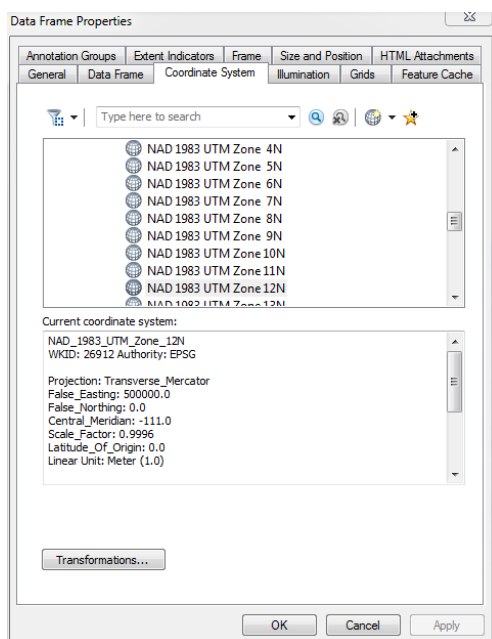


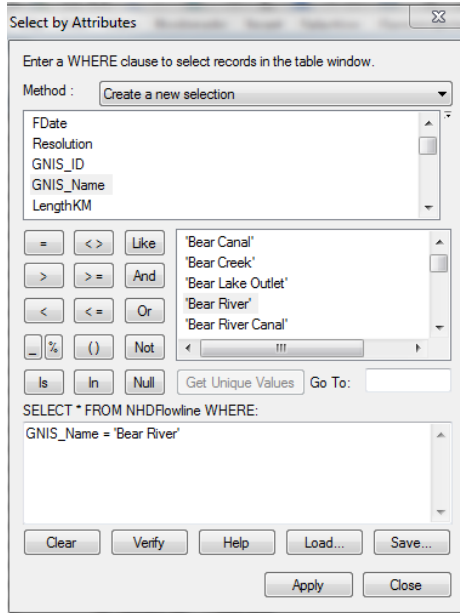
Create a river miles layer from NHD HR:

A common question I am asked in regards to hydro data is how to calculate river miles, so this is a way to do that:

1. Since USGS distributes NHD in Geographic Coordinates, NAD 83, you'll have to give your data a projection if you want to measure with it. I like UTM but you can use whatever projection your state uses. So following my lead, you'll want to set your map coordinate system to UTM Zone 12, NAD 83 so you can measure in meters (the demo is for a place in Idaho). I just do this in the map frame's coordinate box but you could reproject all of your data...



2. Next, set up your NHD data.
 - a. Open the attribute table of the NHDFlowline layer.
 - b. Open the Table Options menu and choose Select by Attributes.
 - c. Create a query to search for all reaches identified as the Bear River: "GNIS_Name" = 'Bear River'



d. In the attribute table, you should see 39087 features selected.

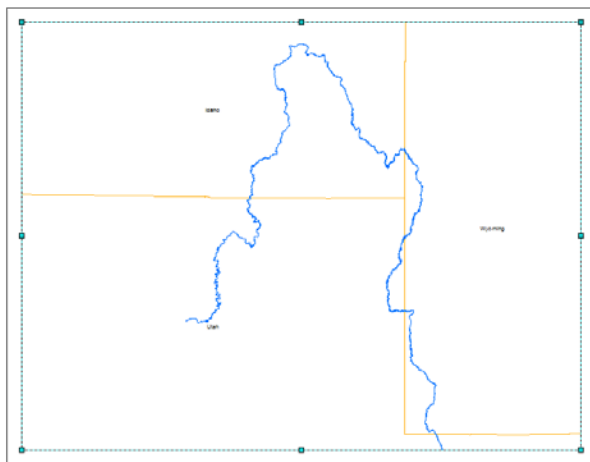
3. Right-click on the NHDFlowline layer and select Export Data.

a. Navigate to the GDB and save the selected features as a new feature class called BearRiver.

b. Add the exported data to the map as a layer.

4. Clear selected features and close the attribute table

5. Zoom to the extent of the BearRiver and turn off all other features.



6. Let's dissolve the 39087 segments to create a single flowline.

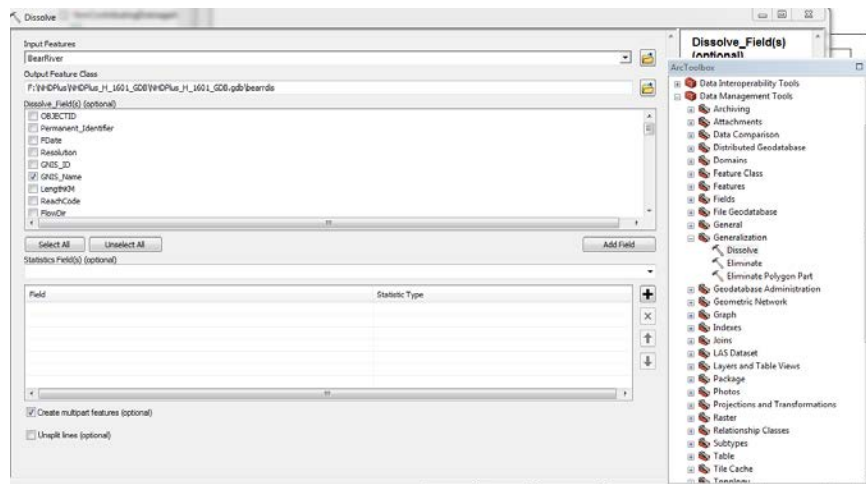
a. From the toolbox, we will use the Dissolve tool, which is found under Data Management Tools-Generalization.

b. Select the BearRiver layer for Input Features.

c. Navigate to the NHDPlus_H_1601_GDB. and name the new feature class BearRivDis.

d. Check the box next to GNIS_Name under the Dissolve_Field(s) field.

e. Click OK to run the tool.



7. Right-click the NHDPlus_H_1601_GDB in ArcCatalog and select New>Feature Class.

a. Create a *point feature* class called BearRivMiles.

b. Select Geographic Coordinate System:GCS_North_American_1983, Datum: D_North_American_1983, Prime Meridian: Greenwich, Angular Unit: Degree

c. Click through the rest of the dialog and click Finish. Right click on your geodatabase and do a refresh.

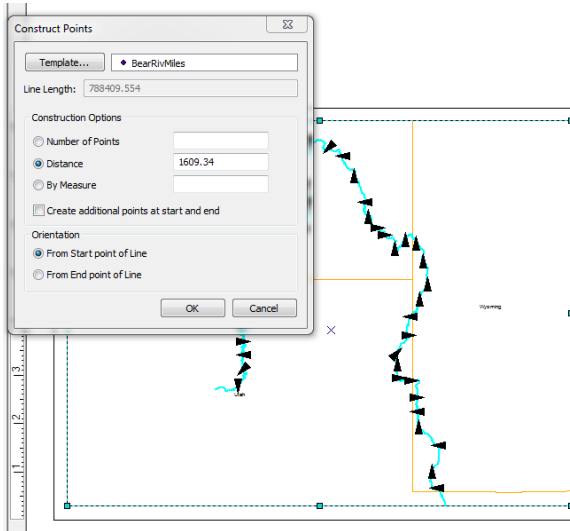
8. Right-click BearRivDissolve and select Edit Features>Start Editing.

9. Right-click BearRivDissolve and choose Selection>Select All.

10. From the Editor dropdown menu, select Construct Points.

11. In the Construct Points dialog, confirm that BearRivMiles is the Template.

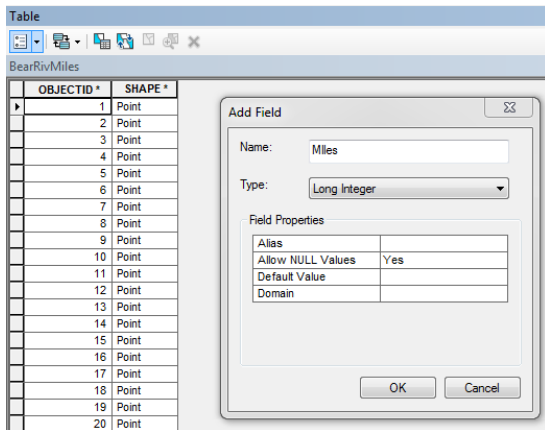
- a. Under Construction Options, choose Distance.
- b. Enter 1609.34 (this is how many meters are in a mile). The data frame is in meters.
- c. Check the box next to Create additional points at start and end.



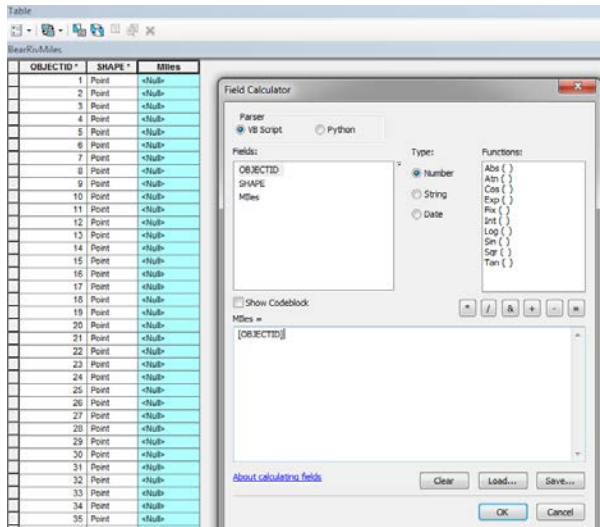
32

- d. Click OK.
- e. Save edits. Stop editing.

12. If you zoom into the BearRivDissolve layer, you can see that there are points every mile along the Bear River. If you wanted to be able to identify which mile is which, you can add a field to the BearRivMiles layer called Miles , Type Long Integer.



- a. Use Field Calculator to populate Miles with the contents of OBJECTID.



- b. You can then label each point with its river mile number.
I think you get about 490 miles.

Alternatively, you could look at the attribute table for flowlines and find the LengthKM column, this represents length in kilometers. If you want miles you have to divide length in KM by 1.609344 to get river miles. Add a new column and call it RMiles or something like that. Go into an edit session on this layer, then use the field calculator to make this string “LengthKM/1.609344” and it will give you miles in that column. Then select by attributes, for Bear River, save the selection as a separate file, then do the same thing.