”
  2. Check the result file: SHArC\SHArea\ 2100\_sample\_QvsA\_chsp\_stats.xlsx

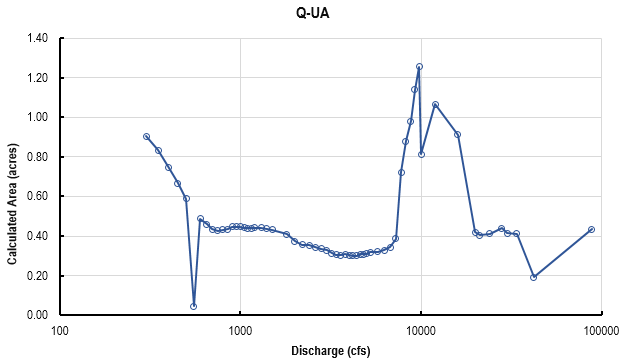


* 1. Click “”
  2. Select the flow series (e.g. InputFlowSeries: flow\_series\_example\_data.xlsx)

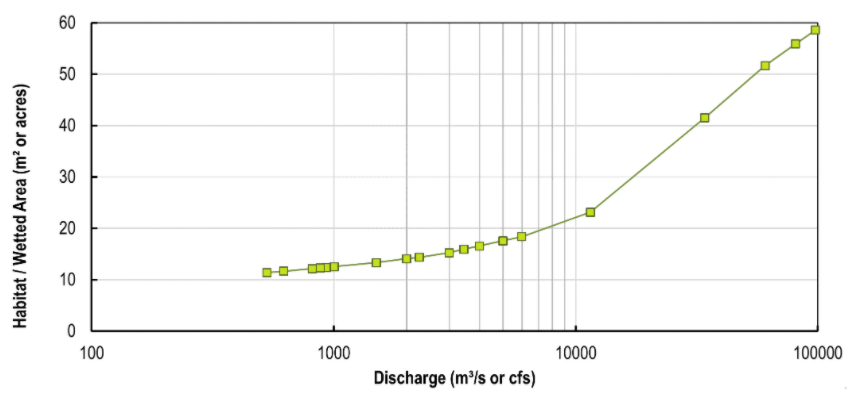


* 1. Check the result file: SHArC\SHArea\ 2100\_sample\_QvsA\_chsp\_time.xlsx

Result:



Expected:



**Something wrong with example raster files:**

u042200.tif (Velocity for Q = 42200 cfs)

Min/Max: 0/11.77

Mean/Std: 7.22/2.605

u088053.tif (Velocity raster for Q = 88053 cfs)

Min/Max: 0/5.5

Mean/Std: 0.67/1.3

h042200.tif (depth raster for Q = 42200 cfs)

Min/Max: 0/22.03

Mean/Std: 10.68/5.85

h088053.tif (depth raster for Q = 88053 cfs)

Min/Max: 0/6.83

Mean/Std: 0.86/1.6