CAMP
River Atlas Task Group
Meeting
18/02

Agenda:

- Update on River Atlas work
- Queries and Discussions

Takeaway Points

- All centers are requested to share a sample of the merged and verified network, including statistics and georeferenced toposheets of the selected area for cross checking.
- Zoom in to a 1:5000 resolution to identify any changes in the path between Google Earth and the NRSC network. And make necessary corrections if any deviations are observed.
- Streams starting from agricultural fields and less than 1 km **NEED NOT be** considered. (after merging of streams)
- Streams/drain originating from urban or village settlements and is visible or partially visible in google earth timeline, those streams **should be** considered irrespective of the length of the stream.

Methodology for stream network preparation

After obtaining the stream network, follow these steps to generate a verified stream network:

1. Download the SoI toposheet of the basin.
2. Georeference the SoI toposheet on the OSM sheet, By marking the 4 control points.
3. Assign a Projected Coordinate system to the stream network based upon the area.
4. Export the Unnamed(0) row from the network file, called it as Unnamed_Network files & now delete these Unnamed(0) rows from the main network. So that we have 2 files called it as Named & Unnamed network.
5. Firstly, verify the named network using SoI toposheets and Google Earth (use timeline feature). After verification, merge the streams/segments with same name to obtain the complete length of the particular stream.
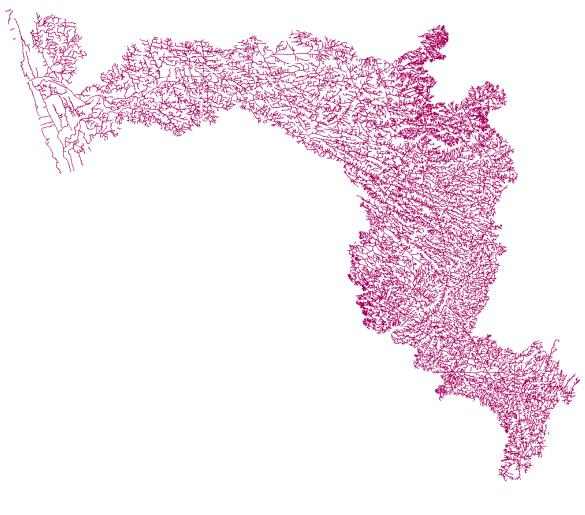
Methodology for stream network preparation

6. Then, open the Unnamed network file and verify using SoI toposheets and Google Earth (use timeline feature).
7. While verifying, if the name of any particular unnamed stream is available on SoI toposheet, kindly update the name and export the stream to the named network.
8. After verification of unnamed network, merge the segmented parts of a stream to a single stream.
9. If new streams are found on SoI toposheets, verify using Google Earth. After verification, trace the same using ArcGIS.
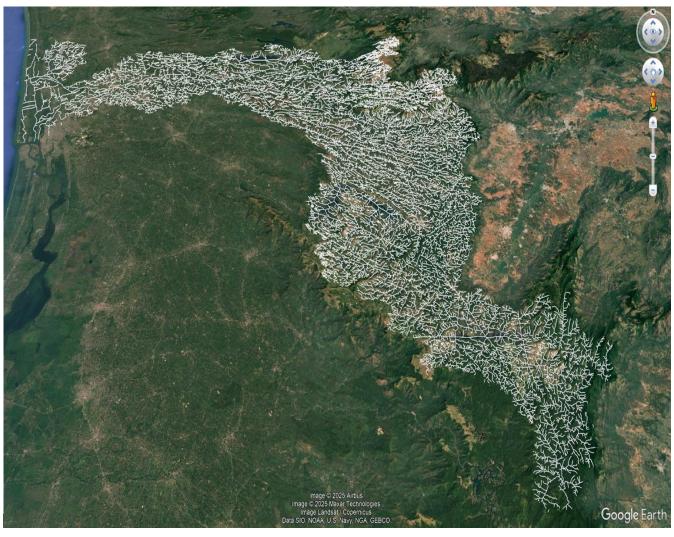10. Stream verification using ArcGIS BASEMAP is **NOT** approved.

Some points to consider while verification of network

1. Streams **less than 1.0 km** originating from agricultural land **need not be considered**.
2. If the stream is coming from hilly/mountains/jungle area, and is **visible or partially visible** in google earth timeline, those streams **should be considered** irrespective of the length of the stream.
3. If the stream/drain is originating from urban or village settlements and **is visible or partially visible** in google earth timeline, those streams **should be considered** irrespective of the length of the stream.
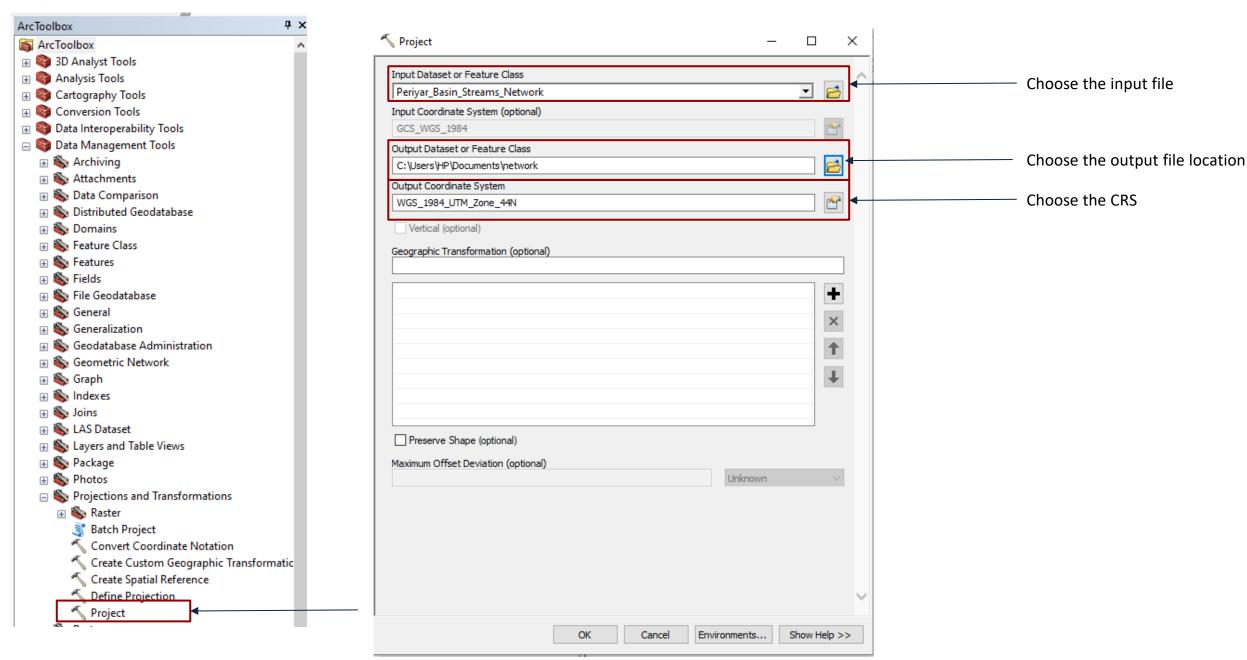
Entire Stream Network

ArcGIS

Google Earth

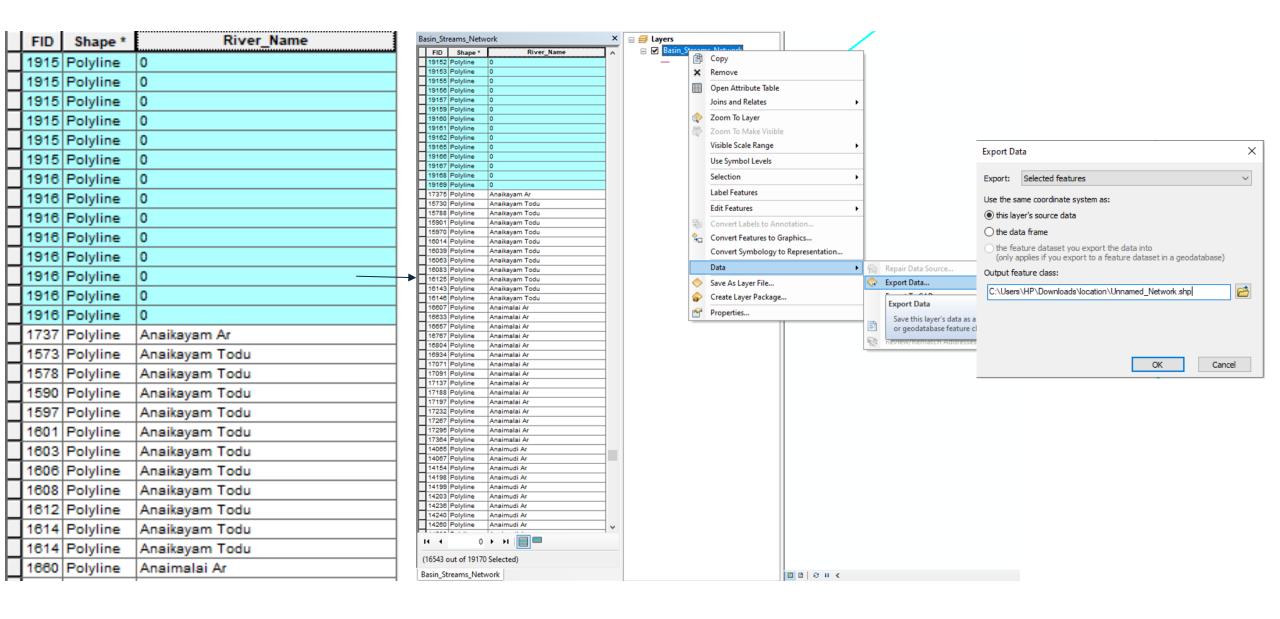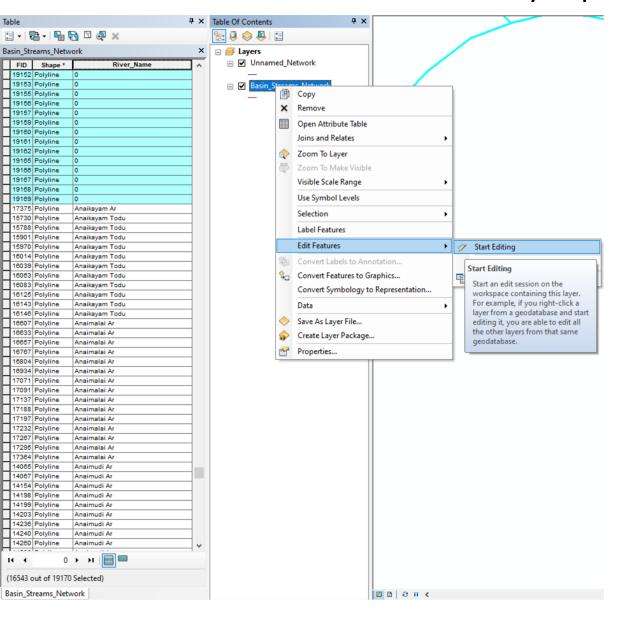# Assign a Projected Coordinate system to the stream network

Attribute Table

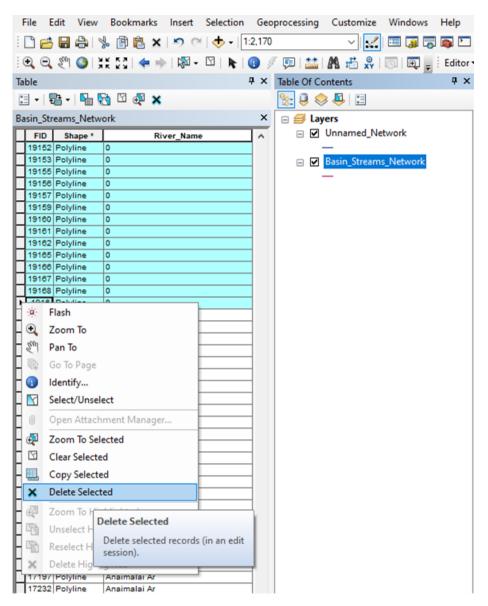Click on the sort Ascending so that Name & Unnamed rows sorted.

FID	Shape *	River_Name
1673	Polyline	0
1674	Polyline	0
1675	Polyline	0
1676	Polyline	0
1677	Polyline	0
1678	Polyline	0
1679	Polyline	0
1680	Polyline	0
1681	Polyline	Kolikanam Oda
1682	Polyline	0
1683	Polyline	0
1684	Polyline	Mulla Ar
1685	Polyline	0
1686	Polyline	0
1687	Polyline	0
1688	Polyline	0
1689	Polyline	0
1690	Polyline	0
1691	Polyline	0
1692	Polyline	0
1693	Polyline	0
1694	Polyline	0
1695	Polyline	Aruvi Oda
1696	Polyline	0
1697	Polyline	0
1698	Polyline	0
1699	Polyline	Mulla Ar

FID	Shape *	River_Name	
0	Polyline		Sort Ascending
1	Polyline		Sort Descending
2	Polyline		
3	Polyline		Advanced Sorting...
4	Polyline		
5	Polyline		Summarize...
6	Polyline		Σ Statistics...
7	Polyline		
8	Polyline		Field Calculator...
9	Polyline		
10	Polyline		Calculate Geometry...
11	Polyline		
12	Polyline		Turn Field Off
13	Polyline		
14	Polyline		Freeze/Unfreeze Column
15	Polyline		
16	Polyline		✕ Delete Field
17	Polyline		
18	Polyline		Properties...
19	Polyline		
20	Polyline		
21	Polyline		
22	Polyline		
23	Polyline		
24	Polyline		
25	Polyline		
26	Polyline		
27	Polyline		
28	Polyline		
29	Polyline		

FID	Shape *	River_Name
1915	Polyline	0
1915	Polyline	0
1915	Polyline	0
1915	Polyline	0
1915	Polyline	0
1915	Polyline	0
1916	Polyline	0
1916	Polyline	0
1916	Polyline	0
1916	Polyline	0
1916	Polyline	0
1916	Polyline	0
1916	Polyline	0
1737	Polyline	Anaikayam Ar
1573	Polyline	Anaikayam Todu
1578	Polyline	Anaikayam Todu
1590	Polyline	Anaikayam Todu
1597	Polyline	Anaikayam Todu
1601	Polyline	Anaikayam Todu
1603	Polyline	Anaikayam Todu
1606	Polyline	Anaikayam Todu
1608	Polyline	Anaikayam Todu
1612	Polyline	Anaikayam Todu
1614	Polyline	Anaikayam Todu
1614	Polyline	Anaikayam Todu
1660	Polyline	Anaimalai Ar
1663	Polyline	Anaimalai Ar
1665	Polyline	Anaimalai Ar
1676	Polyline	Anaimalai Ar
1680	Polyline	Anaimalai Ar
1693	Polyline	Anaimalai Ar
1707	Polyline	Anaimalai Ar
1709	Polyline	Anaimalai Ar
1713	Polyline	Anaimalai Ar
1718	Polyline	Anaimalai Ar

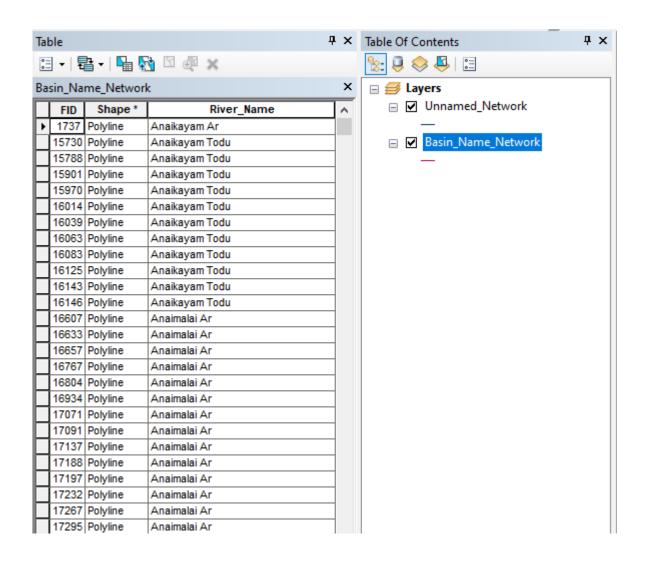# Click on the layer to export the Unnamed rows to create a new file.

Click on the layer to edit the features and "Delete Selected" i.e. Unnamed rows so that only Name network rows left. As we already exported the Unnamed network rows. Save edits.
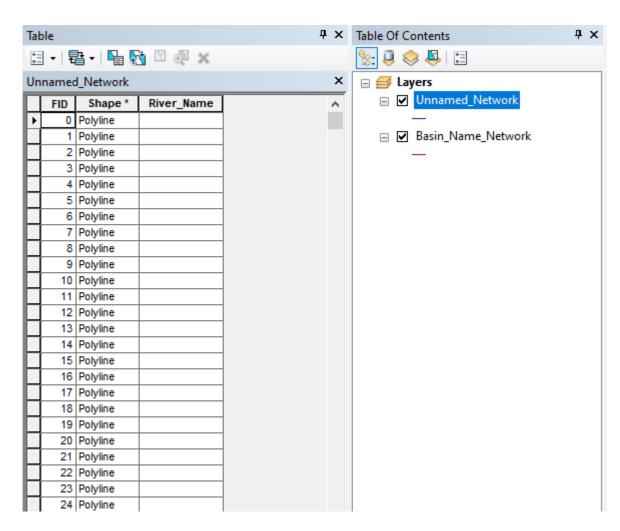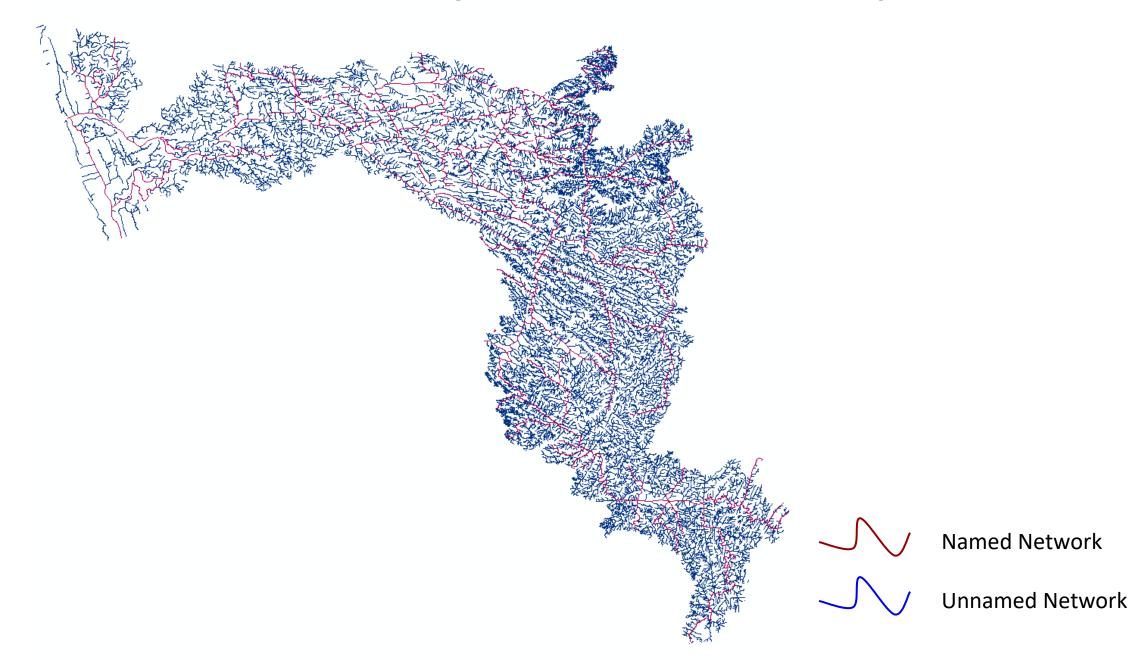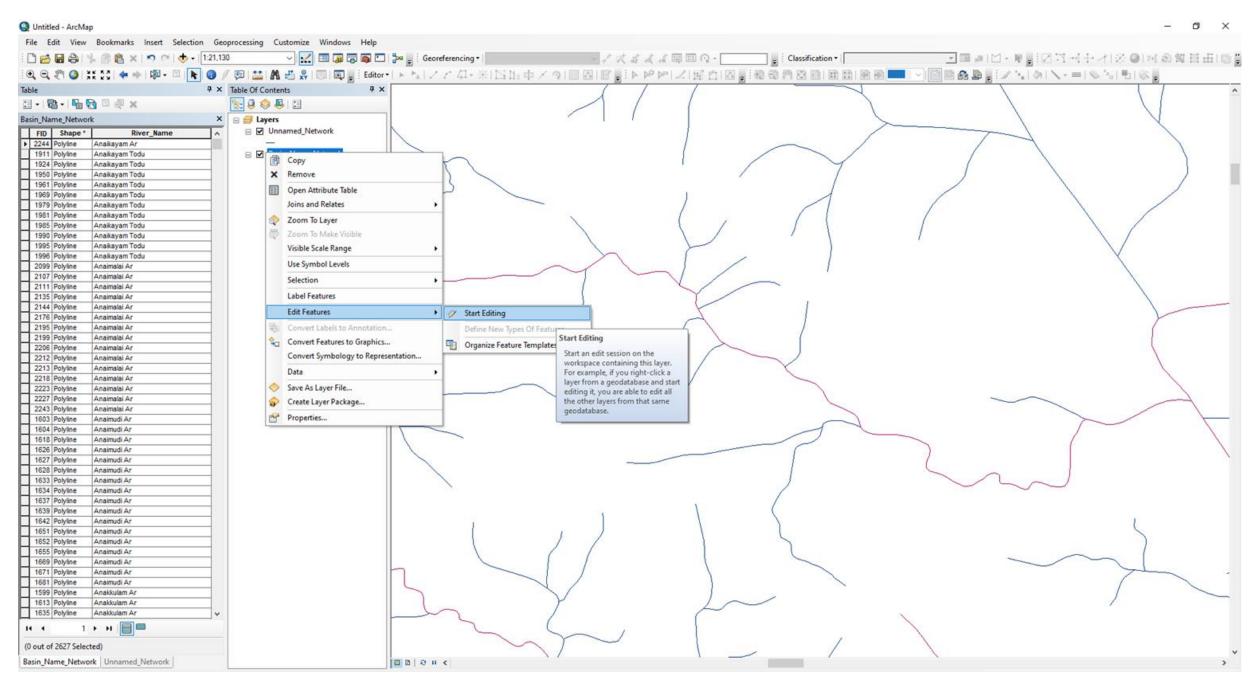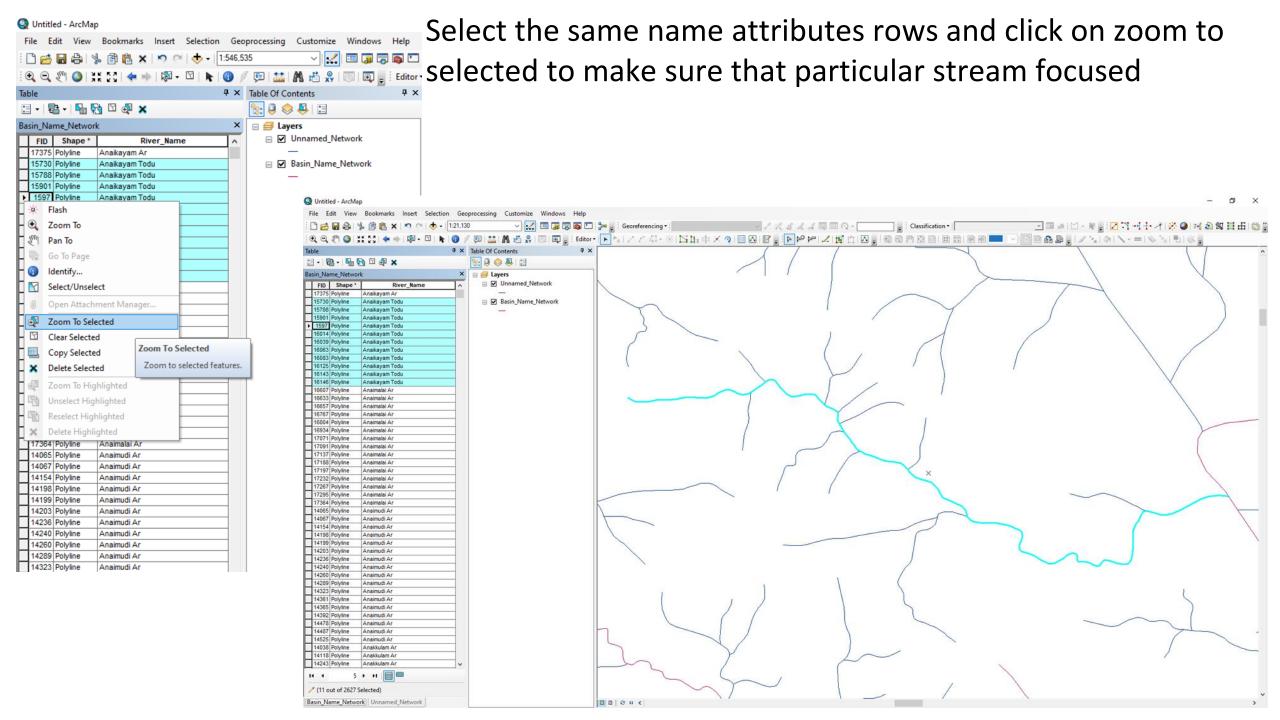
Name Network file

Unnamed Network file

Entire Stream Network (Named & Unnamed)

Named Network

Unnamed Network

Now start edit features.

Select the same name attributes rows and click on zoom to selected to make sure that particular stream focused
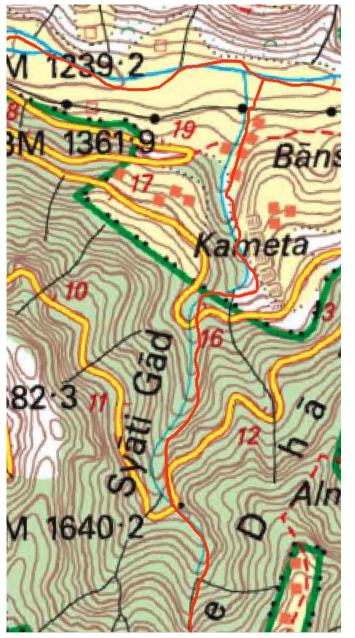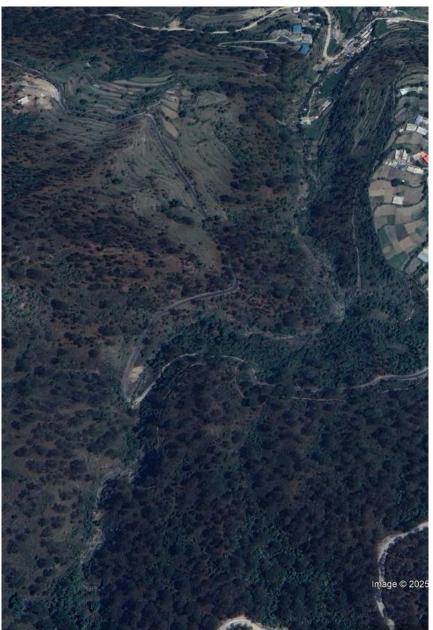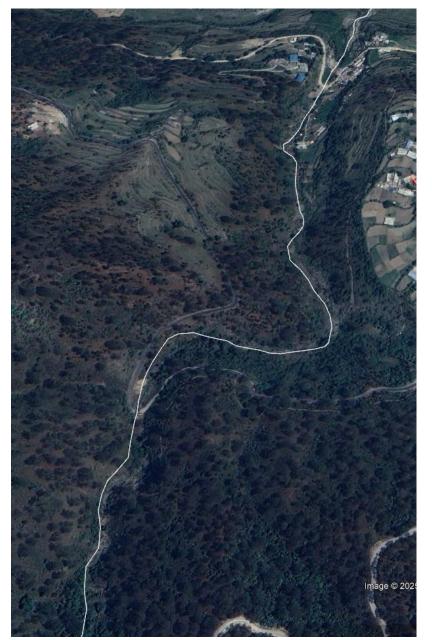
Verified on SoI & Google Earth
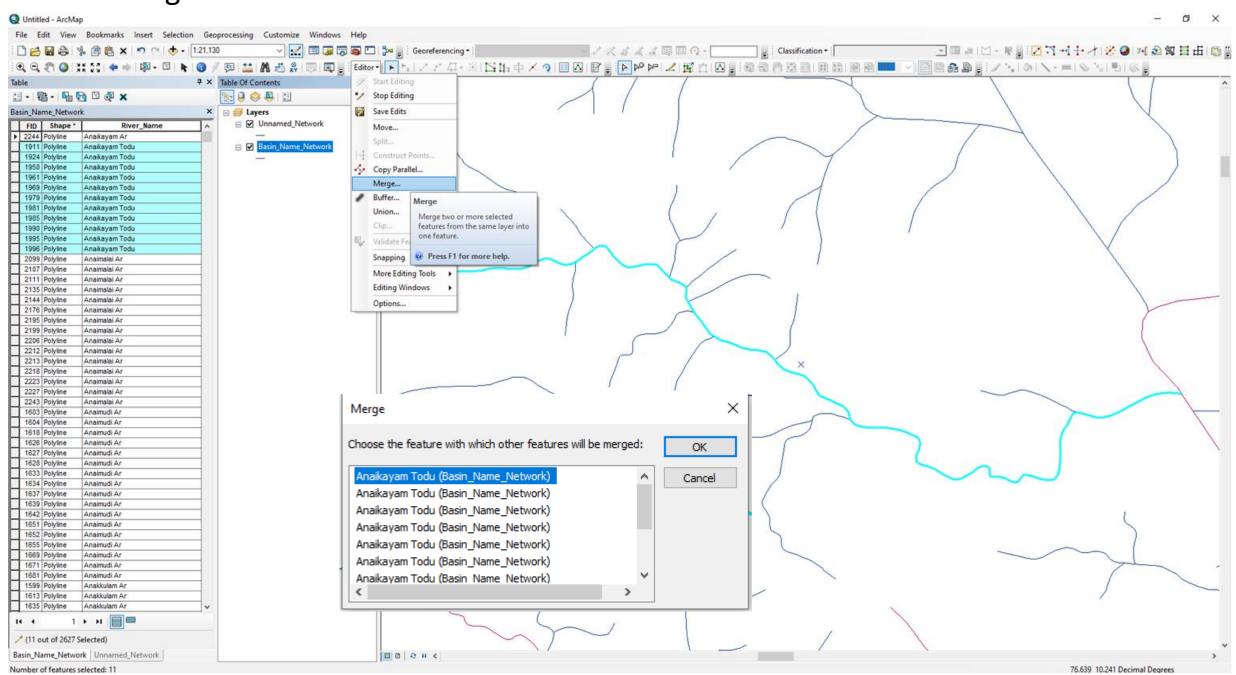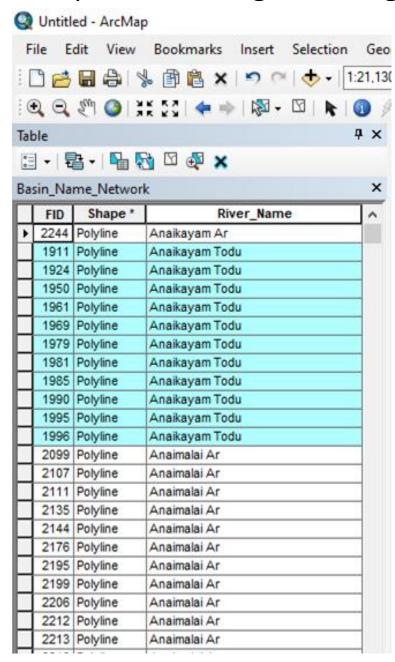
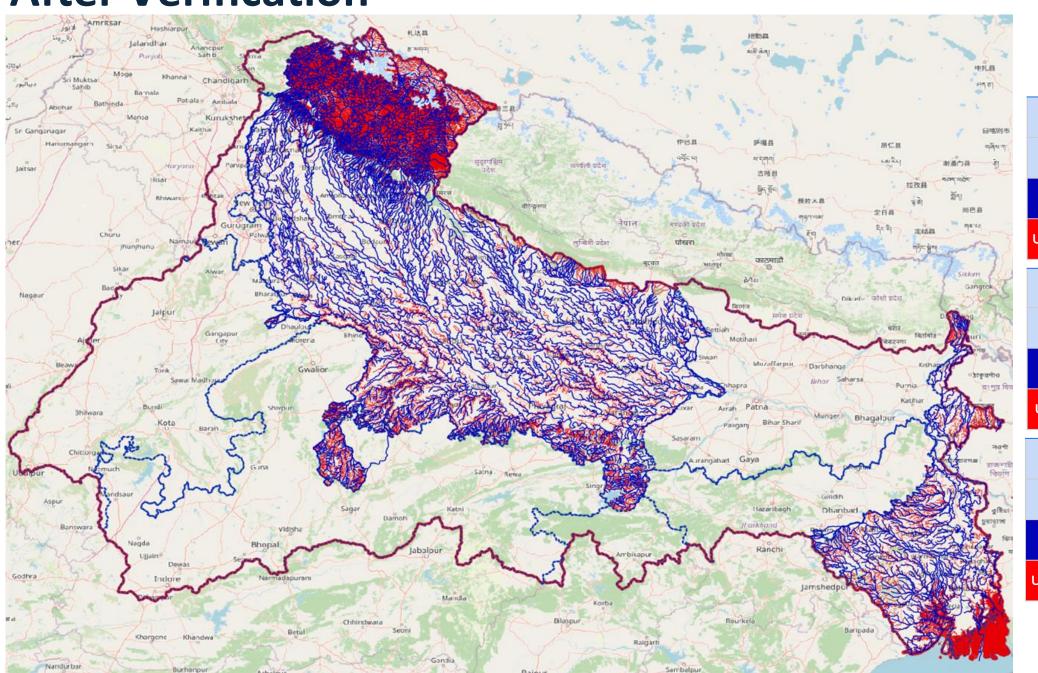Note: The image shown is belongs to Uttarakhand

Click on merge

Multiple rows merged to single river row

After Verification

Uttarakhand		
	No.	Length(km)
Named Rivers	2,181	19,721
Unnamed Rivers	31,167	51,468

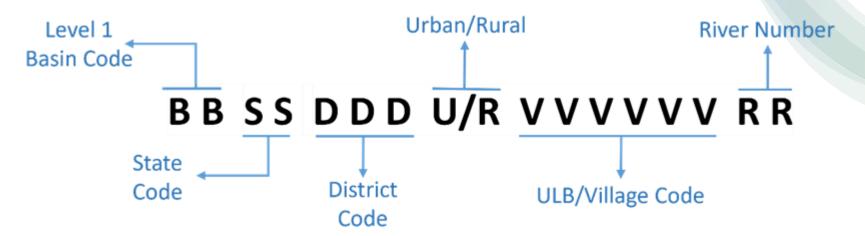| Uttar Pradesh		
	No.	Length(km)
Named Rivers	2,451	61,936
Unnamed Rivers	7,281	27,503

West Bengal		
	No.	Length(km)
Named Rivers	493	15,303
Unnamed Rivers	57,479	24,575

River Codification System

- Alphanumeric characters are used for coding the river systems.
- A combination of natural and administrative boundaries is used to assign a code to each river and stream.
- River codes are assigned **based on the origin** of the river/stream and each sub-step in the code is assigned a digit or alphabet and the total length of the code is **16 digits.**
- For the rivers originating outside the national boundary of India, the point where the river enters the national boundary is considered as its origin point.
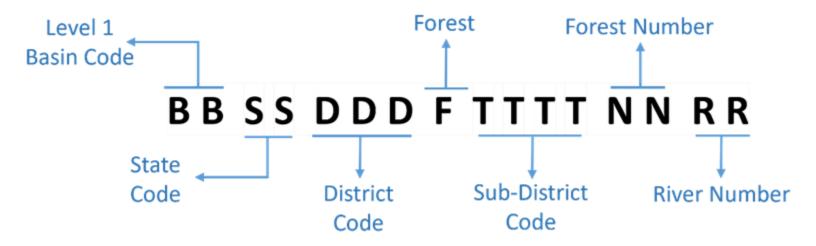
River Codification System

a) River originates in Urban/Rural Area:

The first two digits denote the code for the major basin, based on the system proposed by the Central Water Commission (CWC), Government of India. Following this, the two alphabets "SS" indicate the state where the river originates, such as "UK" for Uttarakhand. The following three digits "DDD" represent the district where the river originates. The next character, 'U' or 'R,' indicates whether the origin is in an urban or rural area. The subsequent six digits are the Urban Local Body (ULB) code if the river originates in an urban area or the village code if it originates in a rural area. The district and ULB/village code correspond to the origin of the river, and are available from Local Government Directory, GoI (LGD) website. The final digit indicates the number of the specific river that originates within the specific location falling within an administrative boundary such as town/city or a village.

River Codification System

b) **River originates in Forest Area:**

The first two digits denote the code for the major basin, based on the system proposed by the Central Water Commission (CWC), Government of India. Following this, the two alphabets "SS" indicate the state where the river originates, such as "UK" for Uttarakhand. The following three digits "DDD" indicate the district where the river originates. The next character, 'F', signifies that the river originates in a forest area. The subsequent four digits denote the sub-district code where the forest is located. The following two digits indicate the number of the specified forest in the sub-district. The district, sub-district, and forest codes correspond to the river's origin, with district and sub-district codes available from the Local Government Directory (LGD) website, GoI. The final digit indicates the number of the river that originates within the specific forest cover or range.