# Hydrological Analysis using ArcGIS Pro

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## Topic

## **Simple Hydrology Workflow**

Hydrology Toolset: Overview of the hydrology toolset and concepts and tools.

Practical Demo: Hydrological analysis sample applications.

Using Automation: Using Model Builder to make the analysis automated and ready to use.

**The Concepts** 



Digital Elevation Model

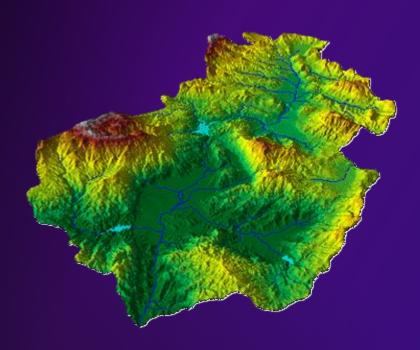


**Drainage Systems** 



Hydrology Tools

## **Digital Elevation Model**

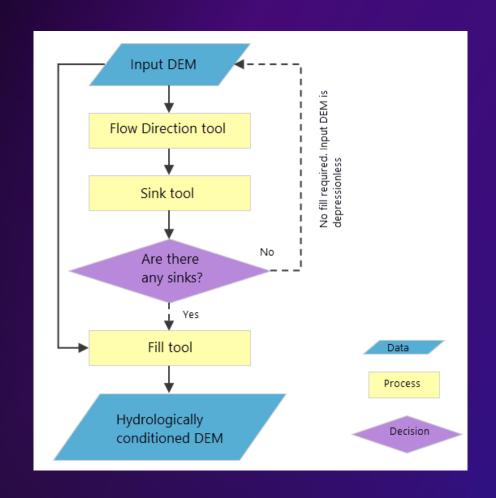


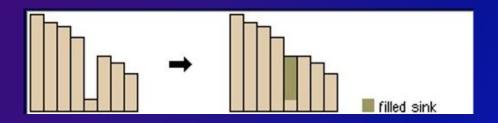
### Alaska Satellite Facility



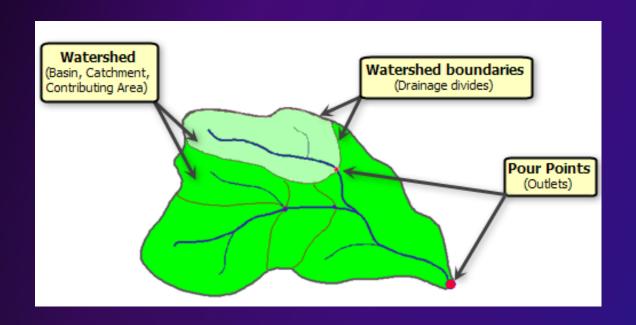
https://asf.alaska.edu

## **DEM Vs Hydrologically Conditioned DEM**



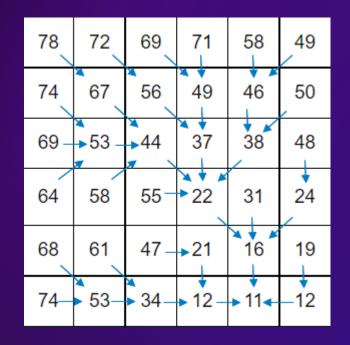


## **Understanding drainage systems**

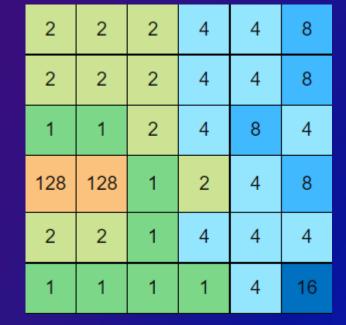


- Streams
- Pour Points
- Watershed

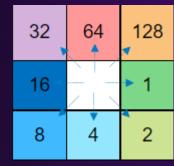
#### **Flow Direction**



**Elevation** 

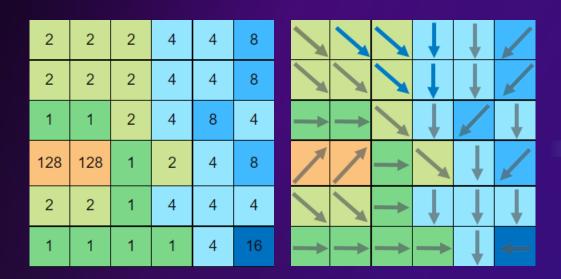


**Flow Direction** 



**Direction Coding** 

#### Flow Accumulation



**Flow Direction** 

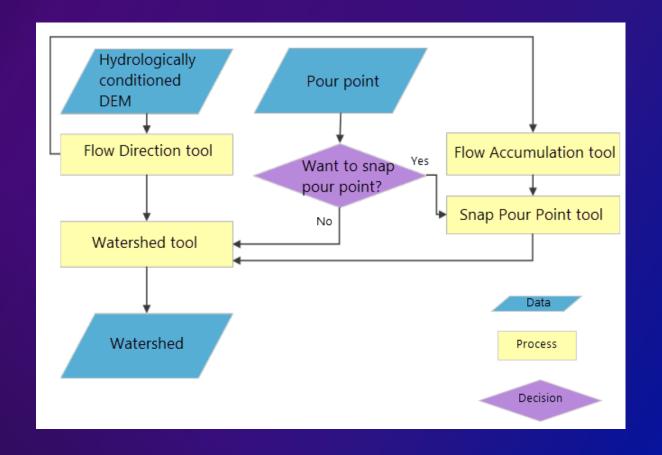
0	0	0	0	0	0
0	1	1	2	2	0
0	3	7	5	4	0
0	0	0	20	0	1
0	0	0	1	24	0
0	2	4	7	35	2

Flow Accumulation

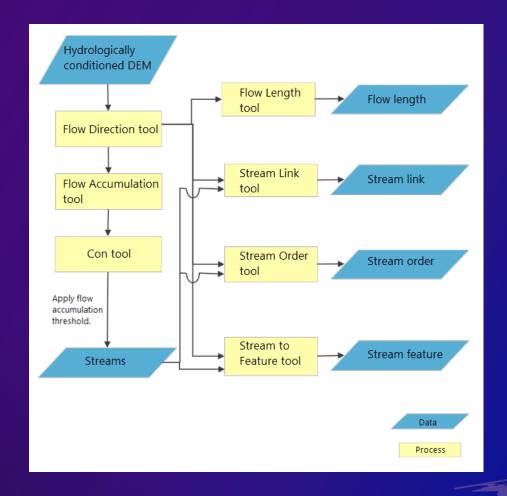
32	64		128	
16		/   \	<b>→</b> 1	
8	4		2	

**Direction Coding** 

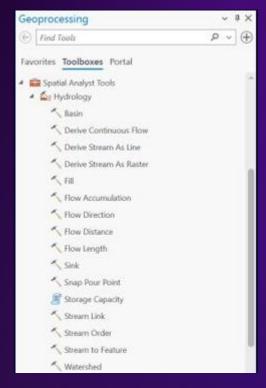
#### **Watershed Delineation**



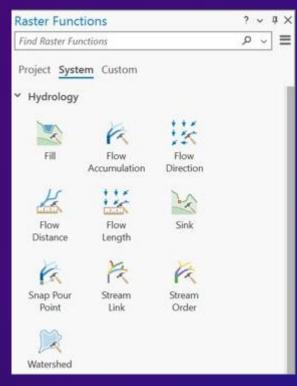
#### **Stream network and characteristics**



#### **Hydrology Tools**



**Geoprocessing Tools** 



Raster Functions

