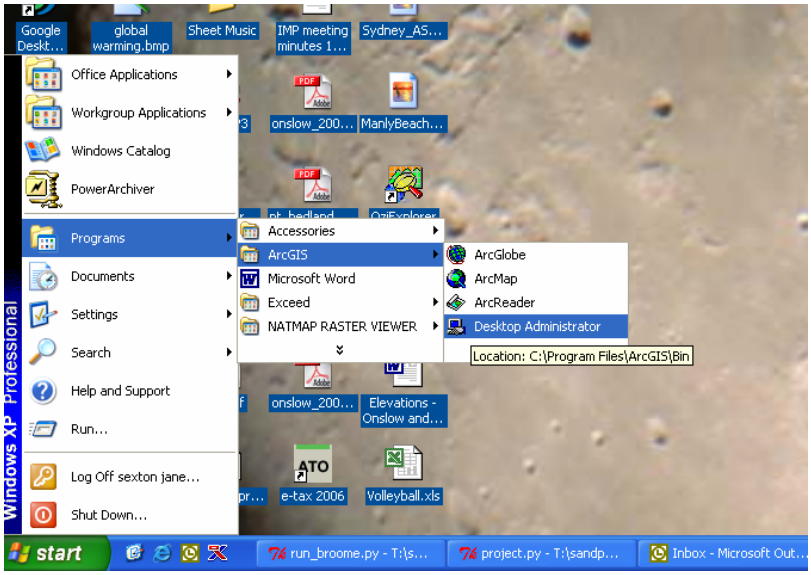
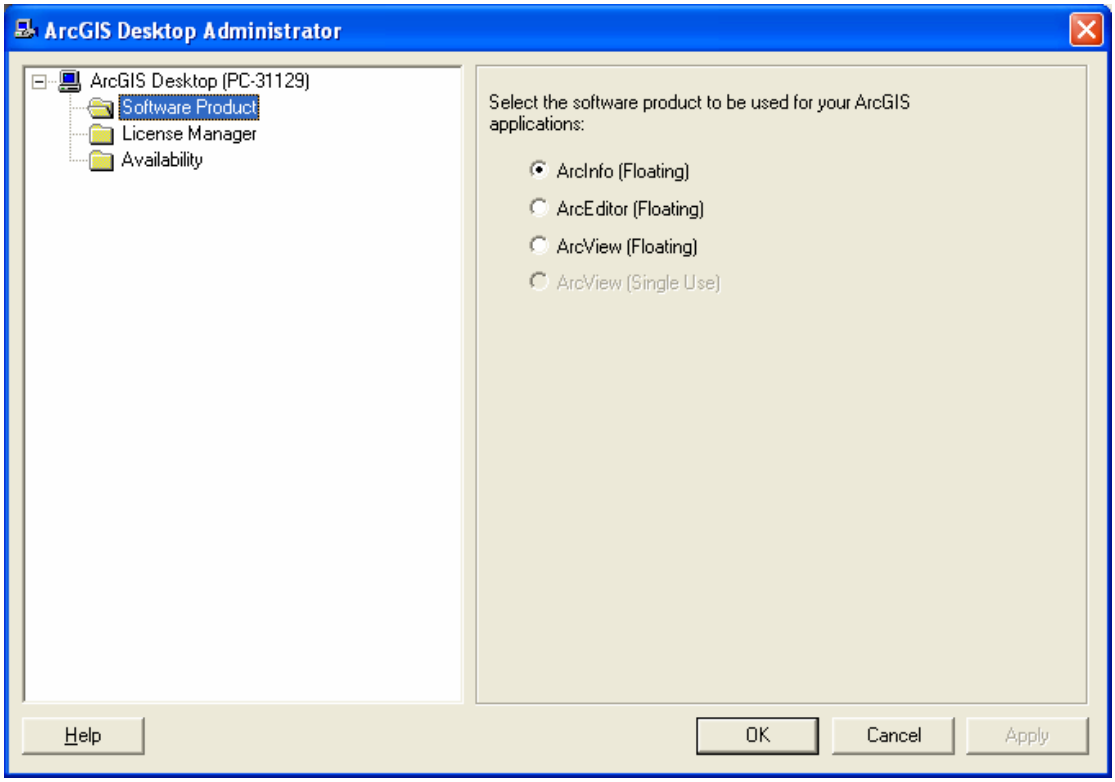
How to develop a polygon for scenario models using ArcGIS

- Change ArcGIS Licence to ArcInfo by going to Desktop administrator in the ArcGIS program list (see below)

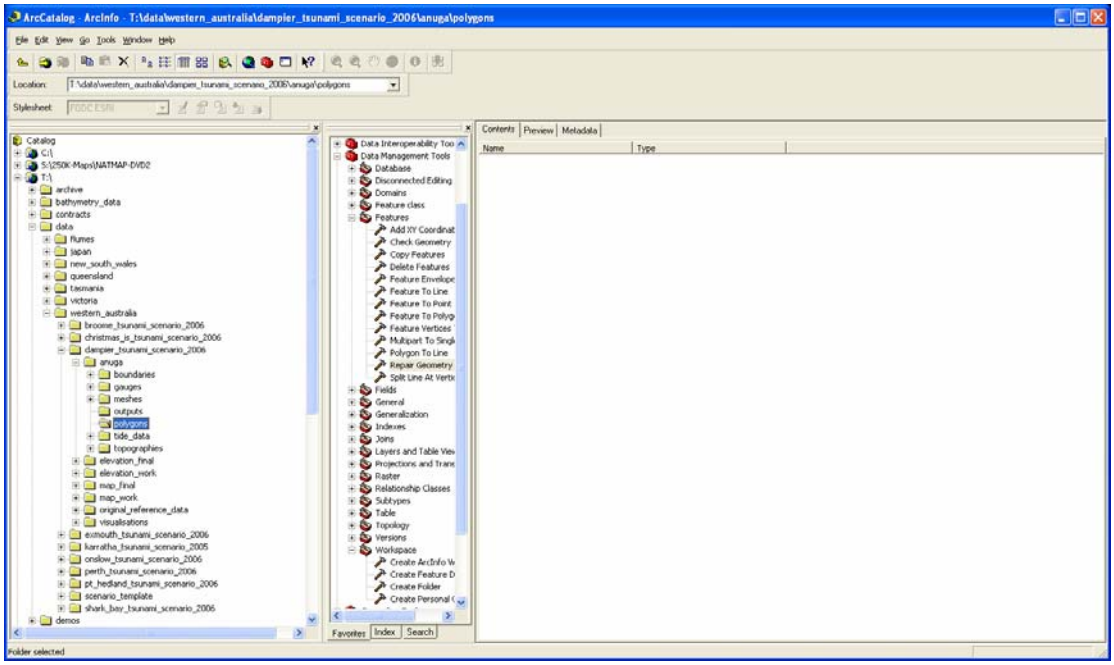


- Select ArcInfo as follows

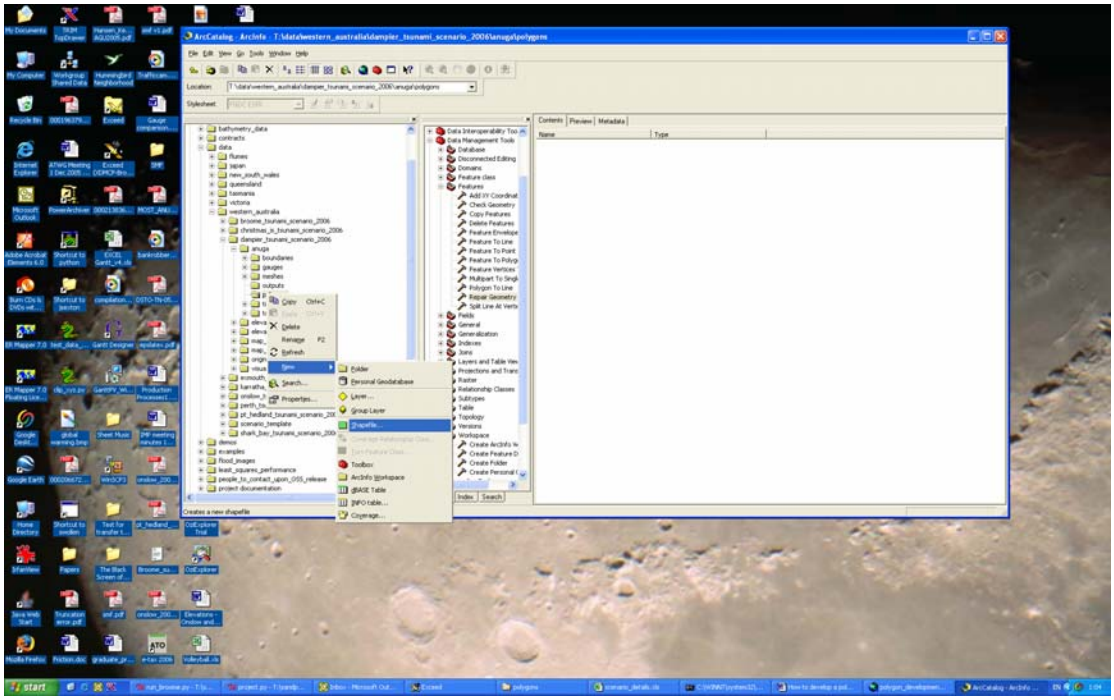


this will allow specific tools to be available.

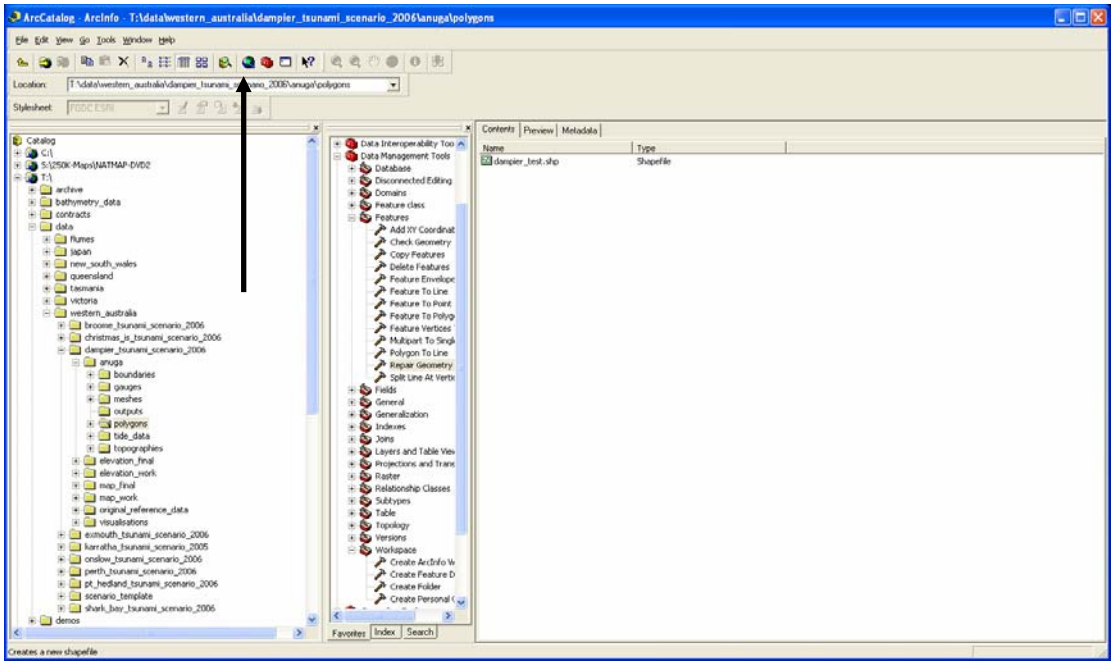
- Load ArcCatalog
- Go to directory where you want to work, eg



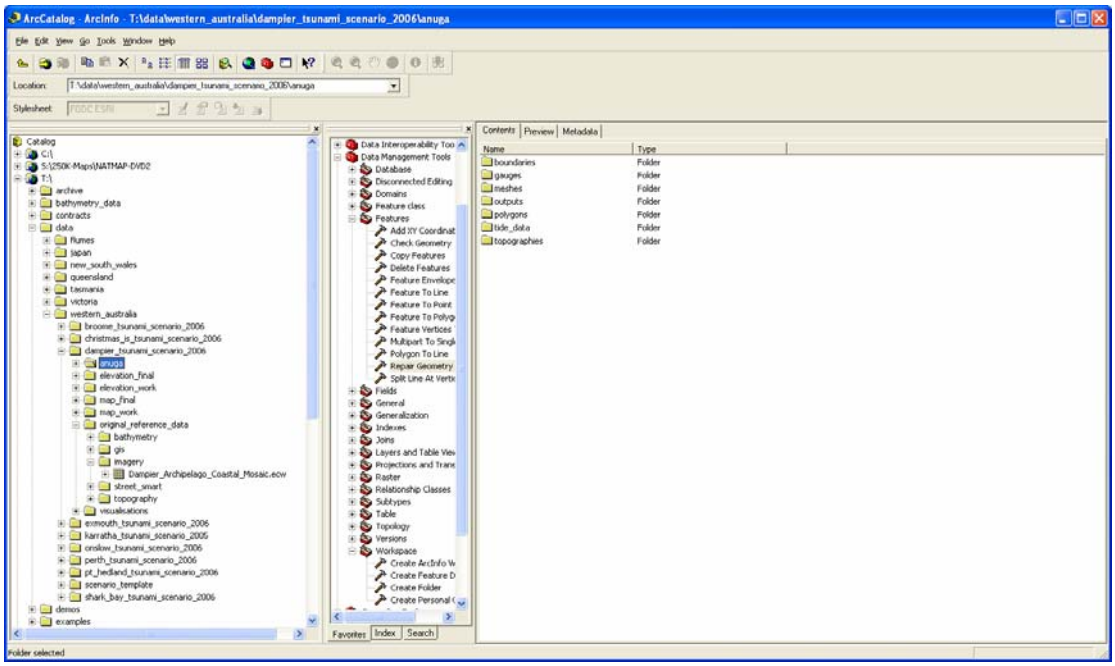
- Right click on directory name and select New Shapefile



- Provide a “Name”
- Select “Feature Type” to be “Polygon”
- DO NOT hit OK here, as we need to define a coordinate system. Select “Edit” and a “Spatial Reference Properties” box will appear.
- Choose “Select” which takes you to a “Browse for Coordinate System” box. Select “Projected Coordinate Systems”, then “National Grids”, then “Australia” and select GDA 1994 MGA Zone 50.prj (for Dampier). Choose appropriate zone location.
- Select Apply then OK. You now have an empty shapefile.
- Next, load ArcMap (see below) and hit OK.

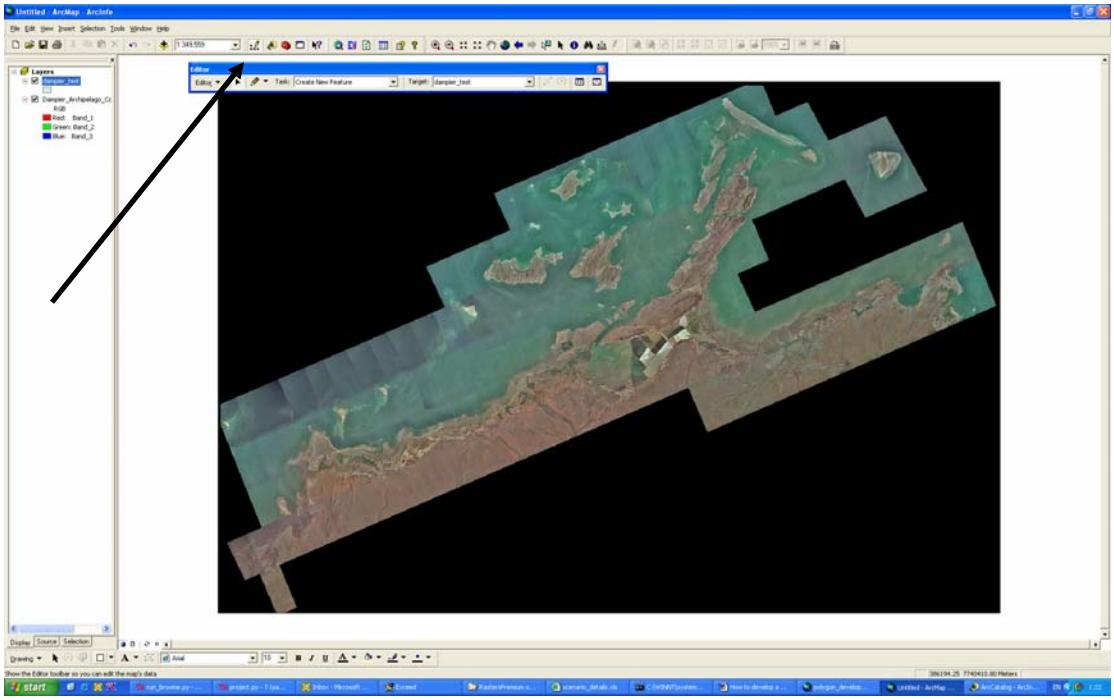


- Right click on the “Layers” and select Properties. On the “Coordinate System” dialogue box, select the “Predefined” box and select the coordinate system in the same way as above.
- Return to ArcCatalogue and drag your newly created shapefile to ArcMap.
- Return to ArcCatalogue and find relevant imagery. Using structure for tsunami scenarios, then imagery should be found in original_reference_data (see below)



- Drag image into ArcMap session.
- If image isn’t available, then you can find a 250K-Map from \\perlite\geo\2\archive\topo_thematic\raster\2005\premium\250K-Maps BUT it will have to re-projected and probably best if get Alex or Hamish to do this!

- Now to created your polygon:
    - Select Editor on the Toolbar



this brings up the Editor

- We want to Create New Feature from the dampier_test (the name given to our shapefile). If there are more shapefiles, they will be available in the Target drop down list.

- You can now start “drawing a polygon” by clicking on the pencil. Throughout drawing, you can zoom in and out, just select the pencil again to keep drawing.

- Double click when you’re happy. Go back to the Editor drop down list and select “Save Edits” then “Stop Editing”

- Right click on the dampier_test in the left hand bar and select “Properties” to change the colour and transparency, etc.

- Now you have a polygon shapefile!!!

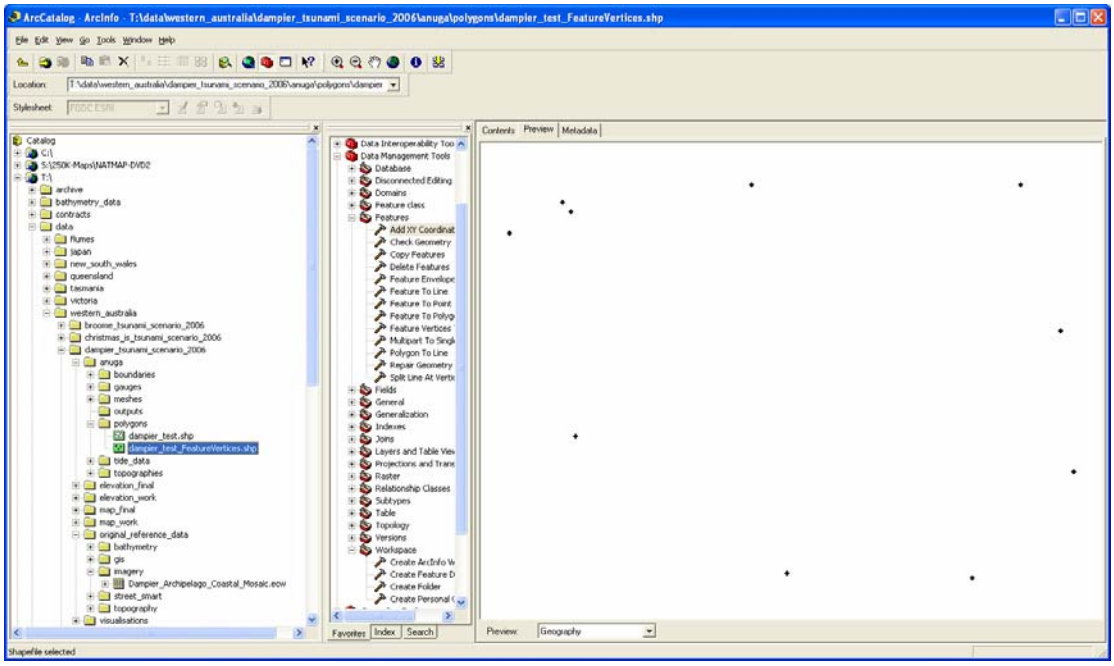
- Next, return to ArcCatalogue to where your shapefile resides.

- Click on the red toolbox in the toolbar. Go to “Data Management Tools”, then “Features” and double click on “Feature Vertices to Points”.

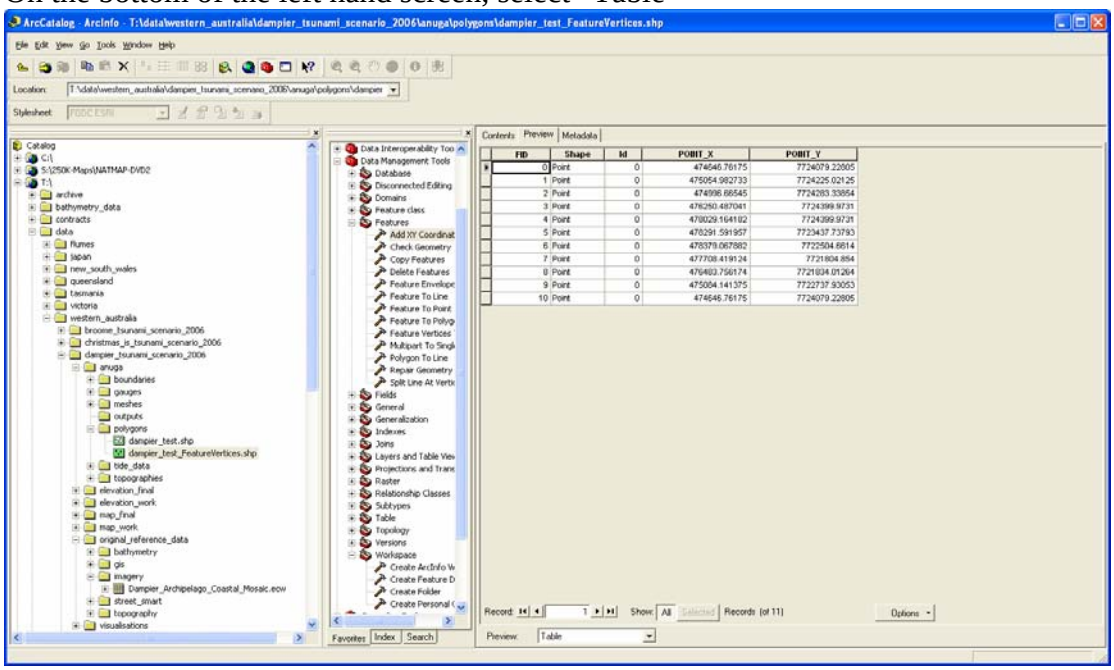
- Drag your shapefile into the “Input Features” and hit OK. You will see the creation of another shapefile in the same directory (it will be called NAME_FeatureVertices.shp)

- Return to the toolbox and double click on “Add XY Coordinates” and drag the second shapefile into the “Input Features”.

- Click on the second shapefile (NAME_FeatureVertices.shp) and select the Preview tab (see below)

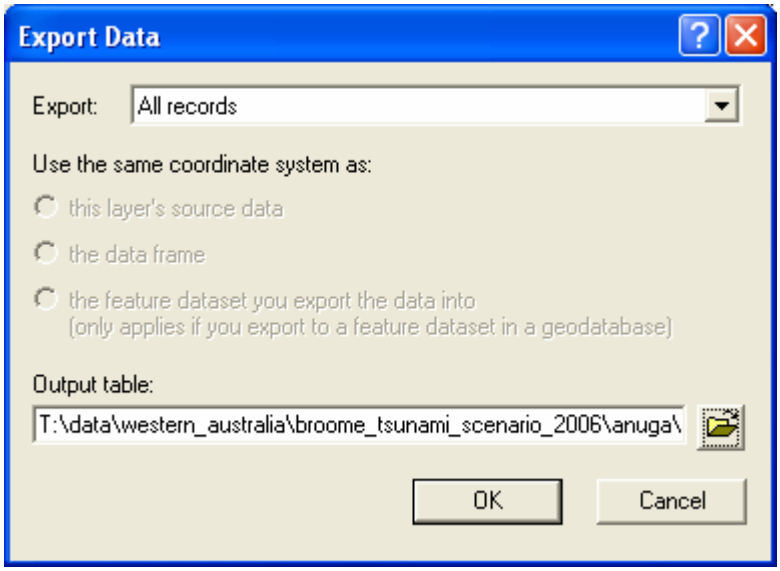


On the bottom of the left hand screen, select “Table”

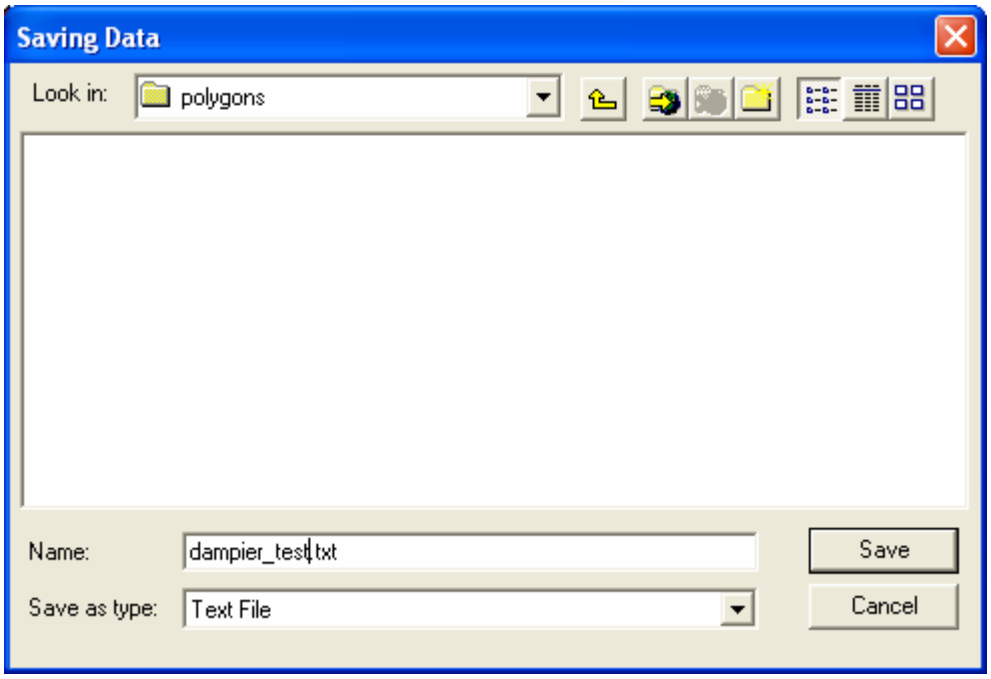


Next, select “Options” then “Export”.

Save to a text file by selecting the folder option



and saving into the polygon directory in the scenario you're running as a text file.



Next, load into Excel and save as an .csv (after deleting the first two columns and first row).

One thing to remember is that these polygons are defined as closed in ArcGIS, so remove the last line so there are no duplicate points.

Welah!

P.S. Return the ArcGIS Licence to ArcView (ArcInfo is the top notch one).